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IMPACT STUDY FOR A FORESIGHT SURVEY

IMPACT *of* EUROPEAN UNION INTEGRATION *on the* AGRO-FOOD INDUSTRY *in the Countries of Central and Eastern Europe*

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

economy environment employment

Impact of European Union Integration on the Agro-food Industry in the Countries of Central and Eastern Europe

Impact Study for a Foresight Survey

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in the Countries of Central and Eastern Europe

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna, 2004

Foreword

The prospect of the integration of the agriculture and food processing industry of the Central and Eastern European (CEE) countries in the unified European economy represents important economic and political opportunity and challenge. This process of integration is expected to have significant effects on the patterns of property, production, employment and trade in agricultural and food products sectors. Following the experience in other areas, the integration process "is likely to be stimulated by the development of cross-border linkages among firms which lead to a network of production relationships throughout the region. Such linkages have been shown to have a major influence on the path of development in Asia and appear to be emerging as a factor in Europe. Though producer network have not sprung up in farming, a good deal of interaction at the processing and food manufacturing level is taking place, giving rise to important linkages which will shape policy and influence development".[1] Integration process to the European Union would open the market for foreign investment, especially for building infrastructure (logistic and storage technology), modernize production technology and increase marketing activities. This process is expected to restructure the agro-food sector in the CEE as productive chains, incorporating the necessary institutional framework for modern food industry, financial services, wholesale markets, commodities exchanges and future markets, price information, quality standards, controls and certification, export marketing agencies and transportation facilities and infrastructure. To capture this complex transformation process, future studies and trend analysis are on demand to cover structural and functional change scenarios, as well as technology development, which will affect gains and losses for the present industrial basis in the region. Technology Foresight exercises at the regional level could contribute to build consensus and agreements among the key stakeholders to conduct these transformation in a sustainable manner.

Starting with one regional technology foresight exercise, UNIDO took the initiative to launch an impact study with the objective to define common issues and scope of changes and developments likely to occur to the regional and national agro-food production chain in the CEE countries as a result of the European Union (EU) integration process. This impact study forms a basic

[1]The agriculture and food sectors: the role of foreign direct investment in the creation of an integrated european agriculture. Timothy Josling and Stefan Tangermann. In: *Enlarging Europe: The industrial foundations of a new political reality*. Research series (University of California, Berkely. International and Area Studies), 1998.

framework for a technology foresight exercise on challenges and opportunities of EU integration to the agro-food industry in the countries of Central and Eastern Europe.

The impact study was expected to:

- Discuss problems and issues related to the impact of EU integration on the agro-food production chain in selected CEE countries, such as Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.
- Collect and analyse available research results on the future possible impacts (challenges and opportunities), which the agro-food industry in the CEE countries will be facing in their integration process into the European Union.
- Prepare a diagnosis on the agro-food production chain in the selected countries and in the subregion and design alternative scenarios for the future development of this production chain.
- Define common issues at regional level for conducting a comprehensive Technology Foresight exercise to address the future development of the agro-food industry in the CEE countries, in the horizon of 10 years.

The study was conducted through deskwork to collect data and information, consultations with key local stakeholders, workshops and round table discussion at the Technology Foresight Summit 2003 (March 2003, Budapest).

The study addresses the new challenges and opportunities to agro-food industry which could come with accession of countries, such as Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia, to the European Union in 2004 and 2007 respectively.

The study report presents the following issues:

- Analysis of the agricultural sector prior to accession:
  Changing share of agriculture to GDP in all 10 accession countries; major structural adjustments in the transition period 1990-2002; starting conditions for accession in terms of property rights, production, employment, trade, subsidies and prices, competitiveness.
- The agro-food industry in the accession countries:
  Size of the agro-food industry in terms of production and employment; specialization patterns in the region and compared to the EU; development trends between 1995 and 2002; international competitiveness including wages, productivity and unit labour costs; trade

competitiveness and structure (in trade with the EU) e.g. market share developments, export performance etc.; importance of foreign direct investment (FDI); regional map of agro-food industry showing regional development clusters.

- The likely impact of accession to the European Union-scenarios: Impact of CAP; impact of the common market; compliance with EU regulations, trade diversion and redirection; new agro-food production chains; patterns of foreign direct investment.
- The scooping of foresight study on the impacts of EU accession to the agro-food industry in the CEE.
- Topics, problems and common issues to be addressed.

The results of the impact study constitute the basis for the envisaged foresight survey and therefore represents its first phase.

The foresight study will aim at to providing advice for governmental decision makers in the Central and Eastern Europe with regard to the transformation of their industries to cope with the new EU legislative and regulatory framework, as well as the competitive pressure of the EU market.

This study has been prepared by the Vienna Institute for International Economic Studies (wiiw) under the coordination of the UNIDO staff member Ricardo Seidl da Fonseca.

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As the requirement to implement strict EU standards and rules will force many family farms in the CEECs to leave the market, they will probably decline in number. Large farms, cultivating leased land, will face rising labour- and land-related costs. In order to survive, high technological standards will become a decisive issue. However, lack of funds—from own or external sources—will limit enterprise modernization. Compliance with EU standards will call for investment on a massive scale. Not all the large farms will be able to cope with the problem. In regions where other conditions are also favourable, high-quality farmland land is likely to attract foreign investors even before the market has been fully liberalized.

Vis-à-vis the EU-15, the accession countries record a trade surplus in farm products. At the same time, rising incomes among the non-agricultural population will boost the demand for processed food and thus the demand for farm products. As a result, the trade surplus in farm products will diminish and could even turn into a deficit in the longer run. Moreover, for some of the most important farm products, production quotas will restrict output expansion.

Assessing the long-term prospects of CEE agriculture is a difficult task: In January 2003 the EU Commission presented a package of reforms of the Common Agricultural Policy (CAP). Discussions will be long and fierce, and the ultimate outcome is hard to predict. The forthcoming new rounds of WTO negotiations are likely to have an impact on the CAP reform. The negotiations will probably strengthen the opponents of the existing CAP system. Therefore, the degree to which the present system will survive is an open question.

Food processing: present state and likely impact of EU accession

The food processing industry holds an important position in the candidate countries' economies in terms of production, employment and foreign direct investment, but not in terms of exports to the EU. Within the region, it has an above-average position in Bulgaria, Hungary, Poland, Romania and the Baltic states. With regard to EU accession, the food processing industry seems

to be better situated in Bulgaria, Hungary and Poland, owing to its comparative advantage in trade with the EU-15. This, in turn, is based largely on a comparative advantage in the following branches: fruit and vegetables in Bulgaria, meat and meat products and fruit and vegetables in Hungary, and meat and meat products, fish and fish products, fruit and vegetables and dairy products in Poland. In the period 1995-2001, the performance of the food processing industry was relatively weak: production, productivity as well as exports to the EU grew only slowly, much less than manufacturing on average. There were only two exceptions: Poland, which showed higher production growth and considerable gains on the EU market, and Romania, which did well on the domestic market and displayed strong productivity growth.

EU accession might have effects on the supply side of the food processing industry, on production itself and on the demand side (export and domestic markets).

- Improvements in the agricultural sector in the wake of EU accession (efficiency, quality) will also help the food processing industry to improve.
- Rising input prices of agricultural raw materials, unless compensated by EU payments, will increase costs in the food processing industry and hence reduce cost competitiveness.
- Increasing wages will also decrease cost competitiveness, unless countered by productivity growth.
- The implementation of the acquis relating to health safety, quality of food and other requirements such as animal welfare and environmental protection will put high pressure on domestic enterprises, many of which will have to shut down.
- Foreign direct investment inflow into the candidate countries will continue and may even intensify.
- The opening-up of the EU internal market will probably bring about better export opportunities, but only for companies capable of meeting EU standards.
- The opening-up of the domestic market will bring about stronger import competition from EU products, which are backed by better marketing and large sales promotion budgets.
- The common external tariff on food products applied in the EU is currently lower than that applied in several CEECs; in these countries, imports from non-EU countries will increase. However, the requirement to meet EU standards will restrict these imports.
- The long-term rise in income will help the food processing industry, although the income elasticity for many food products is less than one. In addition, specific areas will be favoured as domestic food consumption changes in structure (luxury goods)

EU accession will offer the food industry in the new member countries new opportunities:

- Better chances for growth will arise in the sphere of high income-elasticity products, a fact that should attract further foreign direct investment.
- More emphasis can be put on branding products. In fact, old brand names from the communist or pre-communist period are currently experiencing a revival: something that both domestic enterprises and foreign direct investment companies may benefit from.
- Over the past years of transition, many farms could not afford to purchase large quantities of agro-chemicals. This presents a good opportunity for organic farming and the appropriate processing of output. As this branch of agriculture and food processing is relatively labour-intensive, the low wages in the CEECs are an additional advantage.
- The emergence of clusters is vital to the further development of the food processing industry. In general, clusters have a positive influence on innovation, competitiveness, skill formation and information, as well as on further concentration and growth dynamics. In the countries of Central and Eastern Europe, cluster creation is still in its initial stages.

Foresight survey requirements

Research efforts should be directed towards identifying those subsectors and products in agriculture and food processing in which the accession countries could acquire or strengthen a comparative advantage. It would be essential to identify the support that legislation and state administration could lend this process.

In the field of agriculture as well as food processing, a foresight survey should focus on likely scenarios of structural change, taking into account the possible outcomes of the change in the trade regime in the wake of EU accession, as well as possible outcomes of a reform of the Common Agricultural Policy and of the WTO negotiations.

It is important to find sound solutions on the enterprise level, in the representation of enterprises on the branch level, on the EU and international level, in the field of legislation and administration and from a macroeconomic point of view. Results of a foresight survey would be instrumental to taking decisions that could shape a better future.

Introduction

Impact of EU integration on the agro-food industry in the countries of Central and Eastern Europe

The economies of the Central and East European countries (CEECs) in general, and the agro-food industry in particular, have undergone dramatic changes during the past 13 years since the collapse of communism: the transformation to a market economy system including major changes in ownership, a severe fall in output in the first years, overcome only slowly, restructuring and modernization of companies, significant changes in trade orientation etc. The major aim of the CEECs—accession to the European Union—is now ahead of them, requiring new adjustments and posing new challenges but also threats to CEE farms and the agro-food industry. The integration process into the EU is expected to restructure agriculture and the agro-food industry in the accession countries (comprising Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia) which will join the EU in 2004 and 2007 respectively. These and related matters were discussed at the UNIDO Technology Foresight Summit 2003, held in Budapest on 27-29 March 2003, for which this study served as a background paper.

The UNIDO Technology Foresight Summit 2003, Panel TF 7

Generally, the UNIDO Technology Foresight Summit 2003 functioned as an important tool for directing the focus on competitiveness and innovation in the region, for giving recommendations to decision makers, and also for identifying hot issues in certain sectors of the economy (i.e. biotechnology, agro-food industry, automotive industry). It brought together policy representatives at the highest level, top business leaders, as well as heads of research institutes. Panel TF 7 of the conference focused on "Prospects and New Technologies for the Agro-food Industry", with the aim to analyse the present conditions as well as future prospects of the agro-food industry and to discuss them in a distinct round of professionals. The papers presented looked into the situation of agriculture only or dealt with the whole agro-food industry, including agriculture and food-processing. Altogether, a number of important topics were raised: strengths and weaknesses, opportunities and threats connected to EU accession, policy recommendations as well as the need for future research requirements. The present study as well as other papers and discussion results will provide the basic framework for a more comprehensive project that is to analyse the impact of EU integration on the agro-food industry in the countries joining the EU and also to develop scenarios for the next years.

The new, multifunctional role of agriculture was stressed in several papers: apart from the production of foodstuffs and animal feed, agriculture has to perform several other important functions related to cultural and historic heritage values, rural development or eco-tourism. While the awareness of this new role of agriculture has been growing (if slowly) in Western countries, it still has to reach the population of Central and Eastern Europe. With the collapse of communism, the farming methods used so far became a topic; new methods are now on their way into CEE agriculture as well: integrated farming, organic farming, biotechnology and genetic modification. These methods were described and also vividly discussed in the papers, e.g. the advantages of high-yield farming against organic farming. In fact, the real hot topic in the panel discussion turned out to be genetic modification: conflict arose from the fact that CEECs are consumers of GM-food, but not producers, as the stringent EU rules on GM would have to be applied in the CEECs as well. The wish for more liberal EU rules emerged in the discussion.

With regard to the food-processing industry, the key importance of the sector in the CEE economies was illustrated by several papers that stated its major role as a producer, employer and as an attractive target of foreign direct investment. Problems were addressed too, including the industry's relatively weak performance in recent years in terms of production and productivity, or its small presence on the EU market. Other problems in the food-processing industry were illustrated by the example of Slovakia, such as surplus capacities, the slow pace of modernization due to the general lack of funds, as well as shortcomings in good manufacturing practice.

Overall, the future prospects of the agro-food industry were seen to be dependent on the future accession to the EU (with the reform of the EU's Common Agricultural Policy being another element of uncertainty) as well as on the ongoing WTO negotiations. Referring to the former, the compliance with strict EU standards and rules will put strong pressure on family farms, large farms and food companies alike. Among experts there is no denying that it will be difficult for some farms/companies to find the funds they will need to improve operations and meet the EU standards. In fact, not all of them will be able to do so and will thus have to be closed down. On the positive side, food companies will doubtlessly enjoy greater sales opportunities on EU markets, broader relations with foreign companies and better product quality. The same applies to some subsectors of agriculture and to non-regulated products.

In order to cope with these future challenges and changes, a set of rather general policy options was suggested by the papers. These included, for instance, the strengthening of competitiveness and restructuring of the sector, a change in the support policy, improvement of the marketing infrastructure, as well as the strengthening of research and education. However, so as to give all market participants (farmers, managers, chambers, and governments) an idea of future market conditions and likely scenarios resulting from them, the need for further studies was generally expressed.

The wiiw study

This study provides a comprehensive picture of the "agro-food industry"—defined as agriculture and food processing—in the 10 Central and East European countries (CEEC-10). Chapter 1 analyses the CEE agricultural sector in its current state including structural adjustments during the transition since 1990. The following issues will be covered: the changing share of agriculture in GDP, major structural changes in the transition period 1990 to 2001, starting conditions for accession in terms of property rights, production, employment, trade, subsidies and prices, and competitiveness. Chapter 2 examines the food processing industry in the region. It deals with the size of the food industry in terms of production and employment, specialization patterns compared to the European Union (EU), development trends in the more recent transition period, factors of cost competitiveness and the key features regarding trade with the EU. At the end of Chapters 1 and 2, the likely impact of accession to the EU on agriculture and on food processing will be investigated. Chapter 3 describes the consequences for the agro-food sector as a whole. Chapter 4 states further research requirements that should be dealt with in the next foresight study on the impacts of EU accession on the agro-food industry.

In five selected CEECs (see table 1), the agro-food industry accounts for 5.4% to 7.5% of GDP. The lowest share of value added in GDP in 2000 was recorded in Slovenia, the highest in Slovakia and the Czech Republic. Herein agriculture (including hunting, forestry and fishing) and food processing hold about half of the total each, with agriculture being somewhat larger in most countries—except in Poland and Slovenia where the share of the food processing industry is slightly higher. In detail, agriculture has a share of 3% to 4.5% in GDP, food processing of 2.4% and 3.5% (for the size and role of agriculture and food processing in the other CEECs see chapters 1 and 2).

Table 1. Overview of the size of the agro-food industry

	GDP	*Agriculture, hunting, forestry and fishing*	*Food products, beverages and tobacco*	*Agriculture, hunting forestry and fishing*	*Food products beverages and tobacco*	*Together*
	Value added in EUR million,[a] 2000			*In percentage of GDP*		
Czech Republic	55 738	2 222	1 948	4.0	3.5	7.5
Hungary	50 572	1 879	1 516	3.7	3.0	6.7
Poland	170 776	5 650	5 774	3.3	3.4	6.7
Slovakia	21 339	966	536	4.5	2.5	7.0
Slovenia	20 594	627	490	3.0	2.4	5.4

Source: National statistics.
[a]At current prices at exchange rates.

1 Agriculture: present state and likely impact of EU accession

The state of affairs after a decade of reforms

Basic facts

In the Central and East European countries (CEECs)[2] the share of agriculture in the Gross Domestic Product (GDP) has been diminishing in the course of transition, but is in most cases still above the European Union's average. The share of agriculture in total labour force, too, fell drastically in most countries. Romania was an exception in this respect: here, agriculture has remained an important segment of the economy and its share in total employment is high compared to other CEECs; it even rose in the years of deep economic crisis, 1997 to 1999. Also Bulgaria, Latvia, Lithuania and Poland are countries with high shares of agriculture in total employment. In these countries, agriculture employs more persons than would be required from an efficiency point of view, and the sector's labour productivity is correspondingly low. Persons who otherwise would be unemployed engage in agricultural activity, frequently on a subsistence level. This fact lowers the countries' overall rate of unemployment, which nevertheless tends to be high.

Conditions in individual countries

With respect to agriculture, we can divide the countries investigated into two groups. In the first group—Poland and Slovenia—family farming was maintained as the dominant form of agricultural activity also in the period of central planning.[3] As a consequence, no considerable systemic change was required during the transition to a market economy. In the second group—the Baltic states, Bulgaria, the Czech Republic, Hungary, Romania and Slovakia—the

[2]The CEECs here refer to the Baltic States (Estonia, Latvia, Lithuania), Bulgaria, the Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia.

[3]In Poland, this was the outcome of the farmers' fierce opposition against collectivization

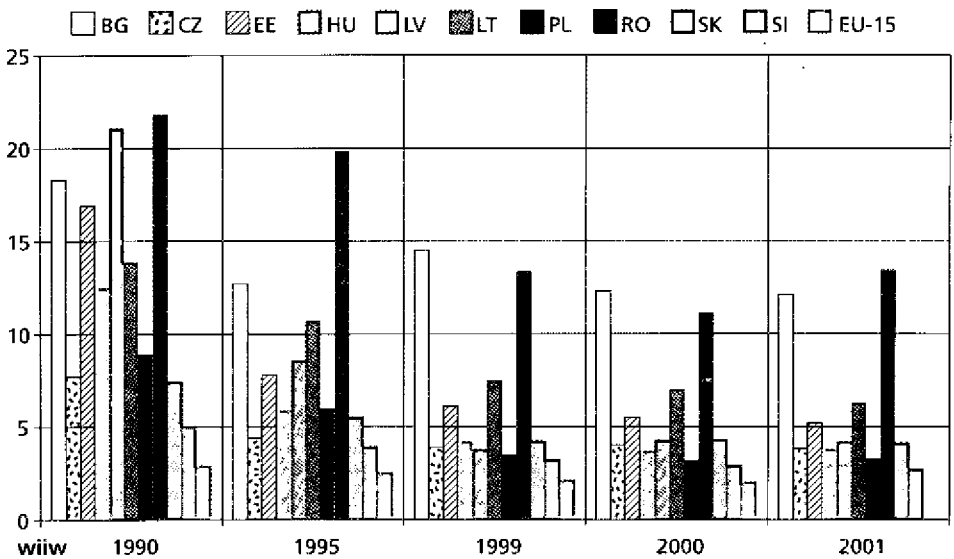
communist governments had marginalized family farming and, on the threshold of transition, big state-owned enterprises or cooperatives cultivated the land. In this latter group of countries, farming was quasi industrialized: a situation considered by many experts in East and West as advantageous due to (potential or realized) economies of scale. In the Czech Republic, Hungary, parts of Poland and Slovakia the reforms led to the following result:

- continuation of large-scale farming combined with
- restitution of farmland to former owners.

That was a big achievement, which is not self-evident, as illustrated by the examples of Bulgaria and Romania where privatization has resulted in extreme fragmentation of land cultivation. In the Baltic countries, privatization was more complicated and time-consuming because of difficulties in identifying landowners.

The large majority of landowners in the Czech Republic, Hungary and Slovakia are living and working in urban areas and leasing their land—in most cases a few hectares only—out to the farms that have cultivated that land already for decades. These landowners do not have much of a choice and the room for negotiating the leasing rate is tight, if there is any. The farms—organized as joint stock companies, limited liability companies or cooperatives—have good chances of being profitable in more favourable locations, but are frequently loss-making in others. In Hungary, good locations

Figure I. Share of agriculture in CEECs' GDP (percentage)

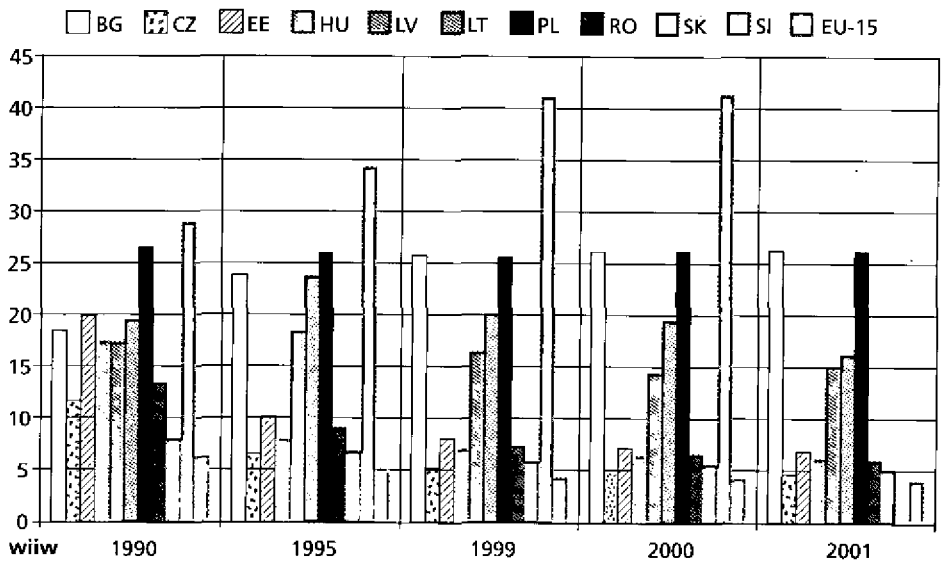


Source: National statistics, **wiiw** Database.

Note: Bulgaria (BG); Czech Republic (CZ); Estonia (EE); Hungery (HU); Lativa (LV); Lithuania (LT); Poland (PL); Romania (RO); Slovakia (SK); Slovenia (SL); European Union (EU).

are prevailing, so that loss-making farms are less of a problem. In less favourable Czech and Slovak regions, farms frequently continued operating after 1989 without fully meeting their payment obligations, including those vis-à-vis the landowners. In both countries, the government did not succeed in enforcing deadlines for the farms' settlement of claims of former members of cooperatives. Many of these farms are heavily indebted; on the other hand, they have also accumulated claims especially vis-à-vis wholesale traders and food processors who did not pay what they bought. Especially in less favourable areas the farms still use predominantly buildings and machinery from the pre-transition era. The profits that they would need for investment into new equipments and plants are not available to them, which disqualifies them also as borrowers from commercial banks. Borrowing is even difficult for profitable farms, as the banks do not accept farmland as a collateral. A market for farmland in the sense of ownership transactions is in most regions practically nonexistent, so the banks can hardly assess which price a piece of farmland would achieve in an auction. The farms, which are the obvious candidates for purchases of farmland, have no funds to realize such purchases. In the vicinity of urban areas and other agglomerations there is demand for farmland, backed by the hope that sooner or later it will be rededicated for construction purposes. The situation is also different in the vicinity of borders with EU countries. There, EU citizens have already got hold of farmland; the corresponding deals circumvented the existing restrictions concerning landownership by foreigners.

Figure II. Share of agriculture and fishing in CEECs' total employment



Source: National statistics, **wiiw** Database.

Thus, the contrast is striking. In one group of countries—the Czech Republic, Hungary and Slovakia—we can observe a dominance of farms that have the ideal size for the use of agro-industrial technologies; however, in less favourable areas they do not have the funds required for upgrading their technical equipment nor are they the owners of the land that they are cultivating. Many of these farms are heavily indebted. In a second group of countries—Poland and Slovenia—the traditional type of Central European small farm, cultivated by the owner family, is dominating. In Poland, part of these family farms work on a subsistence level, the technologies they use are obsolete. Much less so in Slovenia: in most of the farmer families, at least one person has a job outside farming, and often part of that person's income co-finances the purchase of new farm equipment. Slovenia's budgetary situation is sound; the government can afford making small-scale family farming viable through direct payments to farmers, credit subsidization, price regulation and export subsidies. The electorate backs or tolerates this policy; the degree of subsidization is as high or even higher than in the EU. Slovenia is the only CEE country where a market for farmland had developed, so that market pricing has been established; its level is not far below the EU-15 average. In Poland, the members of farmer families have much less opportunities to find jobs outside agriculture, and the government is not in a position to provide the same extent of support as in Slovenia: the per capita income is much lower, the budgetary situation is worse and the share of agriculture in total employment is much higher. In Bulgaria and Romania, most of the farmland was returned to its original owners by restitution. These owners started cultivating their land with inadequate technical equipment and in spite of an agricultural infrastructure that does not meet the requirements of small-scale farming.

Today, over 90% of the CEECs' agricultural land is in private hands. In the majority of these countries ownership transactions have rather an episodic character, they comprise a very small fraction of total farmland. In these rare cases, the price of farmland was about one tenth of a comparable unit in the EU. This situation makes it of course interesting for EU citizens to buy land in CEECs. That would cause a move towards price convergence, implying high gains for those foreigners who are fast in stepping in. For the urban owners of farmland, selling their property to foreigners would become an attractive option. For the Czech, Hungarian and Slovak type of farms, the land leasing costs could multiply, at least in some regions. Polish family farmers would see the value of their property rising. The impact of rising prices for land—agricultural as well as other—would not be limited to farmers, but touch the economic interests of other groups as well. That is why legislative barriers prevent non-citizens from acquiring land. To avoid land market-induced disturbances upon joining the EU, in the accession negotiations CEECs insisted on postponing full land market liberalization, up to 12 years. It is expected that after a certain number of years of EU membership, the gap between the general price level of the CEECs and the EU-15 will have diminished; this could come about through CEE inflation rates being higher

than those in the EU-15, nominal appreciation of CEE currencies, or a combination of both. In parallel, the market for farmland will develop and lead to farmland prices not far below EU-15 levels.

Low degree of subsidization maintainable thanks to favourable exchange rates

In the first years of transition the CEE governments, led by the spirit of economic liberalism, reduced the subsidization of agriculture drastically—with the exception of Slovenia. For agriculture, this meant a shock. The farms could not afford purchasing the same amount of inputs as before: chemicals such as herbicides and pesticides, fodder concentrates, gasoline, seeds, machinery and so on. Part of their production, if not all, became unprofitable. As a result, the sector's output declined dramatically, and has not fully recovered until the present day. Output of many farm products is still below its pre-transition level. When negotiating the conditions for EU accession, the CEECs requested the pre-transition output levels to be accepted as the norm for setting their future production quotas, but the EU insisted on quotas based on the output averages of the most recent years.

Table 2. Development of subsidization (PSE)[a] in the CEECs and in the EU
Share of subsidies in gross revenues of agriculture (percentage)

	1992	1997	1998	1999	2000	2001[b]
Bulgaria	-45	-10	2	-2	1	3
Estonia	-89	6	20	6	7	13
Latvia	-101	4	18	19	14	15
Lithuania	-124	4	16	16	6	11
Poland	1	12	22	19	7	10
Romania	8	3	30	20	19	24
Slovakia	30	11	31	25	23	11
Slovenia	32	32	42	49	39	40
Czech Rep.	32	6	23	24	16	17
Hungary	18	6	19	23	20	12
EU	38	32	36	39	34	35
OECD	35	28	33	35	32	31

Source: OECD (2002f).

[a]Producer Support Estimate: Direct and indirect subsidization of agriculture, net of tax, as a share in the farmers' gross revenues. Contrary to the former PSE concept, the newer one, as used from 1998 on, does not include indirect subsidization in terms of financing of research, development and marketing.

[b]Preliminary.

At present the farmers in the CEECs, except for Slovenia, pay input prices that are on average significantly lower than in the EU-15. This is because the CEE exchange rates make the overall price level in these countries much lower than in the EU-15. Due to this logic, in most cases the output prices, the so-called "farm gate prices', are also lower, although in general the gap vis-à-vis the EU-15 is smaller than in the case of input prices. CEE farm gate prices are, as a result of the established exchange rate levels, not much above world market prices. This is an advantage compared to Slovenia or the EU: if the farmers produce more of an output than the domestic market absorbs, the country can export the surplus without much subsidization, as the gap between farm gate and world market price determines the subsidy required per unit of output.[4] However, during the past few years, in the Czech Republic, Hungary, Poland and Slovakia a tendency towards nominal appreciation became visible. The degree of export subsidization grew correspondingly. A frequently used measure of subsidization is the Producer Support Estimate (PSE). It relates the sector's realized revenue to that which the sector would have achieved at world market prices. In the case of farm gate prices below world market levels, PSE turns out negative, which may be interpreted as subsidies from the country's agriculture to the rest of the domestic economy and the rest of the world. PSE figures for CEECs point to a relatively low degree of subsidization of agriculture, mirroring the relatively small gap between their farm gate prices and world market prices.

Notorious deficits in agro-food trade in spite of surpluses in the subdivisions of agro-trade

At the beginning of the 1990s, CEE agriculture lost its traditional export markets: exports to the former Soviet Union countries collapsed, and so did the trade among the CEECs. The individual countries started redirecting their agro-food exports (i.e. exports of agricultural output plus of processed food) towards the EU. At the same time, the CEECs signed association agreements with the EU as a first preparatory step towards future membership. These agreements initiated a step-wise liberalization especially of trade in industrial output, much less in farm products. In the following years, the agro-food trade balances vis-à-vis the EU deteriorated rapidly due to a strong deficit in the trade with processed food. Today, among the countries discussed here, Hungary is the only one to enjoy a surplus in agro-food trade with the EU-15.

The region as a whole records a permanent deficit in agro-food trade vis-à-vis the EU-15. Between 1995 and 2001, agro-food exports to the EU-15 covered between 73% and 91% of imports. This was the net outcome of surpluses in agro-food trade which were more than offset by deficits in the trade with

[4]The counterpart of export subsidies are tariffs high enough to raise the price of imported farm products to the level of the domestic farm gate price. Alternatively, the government may maintain import quotas and other non-tariff barriers.

processed food. The differences between the individual countries were, however, considerable. Most remarkably, Poland's balance in food trade with the EU improved strongly after 1995 and was balanced in 2000 and 2001, whereas after 1995 agro-food exports covered only between one half and two thirds of agro-food imports. Like Poland, also the Czech Republic and Slovenia recorded a deficit in agro-food trade. However, in their case also the exports of processed food lagged far behind imports, with coverage ratios below one half and one quarter respectively. Other countries with a high deficit in the trade with processed food were Estonia, Latvia, Romania and Slovakia.

For the region as a whole, trade in crops was responsible for the deficit in agro-food trade with the EU-15; trade in animal products, forest and fishery output was in surplus. Hungary alone recorded a permanent surplus in all these subdivisions of agro-food trade.

Convergence with the EU as achieved so far

In recent years, the CEECs have started assimilating the principles and instruments of the EU's Common Agricultural Policy (CAP). The CEECs have restructured subsidies in favour of direct payments to farmers. At the same time, they have also started subsidizing bank loans to farmers and exempting some inputs from taxation. A mutual reduction of tariffs and export subsidies were steps towards the liberalization of trade between the CEECs and the EU.

An essential problem for CEE farmers—as well as for food processors and agro-food traders—are EU quality standards and phytosanitary, veterinary, animal welfare and environmental EU rules. The CEE governments have started adopting these standards and rules; however, only after massive investment will farms, food processing factories and those operating in transport services, storage and distribution be able to comply with these standards and rules. At present, some of these standards and rules represent trade barriers that hamper CEE exports to the EU.

The new challenge: achieving success within the enlarged Union

Points of relevance in the Copenhagen Agreement

The CEEC-5 together with the three Baltic states, Cyprus and Malta are on track to become EU members in May 2004, as agreed on at the Copenhagen summit of December 2002. For CEE agriculture, the Copenhagen summit brought first of all the following results:

- The new member States will take over the system of regulating the supply of certain products through quotas. Quotas will be based on

production results of the most recent three years that were available at the Copenhagen summit. The CEECs cold not push through their proposal to use the last years prior to transition as reference years.

- Farmers in the new member States will be entitled to receive direct payments. These payments will reach their final level only in 2013; in 2005, the second year of membership, EU payments will start, but reach only 25% of the full amount. In the following years this percentage will rise gradually. The new member countries will have the right to add direct payments out of their national budgets. The EU accepted also a reshuffling of EU funds: up to 2006 the governments are free to increase direct payments through the use of part of the funds originally earmarked for rural development, and Poland also got a go-ahead for shifts from structural funds to direct payments. However, even if the CEECs used all these facilities of reshuffling and topping up out of national sources, direct payments would amount, compared to the projected final level, to only 55% in 2005 and to 60% in 2006. After the phasing-out of the transitory period, i.e. in 2013, direct payments per hectare or person employed in agriculture in the new member States will be lower than in the EU-15; the amount of direct payments is related to production indicators of the pre-accession period, which are relatively low. In Copenhagen, the negotiators agreed on the totals to be allotted to the individual countries out of the CAP direct payment fund. The distribution of the total among farmers will be the task of national and regional authorities.

- Immediately upon accession, the new member countries will have free access to the EU markets for the output of agriculture and the food industry—on condition that they meet the EU quality standards and observe the phytosanitary, veterinary, animal welfare and environmental EU rules.

- Rapid development of rural areas is a priority target. The related funds should help to develop a better infrastructure and new employment opportunities outside agriculture. They will offer early retirement schemes for farmers, improve environmental protection, finance programmes for easier abolishment of farming on a subsistence level and schemes for forestation of agricultural land.

CAP reform—a new Commission initiative

On 22 January 2003, the European Commission presented a package of proposals for a reform of the CAP. The package also designs the financial framework for agricultural expenditures up to 2013. The plan is a modified version of a proposal from July 2002. The declared fundamental aims of both versions are sustainability of agriculture and stronger market orientation. The

Commission wants to achieve the latter through a further shift from product to producer support,[5] which in EU terminology is a reshuffling within the "first pillar" of the CAP.

The second key element of the proposal is a strengthening of rural development, the so-called "second pillar'. The Commission wants to reduce the funds for market price support as well as for direct payments and to use the gains from these cuts for a topping-up of the rural development funds.

Decoupling

Starting from 2006/2007, the producer support should be based on the amount of aid that the individual farmer has received in the past. Thus in the future it should not be linked to current production and be bundled into a single annual transfer. This is labelled "decoupling" by the Commission. This decoupling is the most important ingredient of the reform package. The idea is that in the future the farmers or farm managers should make their product decisions without considering whether or not a product line is subsidized. This should mean more market orientation. The decoupled single payment would simplify the farmers' aid application form. It would also reduce the administration of controls.

Nevertheless, control requirements would remain: The Commission wants to link such payments to compliance with environmental, food safety, animal welfare, health and occupational safety standards, as well as the requirement to keep all farmland in good condition ("cross-compliance").

Degression

The Commission proposes a "dynamic modulation" of direct payments: a gradual reduction so that farms who at present receive more than 50,000 euro would receive 19% less in 2012. For farms receiving between 5,001-50,000 euro the cut should be 12.5%, whereas for those who so far received 5,000 euro or less, the Commission wants to freeze the amount of payments. This size-specific approach is called "degression" by the Commission.[6]

For the new EU member countries the Commission proposed an exemption from degression, valid for the period of incomplete phasing-in of the direct payment scheme.

More support for rural development

Part of the cut of funds for the "first pillar" should, so the proposal, serve as support of rural development ("second pillar"). The Commission is eager to stress that the farmers themselves would also profit from rural development

[5]For example, the proposal foresees a final 5% cut of the intervention price for cereals coupled with compensating higher direct payments for cereal farmers.

[6]Currently, 20% of all farms absorb 80% of the CAP funds.

programmes, directly or indirectly. Some of the money for rural development should help farmers to cope with new investment requirements in the context of EU production standards, animal welfare and quality promotion. The main beneficiaries of the rural development funds should be less-favoured regions. The funds should strengthen the multifunctional character of agriculture. The farmers should, so to speak, give up some of the income from EU sources in favour of their rural neighbourhood. Another part of the cuts in first pillar funds should finance new reforms not yet specified.

The proposal as a whole

On the whole, the new CAP reform proposal is to set a ceiling to "first pillar" funds—expenditures on market regulation and direct payments in an enlarged EU. In the forthcoming Doha Round of WTO negotiations, the decoupling scheme should make the EU position less troublesome as it would not cause much market distortion.

The Commission's proposal triggered fierce discussion about its presumable outcome. Some comments guess that at least some farmers would minimize their farming activities and content themselves with keeping their farmland in a condition just enough to remain qualified as recipients of direct payments. Especially owners of small farms in less-favoured areas, so the fear of some commentators, may stop their farming activity, move to urban areas, take up jobs there and enjoy the direct payments from the EU. In this latter case, the payments would conform badly to the Commission's target of keeping rural areas populated. Another guess is that strongly market-oriented farmers may respond with a radical shift from previously subsidized output to new products, which could cause major disturbances on markets for cereals, meat and milk. Others doubt whether the envisaged system would substantially improve the allocation of resources, as it would be far from being a free market system: many elements of the previous system would remain, such as production quotas, guarantee prices and stable transfer incomes.

Most probably, the proposal will experience significant modifications as the views differ considerably between the member countries and the different groups involved.

For CEE farmers, the proposal implies a petrification of the gap to direct payments paid to EU-15 farmers.

The reallocation of funds from subsidization of agriculture to rural development programmes may make sense, but is also problematic. It may be a substitute for increases in structural funds, and there is no guarantee that the rural development funds will fulfil what they seem to promise. A number of pressure groups will try to get hold of that money on its way from Brussels to local bureaucracies. The CEECs' experience with this type of EU funds is not the best. The pre-accession aid programme SAPARD required an enormous administrative effort, such as the implementation of national agencies. This was a time-consuming process, as was the Commission's

accreditation procedure. Thereafter, the submission of projects could start, but the requirements of project preparation were so massive that they were discouraging. Up to now, only a small number of projects has been approved. Thus only part of the SAPARD money will reach its target, after years of delay.

Prospects for CEE farmers

Direct payments in 2005

Compared to the GDP of the EU-15 or to the entire EU budget, in 2005 the direct payments out of the CAP funds to farmers in the new member States will be of a negligible size. In 2005, the first year of direct payments flows to farmers in the new member countries, total flows will amount to about 3% of the Union's entire agricultural budget for the EU-15 and, in other words, to roughly 0.01% of the GDP of the EU-15. In terms of the new members' GDP, it will amount to about 0.25%. In the new member countries, in 2005, the average person working in agriculture will receive from CAP funds an amount of direct payments per year that is more or less close to the gross wage earned in one month by the average industrial worker in the country considered. This also roughly holds true for the EU-15. Given their limited dimension, it is surprising that direct payments to farmers were one of the most controversial issues in the final accession negotiations. The low initial rate provoked fierce protests, much more than the probably everlasting east-west asymmetry concerning the final size of direct payments per hectare.

In the new Central and East European member countries, in 2005, direct payments per hectare of total used agricultural area will average about 30 euro as compared to about 130 euro in the current EU States. This figure of 30 euro is a weighted average; just as in the present EU member States, the differences between the individual countries are large. However, compared to the EU-15 countries, the purchasing power of 1 euro is much higher in the new Central East European member countries, and this will still be the case in 2005. Taking that into account, the direct payments per hectare of total used agricultural area will make up close to 50% of the EU figure.

A crop-producing farm with a size of 1000 ha—in the Czech Republic and Slovakia there are many farms of that size—will receive direct payments ranging between 30,000 and 40,000 euro in 2005: an amount to be regarded as a very modest contribution to the purchase of new machinery. On the other hand, a 10 hectare-sized crop producer—farms of this smaller size are found predominantly in Poland and Slovenia—will only receive about 300 euro. In their present form, direct payments will accelerate rather than slow down structural cleansing, i.e. the elimination of small units. In this way, they will hardly contribute to the solution of some problems of rural areas in the new EU member States—such as high unemployment and depopulation. It is the rural development fund that is aimed at avoiding such tendencies.

Foreseeable budgetary constraints

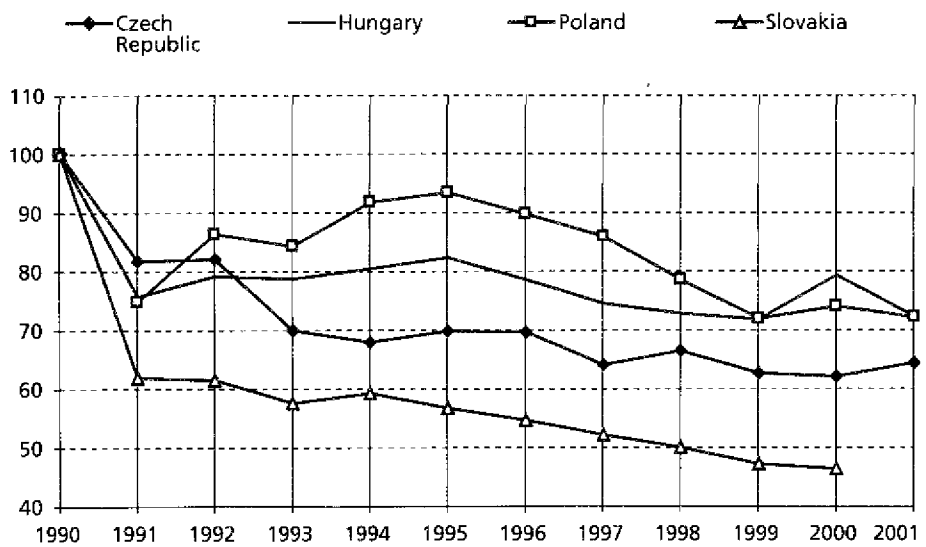
In the first years of membership, the CEE governments will face increasing difficulties concerning their budgets. This is not true for Slovenia, where the budget has always been balanced and an agricultural policy similar to the EU's CAP is already in place. In the other CEECs, the budget deficit, if measured by EU methodology, was between 4% (Poland) and 9% (Hungary) in 2002. The governments will have to pay the annual EU membership fee, whereas they will not be recipients of most of the transfers from the EU. On the contrary, many of the EU payments entering the country will require co-financing from the government. The farmers' organizations will urge the governments to top up direct payments as much as was conceded by the EU. However, the governments will not be in a position to do so—as they will have to start observing the stability criteria as defined in the Maastricht treaty.

Agricultural terms of trade

For farm products, the EU enlargement will remove trade barriers between the new member States and the EU. The Common Agricultural Policy implies guarantee prices for the most important agricultural mass products such as

Figure III. Agricultural terms of trade[a]

1990 = 100



Source: **wiiw** Database incorporating national statistics.
[a]Agricultural output prices deflated by agricultural input prices.

grain, rice, sugar and milk. To prevent the actual market prices from falling below the guaranteed level, the CAP authorities intervene with purchases, build up stocks and subsidize exports. In some cases, the guarantee prices will be higher than the CEECs' pre-accession farm gate prices. However, quantity restrictions—quotas and the like—will discourage CEE farms from increasing their output. The quota system makes sure that agricultural surpluses will not explode after enlargement.

For a limited period, CEE farmers will profit from price increases for some types of output and from initially unchanged low prices for most of their inputs. It is, however, not likely that this situation will last for long. Starting from a very low level, input prices have been rising faster than output prices already in recent years, so the farmers' so-called "terms of trade" have worsened. This process will most probably speed up. Most of the inputs are tradable, so further convergence of their prices to EU-15 levels is likely. The supply of cheap, robust, but technologically obsolete machinery is dwindling, as the producers of such machinery either shut down or are taken over by foreign investors. In the end, the CEE farmers will be confronted with EU price levels both on the output and the input side—and farms characterized by technological backwardness will be in serious trouble. The subsidies, both from EU and from national sources, will not be enough to ensure technological upgrading, notwithstanding the fact that for a transitory period the restriction on funding out of national sources will be less strict.[7]

As mentioned above, in euro terms the CEE prices for domestically produced input are relatively low. In particular, prices for agriculturally used land, for labour and for domestically produced materials are far below EU levels. After EU enlargement, prices for different types of domestically produced output and input will rise. On the input side, this will be the case especially for land, labour and some goods and services. Further, particularly livestock producers in the new member States will have to cope with additional costs stemming from stricter EU sanitary and animal welfare regulations. Step by step new proportions between input and output prices will be established, and this may result in reduced profitability of farms that are not capable of accomplishing the required technological upgrading.

Barriers to output expansion

By insisting on the production quotas being based on the past few years' yields, the EU Commission wanted to prevent future CEE output from surpassing recent levels. Technically, a potential for output increases is there. Should the EU eliminate its schemes of output restrictions at some future point of time, this potential could start to play a role. However, such a scenario is not likely yet. Furthermore, the complete fulfilment of EU quality

[7]The EU rules restrict the use of national sources to a few purposes such as special ecological support programmes.

standards and phytosanitary, veterinary and environmental EU rules in the new member States will confront farmers—in the same way as food processors, transporters and distributors—with massive investment requirements.

Within the Copenhagen agreement, the chapter related to agriculture reflects the Commission's interest in freezing the size of agricultural production in the new EU member States, in order to prevent them from massively enlarging their surpluses in agro-food trade with the EU-15. In the next few years, the average income in the new member countries will rise, and so will food consumption. The domestic absorption of agricultural products could rise correspondingly. Ultimately, the region's agro-food imports from the EU-15 may surpass exports. This would remove part of the stress from the budget of the CAP.

Shifts in the balance of trade

After EU accession, the CEECs' agricultural trade balance will change. The direction and extent of change will differ from country to country. The redirection of trade flows will follow from the removal of the last tariff barriers between the EU-15 and the new member countries as well as between the individual new member countries. At the same time, the EU trade agreements and the EU tariff scheme vis-à-vis third countries will become relevant also for the new members. Depending on the type of products or product groups, for some of the new member countries tariffs vis-à-vis non-EU countries will increase, for others they will decrease. All these tariff modifications will impact the trade in agricultural products.

Agriculture: conclusions

As many family farms will be forced to leave the market upon the introduction of strict EU standards and rules, they will probably decline in number. Large farms, cultivating leased land, will face rising labour- and land-related costs. In order to survive, high technological standards will become a decisive issue. However, lack of funds—from own or external sources—will limit enterprise modernization. Compliance with EU standards will call for investment on a massive scale. Not all the large farms will be able to cope with the problem. In regions where other conditions are also favourable, high-quality farmland is likely to attract foreign investors even before the market has been fully liberalized.

If farms offer some comparative advantages, attractive to foreigners, foreign companies will buy them up. The decisive issues here are favourable production conditions, location close to the EU-15 borders and large-scale farms, which have an optimal size for economies of scale. Small family farms, owning and cultivating their own land, are more resistant to FDI. Besides, foreign investors are hardly interested in small plots of a few hectares.

Vis-à-vis the EU-15 the accession countries record a trade surplus in farm products. At the same time, rising incomes among the non-agricultural population will boost the demand for processed food and thus the demand for farm products. As a result, the trade surplus with farm products will diminish and may even turn into deficit in the longer run. Moreover, for some of the most important farm products, production quotas will restrict output expansion.

Assessing long-term prospects of CEE agriculture is a difficult task: In January 2003 the EU Commission presented a package of reforms of the Common Agricultural Policy. Discussions will be long and fierce, and the ultimate outcome is hard to predict. The forthcoming new rounds of WTO negotiations are likely to have an impact on the CAP reform; they will probably strengthen the opponents of the existing CAP system. Therefore, the degree to which the present system will survive is an open question.

2 Food processing: present state and likely impact of EU accession

The food processing industry produces a wide range of products such as pig meat, frozen fruit and vegetables, margarine, cheese and yoghurt, pet foods, bread, sugar, confectionary, wine and beer and even cigarettes. Procuring raw materials from the agricultural sector, the food processing industry is heavily dependent on output, quality and price of these supplies. In the CEECs, the food processing industry is hence restrained by unfavourable conditions in its upstream-sector; improving productivity and quality in agriculture thus also helps to foster the development of the food processing industry.

According to the NACE rev. 1 classification system (Statistical classification of economic activities in the European Community), the "food products; beverages and tobacco sector" (in the following called "food-processing industry") includes the "food products and beverages" and "tobacco" industries.[8] The subsequent quantitative analysis is based on the wiiw Industrial Database—Central and Eastern Europe (IDB-CEE), on national statistics and on the Eurostat COMEXT Database (EU foreign trade statistics).

Position and development trends of the food processing industry

The food processing industry plays a significant role in the economies of the CEECs: in the year 2001, it featured a total production volume of 57.7 billion euro, calculated at exchange rates, and a workforce of about 1.1 million persons in the CEEC-10. Compared to the EU-15, the size of the CEECs' food processing industry is however relatively small: it accounts for 8.5% of EU-15 production only, but for 31% of total EU employment (see table 3). Simply

[8]In detail, the "food and beverages industry" (division 15 in the NACE rev. 1 classification system) includes "production, processing and preserving of meat and meat products" (group 15.1), "processing and preserving of fish and fish products" (15.2), "processing and preserving of fruit and vegetables" (15.3), "manufacture of vegetable and animal oils and fats" (15.4), "manufacture of dairy products; manufacture of ice cream" (15.5), "manufacture of grain mill products, starches and starch products" (15.6), "manufacture of prepared animal feeds" (15.7), "manufacture of other food products" (15.8), and "manufacture of beverages" (15.9).—The "tobacco industry" (division 16 in the NACE rev. 1 classification system) includes only the "manufacture of tobacco products".

comparing the levels of production and employment between the CEECs and the EU reveals a significantly lower output per employee in the CEECs: with about 51,000 euro per worker in 2001, CEECs' labour productivity (converted at current exchange rates) in the food processing industry is about 28% of the EU level, indicating room for further productivity improvements in the future (employment losses).

Among the CEECs, Poland is by far the largest producer of food products in terms of current production in 2001 (29 billion euro), followed by Hungary (7.2 billion euro), the Czech Republic (6.8 billion euro) and Romania (6 billion euro). As for employment, Poland again takes the lead among the CEECs, followed by Romania, Hungary and the Czech Republic. In Poland, about 452,000 persons were employed in the food processing industry in 2001, in Romania 159,000 and in Hungary and the Czech Republic about 120,000 each. The sectoral labour productivity was highest in Slovenia (about 88,000 euro per worker).

The food processing industry is the key manufacturing sector in Central and Eastern Europe in terms of production and is also one of the major employers, typically more important than in the present EU member States. In 2001, the food

Table 3. Food products, beverages and tobacco: Overview of production and employment, 2001

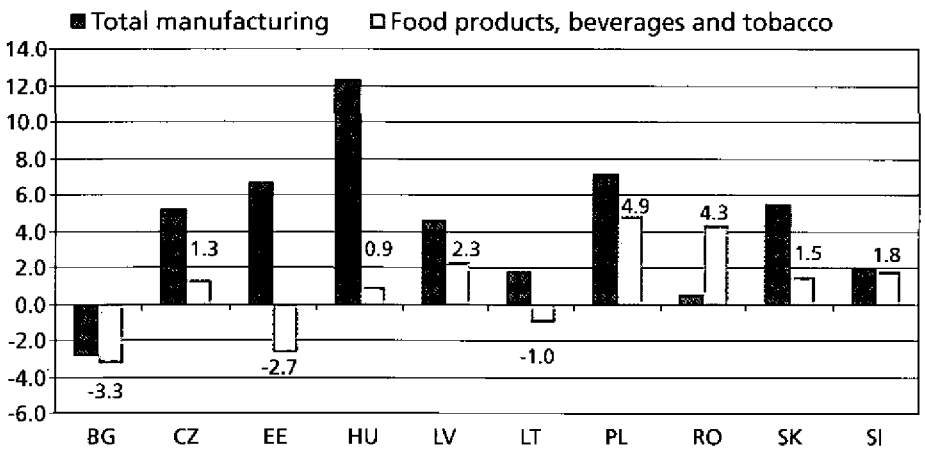
	Production[a]			*Employment*		*Productivity*[a]
	Euro (million)	*Percentage of GDP*	*Percentage of manuf. production*	*persons (thousand)*	*Percentage of manuf.*	*Euro (thousand)*
Bulgaria	1 860.4	12.3	22.1	94.9	17.6	19.6
Czech Rep.	6 827.3	10.8	14.0	120.1	11.2	56.8
Estonia[b]	624.4	11.2	21.5	20.0	17.2	31.2
Hungary	7 214.4	12.5	16.2	120.2	16.0	60.0
Latvia	981.8	11.6	30.1	35.6	24.2	27.6
Lithuania[b]	1 338.8	11.0	23.6	54.7	23.3	24.5
Poland	29 023.3	14.2	24.9	451.9	19.2	64.2
Romania[c]	5 987.2	13.5	22.1	159.0	10.5	37.7
Slovakia	2 057.7	9.0	13.0	45.4	11.8	45.3
Slovenia	1 778.7	8.5	13.7	20.3	8.9	87.6
CEEC-10	**57 694.0**	.	**20.1**[d]	**1 122.1**	**16.0**[d]	**51.4**
EU-15[b]	**677 137.5**	.	**15.8**[d]	**3 628.8**	**14.4**[d]	**186.6**
CEEC-10 in % of EU-15	**8.5**	.	.	**30.9**	.	**27.6**

Source: **wiiw** Industrial Database, Eurostat SBS.
[a]At current prices at exchange rates.
[b]2000.
[c]Production share 2000.
[d]Unweighted average.

industry accounted for 30% of manufacturing production in Latvia, for 25% to 22% in Poland, Lithuania, Bulgaria, Romania and Estonia, and was only slightly smaller in the other countries (16% in Hungary, 14% in the Czech Republic and Slovenia and 13% in Slovakia). This compares to an EU average of 15.8%. The food processing industry ranked first in total manufacturing in most countries, but was challenged by transport equipment and basic metals and fabricated metal products in the Czech Republic and Slovakia, and by the electrical and optical equipment sector in Hungary. Due to its relatively high capital intensity, the position of food processing in employment is smaller and shares ranged between 9% in Slovenia and 24% in Latvia in 2001. Again, shares were mostly higher than in the EU countries on average. The food processing industry belongs to the top three manufacturing employers in the Baltic States, Bulgaria, Hungary and Poland. Other important employers are the textiles and textile products industry, basic metals and fabricated metal products as well as mechanical engineering, in the Baltic States also wood and wood products. In terms of GDP, food processing is the most important industry in Poland (14%), Romania (13.5%), Hungary (12.5%) and Bulgaria (12.3%).

During the more recent phase of transition, i.e. between 1995 and 2001, the food processing industry was growing only slowly: average annual growth rates reached merely between 1% in Hungary and 2% in Slovenia and Latvia. Positive exceptions were Romania (4.3%) and Poland (5%), whereas negative examples were Bulgaria, Estonia and Lithuania where production even declined. Compared to total manufacturing, the food processing industry was hence less successful and it turned into what we may call a "loser" of this period, the only exception being Romania and also partly Slovenia (see figure IV). Employment in the food processing industry declined in all countries, most strongly in Bulgaria (annual average decrease of -5%), Estonia (-6%) and Romania (-6.4% per annum). However, employment cuts were less pronounced than in manufacturing on average.

Figure IV. Development trends compared to total manufacturing
Average annual growth rates, 1995-2001 (percentage)



Source: **wiiw** Industrial Database, national statistics.

From an overall perspective, this weak performance was due to several factors. First of all, when the years of the transformational recession were over, industrial structures began to differentiate and specialization in other sectors, such as transport equipment, emerged. On the supply side, agriculture has still not recovered and is struggling with problems (see chapter 1). In addition, several factors restrained growth on the demand side as well: slow growth of exports to the EU and the Russian crisis in 1998 on the external side and strong import competition on the domestic market.

Available 2002 data for some countries[9] suggest the following trends: the reduction of jobs in the food processing industry continued in 2002, except in Romania. The growth rates of production differed: growth was negative in Slovenia but reached 3% in Poland, 3.5% in the Czech Republic, 5% in Slovakia and 12% in Romania. However, growth rates are still below the manufacturing average in most countries, again with the exception of Romania.

International cost competitiveness

In the CEECs, factors of international cost competitiveness in the food processing industry, including wages, productivity and resulting unit labour costs (ULCs), were and are generally lower than in Western countries, for which we have used Austria as a reference point. In absolute terms, calculated at exchange rates, monthly gross wages in food processing ranged between 121 euro in Bulgaria and 1,004 euro in Slovenia in 2001. While Bulgaria and Romania, considered as "low-wage" countries, reached only 6% of the Austrian wage level in food processing in that year, Slovenia can be termed a "high-wage" country, reaching about 46%. In between, CEECs' wages hovered between 10% and 22% of the Austrian wage level (2,186 euro). Labour productivity (defined as gross output per employed person) in the food processing industry is also considerably below Austrian levels, with Bulgaria reaching just 25-40% of the Austrian level, Slovenia 66-74%.[10] In fact, the lowest levels were observed for Bulgaria and the Baltic States, whereas the other CEECs including Romania did relatively better. Overall, unit labour costs (ULCs), defined as labour costs per unit output, in food processing ranged between 15% and 22% of the Austrian level in Bulgaria, and between 56% and 63% in Slovenia, thus providing that industry with a quite substantial competitive edge concerning production costs. In Romania, ULCs were even lower, at only 10-14% of the Austrian level, whereas in Estonia and Latvia ULCs were particularly high, surpassing even the level of Slovenia in the case of Latvia (see table 4).

[9]The Czech Republic, Poland, Romania, Slovakia and Slovenia.

[10]Generally, cross-country comparisons of productivity are hampered by the conversion of national output data to a common currency. The use of current exchange rates is not appropriate for this purpose, especially for CEECs, due to their undervalued currencies and often strongly fluctuating exchange rates. Hence we may use purchasing power parities (PPPs) comparing prices for different "baskets" of goods. Thus, in table 4 we first use PPPs for the whole gross domestic product (PPP99) for GDP and then PPPs for gross fixed capital formation. The latter estimates for productivity are lower, because prices of investment goods are relatively higher (presumably due to imports) in the CEECs and seem to be closer to reality. See Hanzl-Weiss and Urban (2002), p. 14.

Table 4. Food products, beverages and tobacco: Wages, productivity and unit labour costs in 2001

	Monthly gross wages		Productivity		Unit labour costs[a]	
	in euro	*Austria = 100*	*Austria = 100*		*Austria = 100*	
			PPP99 for GDP	*PPP99 for fixed capital formation*	*PPP99 for GDP (lower range)*	*PPP99 for fixed capital formation (upper range)*
Bulgaria	121.3	5.5	37.8	25.2	14.7	22.0
Czech Rep.	392.6	18.0	75.9	55.0	23.7	32.7
Estonia[b]	306.0	14.0	37.5	22.9	37.3	61.1
Hungary	387.8	17.7	61.9	43.4	28.6	40.9
Latvia	273.7	12.5	30.2	19.2	41.5	65.3
Lithuania[b]	228.4	10.4	32.0	19.0	32.6	54.9
Poland	480.0	22.0	55.9	43.6	39.3	50.3
Romania	131.1	6.0	59.1	43.9	10.1	13.7
Slovakia	297.8	13.6	62.4	38.3	21.8	35.6
Slovenia	1003.8	45.9	73.9	65.6	56.0	63.1

Source: **wiiw** Industrial Database.

[a]Defined as wages in EUR divided by productivity (measured as output at constant prices 1999 converted with EUR-based purchasing power parities 1999 (PPPs) divided by employees); gross wages used for calculation.

[b]2000.

Table 5. Food products, beverages and tobacco: Average annual growth rates, 1995-2001 (percentage)

	Output	*Employment*	*Productivity*	*Productivity relative to total manuf.*[a]	*Wage rates (euro basis)*	*Unit Labour Costs (euro basis)*
Bulgaria	-3.3	-5.3	2.2	-1.3	7.8	5.5
Czech Rep.	1.3	-2.0	3.3	-4.4	10.8	7.2
Estonia[b]	-2.7	-5.9	3.4	-6.6	8.9	5.3
Hungary	0.9	-3.8	4.9	-7.6	6.3	1.3
Latvia	2.3	-0.6	3.0	-3.6	9.8	6.6
Lithuania[c]	-1.0	-1.2	0.2	-6.8	15.9	15.7
Poland	4.9	-0.5	5.4	-3.8	12.4	6.6
Romania	4.3	-6.4	11.5	3.9	5.0	-5.8
Slovakia	1.5	-1.9	3.5	-4.7	9.1	5.4
Slovenia	1.8	-0.7	2.5	-1.7	6.6	4.0

Source: **wiiw** Industrial Database.

[a]Productivity of food industry minus productivity of total manufacturing.

[b]1995-2000, wages and unit labour costs: 1996-2000.

[c]1995-2000.

Looking at development trends between 1995 and 2001, wages in the food processing sector rose throughout the region: annual average growth rates were highest in the Czech Republic (11%), Poland (12%) and Lithuania (16%), and lowest in Romania (5%). In all countries, productivity increased as well, but less than wages; thus, unit labour costs increased and cost competitiveness deteriorated. The Romanian food processing industry represents an exception to this pattern: it showed strong productivity growth accompanied by a sharp drop in employment, with declining unit labour costs and hence strong improvements in cost competitiveness.

Trade competitiveness and structure (in trade with the EU)

The EU is the dominant trading partner of the Central and East European countries today: after the collapse of the CMEA market, CEE trade became heavily oriented towards the EU markets.[11] However, in the food processing industry the share of trade with the EU is considerably smaller, owing to various factors, such as still existing trade restrictions on both sides (exports and imports) including also non-tariff-barriers, the importance of intra-regional CEE trade especially with neighbouring countries, also due to the domestic market orientation of foreign investors as compared to other sectors such as the automotive industry, etc. In 2000, the EU-15 accounted for only 20% to 49% of CEE food and beverages exports in the region.[12] On the import side, the share of imports coming from the EU ranged between 37% and 57% and was hence larger than the respective export shares. This might be the result of higher quality imports from the EU, better marketing including advertising and brand names and also better distribution networks.

Between 1995 and 2001, CEE food exports to the EU-15 increased by about 80% in current euro terms, reaching a volume of about 3.3 billion euro in 2001 (see table 6). Growth was significantly below that of overall manufacturing exports, which reached 160% in that period, due to strong export growth in other sectors such as transport equipment and electrical and optical equipment. CEE imports of food products increased as well (by 45%), but less than exports, and reached about 4.7 billion euro in 2001. Again, growth was less pronounced than in total manufacturing with 137%. Since 1995, the trade balance in food processing with the EU has traditionally been negative, but the deficit dropped to 1.3 billion euro in 2001 from a peak of 1.7 billion euro in 1998.

[11] In 2000, as much as 46% to 75% of manufacturing exports were going to the EU, and 59% to 71% of manufacturing imports were coming from the EU.

[12] The share of exports going to the EU was smallest in Slovakia and Slovenia (20% and 26% respectively), between 30% and 40% in most other countries, and largest in Hungary and Poland (45%) and Romania (49%).

Table 6. Food products, beverages and tobacco

	1995	1996	1997	1998	1999	2000	2001	2001/95 growth in %
				Exports to the EU-15, million euro				
Bulgaria	149	169	187	192	177	137	185	23.7
Czech Rep.	171	177	189	192	214	299	378	121.3
Estonia	22	33	49	48	52	67	82	268.7
Hungary	619	704	686	667	722	752	882	42.4
Latvia	21	20	28	30	35	36	56	158.5
Lithuania	62	68	77	78	78	119	167	170.9
Poland	685	703	820	857	945	1 079	1 318	92.5
Romania	57	60	68	60	69	83	109	89.2
Slovakia	30	37	56	51	44	48	81	168.7
Slovenia	54	65	66	73	78	70	80	47.8
CEEC-10	**1 872**	**2 036**	**2 225**	**2 249**	**2 414**	**2 691**	**3 338**	**78.3**
CEEC-10 total manuf.	**40 954**	**43 878**	**53 129**	**63 932**	**72 015**	**92 968**	**105 990**	**158.8**
				Imports from the EU-15, million euro				
Bulgaria	192	121	124	179	147	172	222	15.7
Czech Rep.	558	598	589	658	661	683	929	66.6
Estonia	158	203	250	247	189	202	257	62.6
Hungary	355	305	388	360	321	372	535	50.6
Latvia	172	186	180	197	152	162	237	37.7
Lithuania	145	187	264	259	200	162	228	57.6
Poland	953	900	1 119	1 217	1 048	1 048	1 322	38.6
Romania	260	266	202	311	174	200	339	30.2
Slovakia	151	155	180	191	168	181	258	70.9
Slovenia	289	286	300	303	315	303	349	20.6
CEEC-10	**3 233**	**3 207**	**3 596**	**3 922**	**3 375**	**3 485**	**4 675**	**44.6**
CEEC-10 total manuf.	**49 388**	**58 611**	**71 498**	**81 968**	**85 756**	**105 093**	**116 854**	**136.6**
				Trade balance with the EU-15, million euro				
Bulgaria	-43	48	63	13	30	-35	-37	
Czech Rep.	-387	-421	-400	-466	-447	-384	-551	
Estonia	-136	-170	-201	-199	-136	-134	-175	
Hungary	264	399	298	307	400	380	347	
Latvia	-151	-165	-152	-167	-117	-126	-181	
Lithuania	-83	-119	-187	-180	-123	-42	-61	
Poland	-269	-197	-300	-359	-103	31	-3	
Romania	-203	-206	-134	-251	-105	-116	-230	
Slovakia	-121	-118	-124	-140	-124	-133	-177	
Slovenia	-235	-221	-234	-229	-236	-233	-269	
CEEC-10	**-1 361**	**-1 171**	**-1 371**	**-1 673**	**-961**	**-794**	**-1 338**	
CEEC-10 total manuf.	**-8 434**	**-14 733**	**-18 369**	**-18 035**	**-13 742**	**-12 125**	**-10 864**	

Source: Eurostat COMEXT Database, **wiiw** calculations.

For individual countries, the main trends in food processing trade with the EU are:

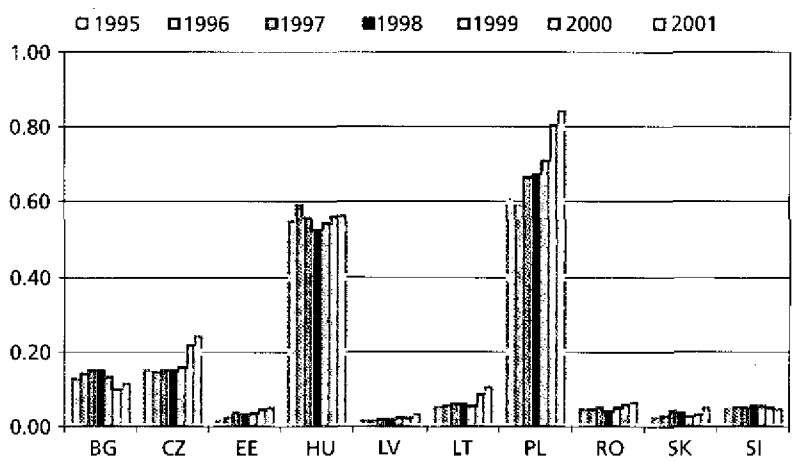
- Export growth was strongest in the case of the small exporting countries such as Estonia, Lithuania, Slovakia and Latvia; the only exception was the Czech Republic;
- Import growth was relatively more pronounced in the countries with strong export growth (except Latvia);
- All CEECs showed a sectoral trade deficit, except Hungary and Bulgaria in 1996-1999 and Poland in 2000. The deficit was highest and increasing for the Czech Republic, reaching 550 million euro in 2001, but mostly below 200 million euro in the other countries.

Overall, food processing trade between Central and Eastern Europe and the EU shows the following characteristics:

Little increase in market shares

On the EU market, CEEC-10 food processing exports to the EU had a market share of about 1.7% in 1995, which increased slightly to 2.1% in 2001 (all shares including intra- and extra-EU trade, see figure V). Compared to the EU market shares of total manufacturing (3.2% in 1995 and 5% in 2001), food processing shares were notably smaller, pointing to the industry's relatively minor role on the EU market and reflecting the various factors restricting trade mentioned above. In 2001, the most important food processing exporters to the EU were Poland and Hungary, providing 0.6% and 0.8% respectively of all EU food imports. Czech food exports reached about 0.2%, Bulgarian and Lithuanian about 0.1% each, all other countries had even smaller market shares.

Figure V. Food products, beverages and tobacco: Market shares in extra- and intra-EU-15 imports (percentage)



Source: Eurostat COMEXT Database, wiiw calculations.

Relatively spoken, between 1995 and 2001, market shares grew most dynamically in the case of Poland (from 0.6% to 0.8%), the increase for other countries was rather negligible.

Small share of food processing in total manufacturing trade

Within total manufacturing exports to the EU, the food processing industry plays a minor role today, mainly due to its domestic orientation as well as due to the importance of other export destinations. In 2001, export shares were smallest in Slovakia, Romania and Slovenia, accounting for only 1% of total manufacturing exports in these countries, and largest in Poland, Bulgaria and Lithuania with 5% to 7%. During 1995 to 2001, export shares declined significantly in Hungary and Bulgaria, to a lesser extent also in Poland, where the food and beverages sector held a traditionally dominant position. In Hungary, export structures shifted to electrical and optical equipment and transport equipment (accounting for 63% of total manufacturing exports in 2001), while in Bulgaria textiles and textile products became the major exporting sector besides basic metals and fabricated metal products. In the other CEECs, exports shares also declined, except in Estonia and Latvia.

Within total manufacturing imports from the EU, the food processing industry also accounts for a relatively small share, which is, however, larger than the respective export shares. In 2001, import shares ranged from 2.6% in Hungary to 6% in Bulgaria; only in the Baltic countries were they somewhat larger (Estonia: 8.8%, Latvia: 10.3%, Lithuania: 7.3%).[13] Between 1995 and 2001, import growth of food processing products was smaller than that of total manufacturing, thus shares declined in all countries.

Distinct export specialization patterns

At a more detailed 3-digit NACE level, in 2001, food processing exports of all CEECs consisted largely of meat and meat products (30%), fruit and vegetables (24%) and other food products (11%), but also of dairy products (9.5%) and beverages (8%). On the other hand, tobacco exports to the EU were practically non-existent, those of grain mill products, starches and starch products were very small (less than 1%, see table 7). However, very strong country variations and hence specialization patterns do exist in food processing exports of the region: Bulgaria, Hungary, Romania and Slovenia show a large share of meat and meat products exports (accounting for 57% and 53%, respectively, of total food processing exports of Hungary and Slovenia). Estonia has large shares in fish and fish products exports, as well as in dairy products exports; Latvia in dairy products, Lithuania in prepared animal feeds. Poland's exports are strongly concentrated on fruit and vegetables. In the Czech Republic and Slovakia, the export structure is less concentrated and has no strong export peaks (i.e. shares above 30%, see table 7).

[13] Northern as well as smaller economies usually cannot produce a lot of differentiated products and hence have more imports.

Table 7. Export structure of the food products, beverages and tobacco sector, 2001

	BG	CZ	EE	HU	LV	LT	PL	RO	SK	SI	CEEC-10	EU extra-EU imports	EU intra-EU imports
15.1 Production, processing and preserving of meat and meat products	31.4	16.9	7.0	56.8	12.6	8.5	20.5	34.5	11.9	52.5	30.2	14.6	17.4
15.2 Processing and preserving of fish and fish products	0.0	0.2	32.1	0.1	19.4	15.5	13.8	1.4	0.0	3.0	7.5	26.4	5.8
15.3 Processing and preserving of fruit and vegetables	22.9	6.5	2.5	18.9	3.8	8.0	39.8	25.2	2.8	3.2	24.2	11.8	8.6
15.4 Manufacture of vegetable and animal oils and fats	1.2	6.9	4.0	0.4	3.2	1.7	2.6	9.2	9.0	0.2	2.7	15.7	5.1
15.5 Manufacture of dairy products	2.1	12.9	48.2	4.6	50.6	26.3	6.2	4.5	25.0	7.1	9.5	3.1	14.5
15.6 Manufacture of grain mill products, starches and starch products	1.2	0.2	0.0	1.6	1.5	0.0	0.3	0.1	5.6	3.4	0.9	1.9	4.5
15.7 Manufacture of prepared animal feeds	8.7	1.1	0.5	5.5	0.1	35.6	2.8	0.5	7.1	7.0	5.3	3.8	4.5
15.8 Manufacture of other food products	7.8	26.3	3.7	6.0	6.2	4.1	12.6	4.0	13.1	11.0	11.1	13.0	20.8
15.9 Manufacture of beverages	24.7	29.0	2.0	6.1	2.6	0.2	1.4	20.0	22.3	12.6	8.4	9.0	13.1
16 Manufacture of tobacco products	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	3.0	0.0	0.1	0.6	5.8
DA Food products, beverages and tobacco	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
in euro million	**184.9**	**378.3**	**81.6**	**881.9**	**55.6**	**166.9**	**1318.4**	**108.7**	**81.4**	**80.1**	**3337.7**	**42119.1**	**113794.8**

Source: Eurostat COMEXT Database, **wiiw** calculations.

Table 8. Import structure of the food products, beverages and tobacco sector, 2001

	BG	CZ	EE	HU	LV	LT	PL	RO	SK	SI	CEEC-10
15.1 Production, processing and preserving of meat and meat products	17.1	8.6	12.0	19.6	8.2	12.7	7.6	34.3	17.2	10.2	12.8
15.2 Processing and preserving of fish and fish products	5.5	3.4	4.2	3.8	4.5	8.9	5.5	5.7	3.6	4.9	4.8
15.3 Processing and preserving of fruit and vegetables	6.9	5.6	4.4	6.7	3.4	3.5	5.5	3.9	4.4	8.2	5.5
15.4 Manufacture of vegetable and animal oils and fats	8.1	15.8	10.1	9.3	9.8	16.7	26.1	6.1	16.1	7.0	15.7
15.5 Manufacture of dairy products	4.5	3.4	1.9	4.0	1.6	2.2	2.2	2.6	2.1	3.0	2.8
15.6 Manufacture of grain mill products, starches and starch products	2.2	2.8	4.1	3.7	2.9	2.1	3.9	2.2	6.1	5.8	3.6
15.7 Manufacture of prepared animal feeds	4.5	8.4	5.3	12.3	7.0	7.5	6.0	3.9	13.3	6.1	7.5
15.8 Manufacture of other food products	31.3	34.1	34.6	32.3	33.8	37.0	36.7	27.8	29.3	37.3	34.2
15.9 Manufacture of beverages	9.0	10.4	19.2	5.6	19.5	8.0	5.8	6.2	6.5	8.9	8.7
16 Manufacture of tobacco products	10.8	7.5	4.1	2.5	9.3	1.6	0.7	7.4	1.4	8.5	4.5
DA Food products, beverages and tobacco	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
in euro million	**222.2**	**929.4**	**256.9**	**534.5**	**236.8**	**228.2**	**1321.9**	**338.5**	**257.9**	**348.8**	**4675.2**

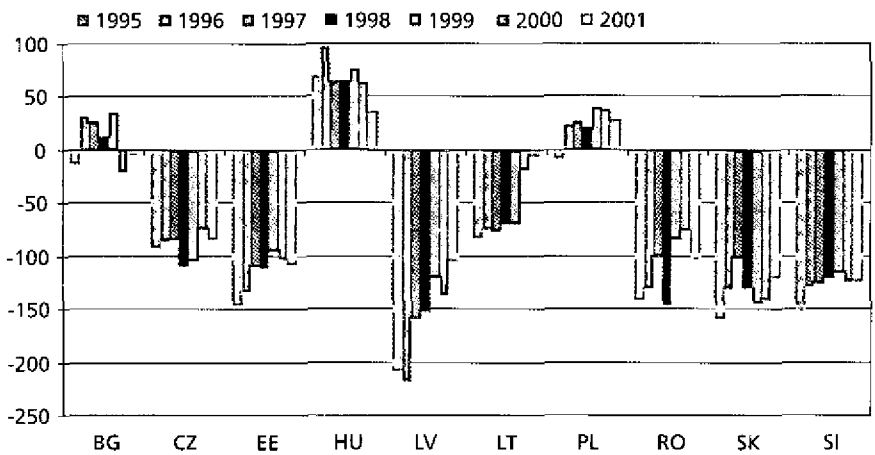
Source: Eurostat COMEXT Database, **wiiw** calculations.

On the import side, CEEC-10 food processing imports in 2001 comprised other food products (34%), vegetable and animal oils and fats (16%), meat and meat products (13%), and beverages (9%). Across the region, the import structure was quite uniform (see table 8).

Comparative advantage for Bulgaria, Hungary and Poland

"Revealed comparative advantages" (RCAs)[14] are frequently used as an indicator of trade competitiveness. The RCAs in figure VI show that only three countries had a comparative advantage in the food processing industry: Bulgaria (between 1996 and 1999), Hungary and Poland. In all other countries, the food processing industry showed a comparative disadvantage. However, between 1995 and 2001, most CEECs recorded substantial RCA improvements, in particular Latvia, Lithuania and Romania, pointing to an increase in trade competitiveness across the region. Only in Bulgaria and Hungary did RCA values decline during this period, reflecting a declining trade competitiveness there.

Figure VI. Food products, beverages and tobacco: Revealed comparative advantage in trade with the EU-15, 1995-2001[a]



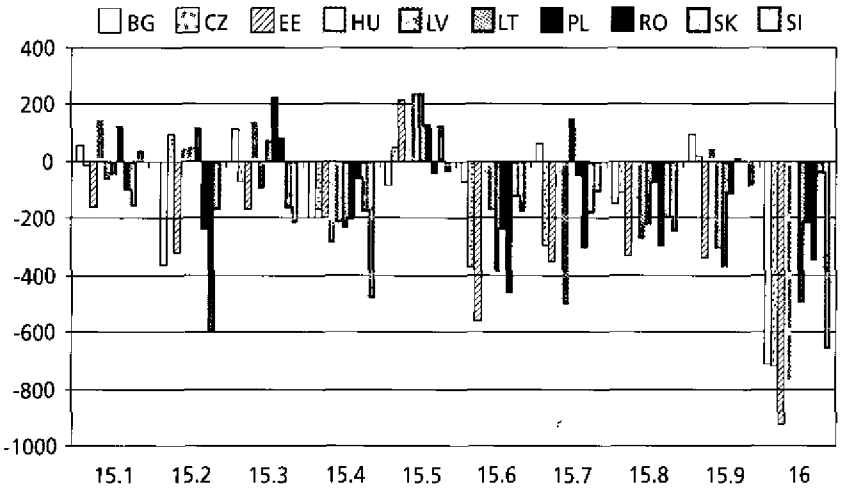
Source: Eurostat COMEXT Database, **wiiw** calculations.
[a]Defined as RCAi = ln (xi / mi) / (xtot / mtot) * 100.

[14]RCAs compare the relative share of exports x and imports m of a particular industry with the share of the country's total manufacturing exports x and imports m. We use here the following definition of revealed comparative advantage:
RCAi = ln (xi / mi) / (xtot / mtot) * 100.
A positive RCAi reveals a comparative advantage of industry i, a negative RCAi a comparative disadvantage.

Looking at the 3-digit NACE level as shown in figure VI, negative RCA values were due to a typically large comparative disadvantage in tobacco products in all countries (16), as well as smaller disadvantages in vegetable and animal oils and fats (15.4), grain mill products, starches and starch products (15.6) and other food products (15.8) in all countries. On the other hand, several positive exceptions did exist in the food processing industry too: a small comparative advantage was recorded in dairy products (15.5), by several countries; in meat and meat products (15.1, by Bulgaria, Hungary, Poland and Slovenia); in fish and fish products (15.2, typically by the Baltic countries and Poland); in fruit and vegetables (15.3, by Bulgaria, Hungary, Lithuania, Poland and Romania) and also in beverages (15.9, by Bulgaria, the Czech Republic, Hungary, Romania and Slovakia).

In the period 1995 to 2001, RCAs were improving generally, with the most successful branches in many countries being fish and fish products (15.2), dairy products (15.5), prepared animal feeds (15.7), other food products (15.8) as well as beverages (15.9), pointing to an improvement of trade competitiveness in these areas and hence to positive future prospects (see figure VII). Conversely, in many countries the following branches showed a deterioration in RCA values: meat and meat products (15.1), vegetable and animal oils and fats (15.4), grain mill products, starches and starch products (15.6) and tobacco products (16).

Figure VII. Food products, beverages and tobacco: Revealed comparative advantage in trade with the EU-15,[a] 2001

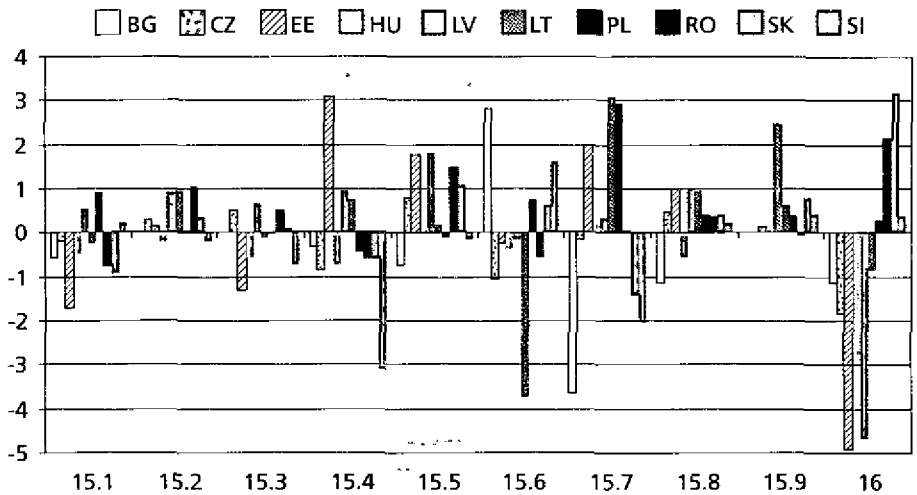


Source: Eurostat COMEXT Database, **wiiw** calculations.

Key: 15.1: Production, processing and preserving of meat and meat products;
15.2: Processing and preserving of fish and fish products;
15.3: Processing and preserving of fruit and vegetables;
15.4: Manufacture of vegetable and animal oils and fats;
5.5: Manufacture of dairy products;
15.6: Manufacture of grain mill products, starches and starch products;
15.7: Manufacture of prepared animal feeds;
15.8: Manufacture of other food products;
15.9: Manufacture of beverages;
16: Manufacture of tobacco products

[a]Defined as RCAi = ln (xi / mi) / (xtot / mtot) * 100.

Figure VIII. Food products, beverages and tobacco: RCA improvements in trade with the EU, average 2000-2001 over 1995-1996



Source: Eurostat COMEXT Database, **wiiw** calculations.

Key: 15.1: Production, processing and preserving of meat and meat products;
15.2: Processing and preserving of fish and fish products;
15.3: Processing and preserving of fruit and vegetables;
15.4: Manufacture of vegetable and animal oils and fats;
5.5: Manufacture of dairy products;
15.6: Manufacture of grain mill products, starches and starch products;
15.7: Manufacture of prepared animal feeds;
15.8: Manufacture of other food products;
15.9: Manufacture of beverages;
16: Manufacture of tobacco products

Foreign direct investment in food processing

The food processing industry, occupying an important position in the CEECs' economies, has been a prominent target of foreign direct investment, especially in the early years of transition. Compared to its production share, it attracted an over-proportionate share of inward FDI stock in many countries (except in Slovenia). In 2001, these shares amounted to 13% in the Czech Republic and Slovakia, 20-30% in Hungary, Estonia, Latvia and Poland, and even 40% in Lithuania (only 5% in Slovenia; no data are available for Bulgaria and Romania; see table 9). Over the years, however, these shares have slightly declined, with other sectors of the economy becoming more attractive (e.g. motor vehicles, electrical and optical equipment).

Foreign investors were mainly attracted by entering domestic markets, but also by other motives such as the circumvention of imports tariffs or building up world-wide networks. Export orientation did not play a decisive

role, except e.g. in the Czech beer branch. Foreign investors mostly preferred companies with advanced technology, a monopolistic position, relatively good organizational features and favourable location, e.g. in the production of vegetable oil, sugar, confectionery, distilling, beer and tobacco. The tobacco industry is usually foreign-owned, as only big international companies can cope with the brand names and promotion costs of this industry. They often hold monopoly positions, with high profit rates. Main foreign investors in the region include Coca-Cola, Pepsi-Cola, Danone, Nestle, Unilever and Philip Morris. Overall, foreign investors have had a strong impact on the restructuring and modernization process of the food processing industry, on the change in the range and quality of food products, on marketing and packaging, and on technological standards.[15]

Table 9. Food products, beverages and tobacco: Selected indicators on foreign direct investment (FDI)

	Inward FDI stock in euro million		Inward FDI stock in % of total manuf.		Current production in % of total manuf.
	1998	2001	1998	2001	2001
Czech Rep.	874.1	1 120.1[a]	15.6	12.6[a]	14.1[a]
Estonia	140.8	137.8[a]	27.4	22.5[a]	21.5[a]
Hungary	902.5	1 052.2	25.4	21.4	16.2
Latvia	60.5	116.2	34.5	27.5	30.1
Lithuania	162.8	289.5[a]	36.3	40.1[a]	23.6[a]
Poland	3 823.2	6 247.2	28.0	25.2	24.9
Slovakia	213.7	324.3	24.0	13.8	13.0
Slovenia	91.1	67.9	7.3	5.2	13.7

Source: **wiiw** FDI Database, national statistics.
[a]2000.

Food processing: conclusions

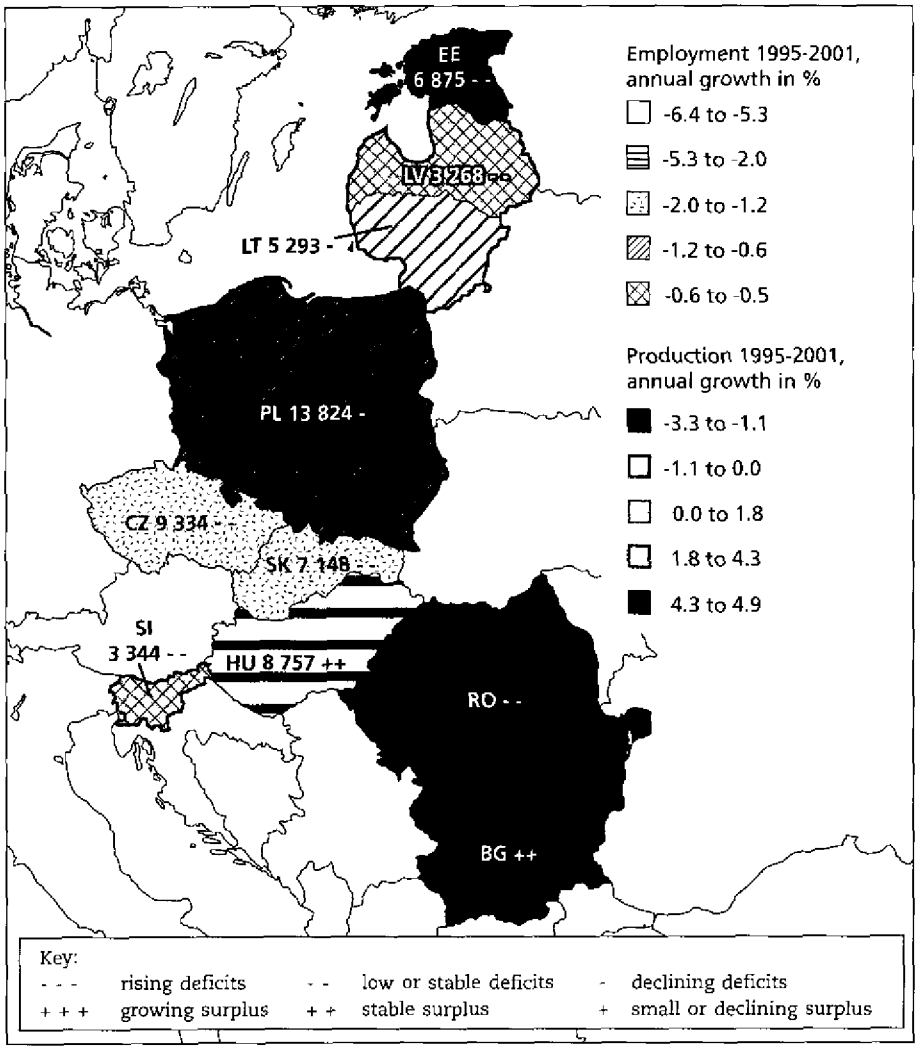
The key economic indicators for the food processing industry in the region are summarized in figure IX. Today, the food processing industry holds an important position in the CEE economies in terms of production, employment and foreign direct investment, but not in terms of exports to the EU. In the region, it has an above average position in Bulgaria, Hungary, Poland, Romania and the Baltic states. As concerns the future accession to the EU, the food processing industry seems to be better positioned in Bulgaria, Hungary and Poland, thanks to its comparative advantage in trade with the EU-15. This in turn is based largely on a comparative advantage in the following branches: fruit and vegetables in Bulgaria, meat and meat products and fruit and vegetables in Hungary, and meat and meat products, fish and

[15]Kiss (1997), p.12.

fish products, fruit and vegetables and dairy products in Poland. Between 1995 and 2001, the food processing industry generally showed a relatively weak performance: production, productivity as well as exports to the EU grew only slowly, much less than manufacturing on average. There were only two exceptions: Poland, which showed higher growth of production and considerable gains on the EU market, and Romania, which did well on the domestic market and recorded strong productivity growth.

Figure XI. Food, beverages and tobacco (DA) Regional development clusters, FDI per employee in euro and trade competitiveness

	BG	CZ	EE	HU	LV	LT	PL	RO	SK	SI
Share in output in %, 2001	22.1	14.0	21.5	16.2	30.1	23.6	24.9	22.1	13.0	13.7
Share in employment in %, 1995-2001	17.6	11.2	17.2	16.0	24.2	23.3	19.2	10.5	11.8	8.9
Productivity changes in %, 1995-2001	2.2	3.3	3.4	4.9	3.0	0.2	5.4	11.5	3.5	2.5
ULC, change in %, 1995-2001	5.5	7.2	5.3	1.3	6.6	15.7	6.6	-5.8	5.4	4.0
EU-share in total exports in%, 2000	38.8	33.6	31.5	45.4	34.5	34.7	44.5	49.1	19.6	25.7
Share in total manufacturing exports to the EU in %, 2001	5.6	1.6	3.0	3.7	3.6	6.7	5.3	1.2	1.0	1.3
RCA change, 1995-2001	-0.22	0.10	0.34	-0.33	0.92	0.65	0.26	0.47	0.14	0.16
Export price gap in %, av. 2000/2001	-5.6	-20.1	-4.8	4.5	-8.6	9.4	-3.3	6.9	-18.5	4.4
Price gap, change 1995-2001	-3.5	-1.8	-1.2	2.0	-2.8	17.9	2.4	15.6	-17.4	8.0
Market share, change 1995-2001	-0.01	0.09	0.03	0.01	0.02	0.05	0.23	0.02	0.03	0.00



Accession to the EU may have effects on the supply side of the food processing industry, on production itself, and on the demand side (export and domestic markets).

- Improvements in the agricultural sector in the wake of EU accession (efficiency, quality) will help the food processing industry to improve as well.
- Rising input prices of agricultural raw materials, unless compensated by EU payments, will increase costs in the food processing industry and hence reduce cost competitiveness.
- Increasing wages will also decrease cost competitiveness unless they are accompanied by growing productivity.

- The implementation of the acquis, ensuring health safety, quality of food and the observance of other requirements such as animal welfare and environmental protection, will put high pressure on domestic enterprises, many of which will have to close down.
- Foreign direct investment inflow into the CEECs will continue and may even intensify.
- The opening-up of the EU internal market will probably bring about better export opportunities—but only for companies able to meet EU standards.
- The opening-up of the domestic market will bring about stronger import competition from EU products, which are backed by better marketing and large sales promotion budgets.
- The EU common external tariff on food products is currently lower than the tariffs applied in several CEECs; thus, in these countries imports from non-EU countries will increase. However, the requirement to meet EU standards will put a brake on these imports.
- The long-term rise in income will benefit the food processing industry, although the income elasticity for many food products is less than one; in addition, specific areas will be favoured as the domestic food consumption structure changes (luxury goods).

Accession to the EU will bring about new opportunities for the food industry in the new member countries:

- There will be chances for more growth in the sphere of high income-elasticity products, a fact that should attract further foreign direct investment.
- More emphasis can be put on the branding of products. In fact, old brand names from the communist or pre-communist period experience a revival today, and domestic enterprises as well as foreign direct investment companies can profit from that.
- In the past years of transition, many farms could not afford purchasing large amounts of agro-chemicals. This fact represents a good starting condition for organic farming and the processing of its output. As this branch of agriculture and food processing is relatively labour-intensive, the low wages in the CEECs are an additional advantage.
- The emergence of clusters is vital for the further development of the food processing industry. Clusters generally have a positive influence on innovation, competitiveness, skill formation and information as well as on further concentration and growth dynamics. In the CEECs, cluster creation is still in its initial stage.

3 Consequences for the agro-food sector as a whole

In the Copenhagen agreement, the chapter related to agriculture reflects the Commission's interest in freezing agricultural production in volume terms in the new EU member States, despite the fact that except for Hungary, all of them are already net importers of agro-food. Currently, living standards in the candidate countries are significantly lower than those in the EU-15. However, as the catching-up process moves ahead and GDP per capita rises, the demand for higher quality foodstuffs will also increase. Today, despite a slight drop the EU-15 as a whole is producing agro-food surpluses; it can only export these surpluses by resorting to massive export subsidies. Given the CAP rules on common agro-food markets within the club, the agro-food surpluses from the EU-15 States will be "delivered" to the "new" EU States.

In the long-run, however, we can expect some differentiation in the structure of the agro-food trade balance. As mentioned above, the CEECs have run up major deficits, at least where trade in processed food is concerned, no matter that they are net exporters of agricultural raw materials. As FDI flows into the food processing sector in the new member states, the output of foodstuffs with high value-added will increase and a larger share of the rising demand for higher quality food will thus be covered gradually by domestic supplies. At the same time, domestic demand for agricultural raw materials driven by foreign-owned companies will expand. As a result, over the long term total agro-food deficits may well drop in the new member States.

Table 10. Accession countries: Trade of agro products and processed food with EU-15

CEEC-10		Exports in percentage of imports						
	NACE rev.1	1995	1996	1997	1998	1999	2000	2001
Growing of crops; market gardening; horticulture	1.1	68.6	44.8	44.1	55.0	69.5	52.9	56.2
Farming of animals	1.2	292.7	291.1	311.2	269.0	330.7	258.8	261.3
Forestry, logging and related services activities	2.0	1 478.3	2 022.7	1 968.0	1 493.7	1 424.1	1 198.5	1 034.7
Fishing, operation of fish hatcheries and fish farms	5	251.9	282.3	297.7	189.5	227.5	165.1	159.6
Agro-total		**136.9**	**93.0**	**106.3**	**119.3**	**141.8**	**111.0**	**107.5**
Meat products	15.1	144.0	172.3	150.6	128.7	209.3	154.9	168.7
Fish and fish products	15.2	93.2	70.8	70.2	83.2	134.9	125.4	111.2
Fruits and vegetables	15.3	250.4	256.9	234.4	213.2	302.1	308.1	314.6
Vegetable and animal oils and fats	15.4	15.6	23.2	14.4	10.0	13.8	14.4	12.5
Dairy products; ice cream	15.5	74.2	103.6	106.6	88.3	98.5	107.5	245.1
Grain mill products and starches	15.6	12.9	11.8	7.8	9.0	14.8	12.9	17.2
Prepared animal feeds	15.7	16.4	29.2	33.0	29.7	34.1	127.2	50.5
Other food products	15.8	15.0	18.0	18.8	19.2	19.3	24.8	23.2
Beverages	15.9	55.0	58.4	64.8	68.8	73.0	75.8	69.0
Tobacco products	16	4.2	0.9	2.7	2.4	1.1	2.5	1.9
DA-Food—total		**57.9**	**63.5**	**61.9**	**57.3**	**71.5**	**77.2**	**71.4**
Agro total plus food total		**77.8**	**72.8**	**74.3**	**73.2**	**91.4**	**88.2**	**81.8**
TOTAL		**85.8**	**76.5**	**75.9**	**79.6**	**85.6**	**89.4**	**92.0**

Source: Eurostat, own calculations.

4 Foresight survey requirements

In the context of EU enlargement, the conditions for agriculture and food processing will change dramatically. Foresight survey can help farms and companies to be prepared to act in an adequate way, and it can also contribute to the shaping of an adequate business environment both for agriculture and food processing in the future.

In the field of agriculture as well as food processing, foresight survey should focus on likely scenarios of structural change, taking into account possible outcomes of the change in the trade regime in the wake of EU accession, as well as possible outcomes of a reform of the Common Agricultural Policy and the WTO negotiations. In this context, efforts should be aimed at identifying those subsectors and products in agriculture and food processing in which the accession countries could acquire a comparative advantage, or strengthen an already existing one. It would be essential to identify the support that legislation and state administration could lend this process.

The following catalogue of topics gives an idea of the fields of expertise that should be covered in a foresight survey.

Agriculture and the impact of EU accession

- Likely scenarios for structural change in CEE agriculture, taking into account aspects such as land ownership, regional specifics, firm size, input/output prices; exchange rate effects, productivity (labour/land ratios), product structure, exports and production by product groups, quality upgrading in domestic markets and in exports, changes in demand structure linked to vertical integration with the food processing sector, international production networking;
- Employment/unemployment/underemployment;
- Evolution of input-output structures; forward-backward linkages;
- Acquis in agriculture, CAP effects plus reform scenarios;
- WTO Round effects;
- Analysis of factors that attract FDI, effects of FDI flows; ownership changes;

- Interaction tourism—agriculture;
- Interaction agriculture—environment;
- Forward integration with food processing.

Food processing and the impact of EU accession

- Domestic consumption, production and imports;
- Common EU tariff regime: likely impact on trade flows within the enlarged EU and with external trading partners (trade diversion/trade creation) in the context of a trade model;
- Comparison with a high-income market such as Austria and a high-efficiency producer such as the Netherlands;
- Scenarios for relative specialization by detailed product categories within the enlarged Europe; including scope for trade among the new members, as well as future trade with non-EU partners;
- Analysis of the position of CEE producers in the quality spectrum of trade;
- Scenarios depending on the outcomes of WTO negotiations and CAP reform;
- Endangered segments of firms and firms with potential: analysis by size, by ownership, by regional location, by links with international firms;
- Market segmentation: organic, GM products, non-GM, non-organic products;
- Regional markets/regional producers; regional specialization;
- The impact of FIEs and segmentation phenomena: FIEs/DCs; spillovers or no spillovers.

Research-based policy recommendations

- Foreign direct investment-related governmental policy;
- Policies vis-à-vis endangered firm segments;
- Policies on technology transfer and technology and skill upgrading;
- Regional policies;
- Firm support packages: information support on EU programmes, pooling resources for export promotion, export financing, marketing, training;

It is important to find sound solutions on the enterprise level, in the representation of enterprises on the branch level, on the EU and international level, in the field of legislation and administration and from a macroeconomic point of view. Results of a foresight survey would be instrumental to taking decisions that could shape a better future.

Annex. Tables

Table A1. Main indicators 2001[a]

	Bulgaria	Czech Rep.	Hungary	Estonia	Latvia	Lithuania	Poland	Romania	Slovakia	Slovenia
Total territory, mn hectare	11.099	7.887	9.303	4.523	6.459	6.530	31.268	23.839	4.904	2.026
Population, annual average										
Total, mn persons	8.0	10.3	10.2	1.4	2.4	3.5	38.6	22.4	5.4	2.0
Employment in agriculture										
mn persons	0.8	0.2	0.2	0.04	0.2	0.3	3.9	3.6	0.1	0.04[b]
in % of total employment	26.3	3.9	6.5	6.7	14.7	17.7	25.6	41.4	6.7	5.2
Used agricultural land (UAL)										
Mn hectare	6.252	4.280	5.853	0.890	2.480	3.370	18.413	14.731	2.442	0.486
% of total	56.3	54.3	62.9	19.7	38.4	51.6	58.9	61.8	49.8	24.0
Hectare per person employed in agriculture	0.778	0.416	0.574	0.653	1.052	0.966	0.477	0.657	0.454	0.244
Gross domestic product (GDP)										
euro billion at current exchange rates	13.6	63.0	58.0	6.2	8.4	13.4	196.9	44.3	22.3	21.0
Per capita (euro at current exchange rates)	1 884	6 120	5 690	4 465	3 572	3 836	5 096	1 979	4 122	10 564
pro capita (euro at purchasing power parities)	5 980	13 710	11 760	9 330	7 040	7 230	9 110	6 410	11 040	16 440
Average share of food purchases in total household income, in %	**44.9**	**21.5**	**29.5**	**35.1**	**36.5**	**35.0**	**31.2**	**53.4b**	**23.5**	**17.7**

Source: **wiiw** Database based on national statistics and WIFO Database.

[a]Preliminary estimate.

[b]Including beverages and tobacco.

Table A2. Accession countries: Trade of agro products and processed food with EU-15

CEEC-10		Imports from the EU, thousand euro						
	NACE rev.1	1995	1996	1997	1998	1999	2000	2001
Growing of crops; market gardening; horticulture	1.1	918,438	1,315,972	1,237,456	1,163,451	1,159,131	1,463,044	1,636,402
Farming of animals	1.2	118,333	112,807	117,530	121,257	97,461	130,196	156,236
Forestry, logging and related services activities	2.0	31,137	19,564	26,742	39,828	49,415	58,887	62,952
Fishing, operation of fish hatcheries and fish farms	5	21,463	17,975	16,222	26,505	23,912	30,380	31,525
Agro-total		**1,089,371**	**1,466,318**	**1,397,950**	**1,351,041**	**1,329,919**	**1,682,507**	**1,887,115**
Meat products	15.1	460,773	418,290	503,232	563,238	366,487	575,021	598,588
Fish and fish products	15.2	151,151	171,016	177,548	205,049	157,058	178,571	224,910
Fruits and vegetables	15.3	198,872	194,046	243,833	275,479	214,126	227,987	256,807
Vegetable and animal oils and fats	15.4	399,986	358,506	525,552	603,841	491,728	560,537	733,646
Dairy products; ice cream	15.5	150,317	143,489	164,324	174,421	166,671	160,552	129,573
Grain mill products and starches	15.6	93,384	111,472	134,364	129,732	124,130	145,166	167,959
Prepared animal feeds	15.7	144,944	139,806	188,048	246,117	216,225	60,512	349,992
Other food products	15.8	1,175,513	1,165,913	1,191,990	1,239,250	1,108,623	978,267	1,596,829
Beverages	15.9	322,481	340,779	339,691	326,886	339,744	364,680	406,317
Tobacco products	16	135,744	163,272	127,621	157,888	189,894	233,796	210,611
DA-Food-total		**3,233,165**	**3,206,589**	**3,596,203**	**3,921,901**	**3,374,686**	**3,485,089**	**4,675,232**
Agro total plus food total		**4,322,536**	**4,672,907**	**4,994,153**	**5,272,942**	**4,704,605**	**5,167,596**	**6,562,347**
TOTAL		**51,020,106**	**60,770,963**	**73,613,754**	**83,949,940**	**87,690,890**	**107,519,435**	**119,436,129**

Source: Eurostat.

Table A3. Accession countries: Trade of agro products and processed food with EU-15

CEEC-10 — **Exports in the EU, thousand euro**

	NACE rev.1	1995	1996	1997	1998	1999	2000	2001
Growing of crops; market gardening; horticulture	1.1	630,295	589,498	546,209	640,138	805,900	774,227	919,069
Farming of animals	1.2	346,396	328,360	365,711	326,127	322,327	336,893	408,248
Forestry, logging and related services activities	2.0	460,297	395,719	526,274	594,908	703,721	705,741	651,365
Fishing, operation of fish hatcheries and fish farms	5	54,056	50,749	48,293	50,231	54,402	50,143	50,299
Agro-total		**1,491,044**	**1,364,326**	**1,486,487**	**1,611,404**	**1,886,350**	**1,867,004**	**2,028,981**
Meat products	15.1	663,701	720,651	758,071	725,120	766,999	890,879	1,009,634
Fish and fish products	15.2	140,889	121,004	124,670	170,537	211,927	223,917	250,128
Fruits and vegetables	15.3	497,973	498,450	571,424	587,235	646,920	702,429	807,858
Vegetable and animal oils and fats	15.4	62,416	83,053	75,592	60,108	68,095	80,808	91,535
Dairy products; ice cream	15.5	111,488	148,595	175,190	153,994	164,163	172,628	317,640
Grain mill products and starches	15.6	12,067	13,125	10,427	11,654	18,342	18,731	28,928
Prepared animal feeds	15.7	23,769	40,852	61,971	73,090	73,743	76,969	176,916
Other food products	15.8	176,205	209,302	224,265	238,452	213,710	242,544	370,647
Beverages	15.9	177,500	199,178	220,160	225,041	248,181	276,272	280,444
Tobacco products	16	5,737	1,432	3,508	3,726	2,054	5,794	3,954
DA-Food-total		**1,871,745**	**2,035,642**	**2,225,278**	**2,248,957**	**2,414,134**	**2,690,971**	**3,337,684**
Agro total plus food total		**3,362,789**	**3,399,968**	**3,711,765**	**3,860,361**	**4,300,484**	**4,557,975**	**5,366,665**
TOTAL		**43,779,281**	**46,501,995**	**55,891,948**	**66,783,056**	**75,090,341**	**96,126,112**	**109,901,017**

Source: Eurostat.

Table A4. Accession countries: Trade of agro products and processed food with EU-15

CEEC-10		Shares in imports total							Shares in exports total						
	NACE rev.1	1995	1996	1997	1998	1999	2000	2001	1995	1996	1997	1998	1999	2000	2001
Growing of crops; market gardening; horticulture	1.1	1.8	2.2	1.7	1.4	1.3	1.4	1.4	1.4	1.3	1.0	1.0	1.1	0.8	0.8
Farming of animals	1.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.8	0.7	0.7	0.5	0.4	0.4	0.4
Forestry, logging and related services activities	2.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	1.1	0.9	0.9	0.9	0.9	0.7	0.6
Fishing, operation of fish hatcheries and fish farms	5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Agro-total		**2.1**	**2.4**	**1.9**	**1.6**	**1.5**	**1.6**	**1.6**	**3.4**	**2.9**	**2.7**	**2.4**	**2.5**	**1.9**	**1.8**
Meat products	15.1	0.9	0.7	0.7	0.7	0.4	0.5	0.5	1.5	1.5	1.4	1.1	1.0	0.9	0.9
Fish and fish products	15.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.2
Fruits and vegetables	15.3	0.4	0.3	0.3	0.3	0.2	0.2	0.2	1.1	1.1	1.0	0.9	0.9	0.7	0.7
Vegetable and animal oils and fats	15.4	0.8	0.6	0.7	0.7	0.6	0.5	0.6	0.1	0.2	0.1	0.1	0.1	0.1	0.1
Dairy products; ice cream	15.5	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.3	0.3	0.3	0.2	0.2	0.2	0.3
Grain mill products and starches	15.6	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prepared animal feeds	15.7	0.3	0.2	0.3	0.3	0.2	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Other food products	15.8	2.3	1.9	1.6	1.5	1.3	0.9	1.3	0.4	0.5	0.4	0.4	0.3	0.3	0.3
Beverages	15.9	0.6	0.6	0.5	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3
Tobacco products	16	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Food-total		**6.3**	**5.3**	**4.9**	**4.7**	**3.8**	**3.2**	**3.9**	**4.3**	**4.4**	**4.0**	**3.4**	**3.2**	**2.8**	**3.0**
Agro total plus food total		**8.5**	**7.7**	**6.8**	**6.3**	**5.4**	**4.8**	**5.5**	**7.7**	**7.3**	**6.6**	**5.8**	**5.7**	**4.7**	**4.9**
TOTAL		**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: Eurostat, own calculations.

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Printed in Austria
V.03-89194–February 2004–500

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