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The Transition of the Wine Industry, Policy, and Trade in Eastern Europe and the former Soviet Union

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Abstract

In the transition economies of central and eastern Europe and the former Soviet Union, economic and institutional reforms had important impacts on wine production, consumption, prices, and policies. The paper discusses the transition changes in wine consumption and production, and how reforms have affected them. It analyzes the restructuring of the production system and the wine chain and the impacts of the changes on wine trade, and discusses the policy changes and the expected effects of integration of the central European countries into the EU, the so-called “Eastern EU enlargement”.

The Transition of the Wine Industry, Policy, and Trade in Eastern Europe and the former Soviet Union

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Introduction

In the transition economies of central and eastern Europe and the former Soviet Union, economic and institutional reforms had important impacts on wine production, consumption, prices, and policies. This paper analyzes the changes in grape and wine production, consumption, and trade, as well as changes in the policies and the industry structure, and discusses how various factors have affected the market and trade situation.

The transition countries account for a significant share of world wine markets. The ten Central and Eastern European Countries (CEEC-10) who have signed association agreements with the European Union (EU), several of whom are expected to join the EU in the next decade, currently produce somewhat more than 1.3 million tons of wine, 4.6 % of total world wine production (see table 1). CEEC wine production is currently about 25 percent less than the average level for 1984-1988 (see figure 1). However, most of this decline occurred already before 1990, since production in 1999 was slightly higher than in 1989.

The two other wine producing regions in Eastern Europe are the Balkan Non-Associated Countries (BNAC-5)¹, four of which have emerged after the break down of the SR Yugoslavia, and some, mostly southern, republics of the Former Soviet Union (FSU). Four important FSU states (FSU-4), i.e. Russia, Ukraine, Moldova, and Uzbekistan produced around 593,000 tons of wine in 1999, i.e. 2.1 % of world wine production in volume (table 1). However, this is much less than their pre-transition levels: in 1992 they still produced over 1,121,000 tons of wine, i.e. 3,9% of the world's total in volume.

These three transition wine regions taken together, produced in 1999 9.3% of world wine output, more than the United States (7.3%) and close to the output of Latin America & Caribbean's wine-producing countries (9.4%).

At the country level, the most important wine producers are Romania with 650,000 tons in 1999, Hungary (333,800 tons), Russia (214,000 tons), Croatia (209,400 tons) and Bulgaria (139,4 tons). In most transition countries, wine production was quite volatile in the 1990s due to a number of factors discussed further in the paper. However, the output fall in Bulgaria and the FSU

¹ Albania, Bosnia and Herzegovina, Croatia, Macedonia, Serbia & Monte Negro.

was stronger than in the other transition economies, and also continued throughout the 1990s. In these countries, wine production has declined by around 50% over the past decade (see figures 1, 2 and 3).

The wine sector (including the grape-producers at farm level) was protected under the Communist system. While government protection fell during liberalization, government interventions in some of East European countries increased again in the second half of the 1990s in the form of different measures.

The paper is organized as follows: it first discusses the transition changes in consumption and production, and how reforms have affected them. Then we analyze the restructuring of the production system and the wine chain and the impacts of the changes on wine trade. In the last sections we discuss policy changes and the expected effects of integration of the central European countries into the EU, the so-called “Eastern EU enlargement”.

Consumption

Per capita, wine consumption varies from over 40 liters in Slovenia, around 30 liters in Hungary and Romania to less than 10 liters in Bulgaria, Poland, Russia and Ukraine (tables 5 and 6).

Important changes in wine consumption have taken place in transition countries, although the changes vary among countries and over time. Consumption fell significantly in most countries initially. Consumption fell sharply in some of the largest wine producing countries after the start of the reforms with declining real incomes (Bulgaria, Ukraine and Russia) (figure 4, tables 5 and 6). These are also the countries where GDP fell most sharply, and continued to fall most of the 1988-1998 period.

The data for Hungary show a remarkable increase in wine consumption in Hungary during the 1990s. Yet Hungarian official data also show declining sales of wine : from 1,799.5 million US\$ in 1994 to 1,165.5 million US\$ in 1998. These apparently conflicting data may be explained with increased amounts of wine being distilled outside official distillers, yet sold on the retail market. This may also be the case in Romania, where data show a decline in sales of wine by 23.7% in volume terms and by 41.7% in value terms for the period 1995-1999, in spite of a stable consumption. This may also reflect increased self-consumption as well as consumers' switch to low quality wines due to low household incomes.

Similarly, in Bulgaria, the share of home-produced wine that is not captured by the official statistics is estimated at around 150-200 million liters per year, and thus, approaches the level of

the official wine industry's output². The importance of homemade wine further increased during transition due to increased number of subsistence households, land fragmentation, decline in real incomes as well as the slowly implemented economic reforms.

Consumption and production of wine in Russia and some of the FSU countries is not as important as consumption and production of strong alcohol (tables 5 and 12). Some estimates show that the decrease in consumption of wine and champagne during transition is substituted of an increase in consumption of strong alcohol. A specific factor influenced consumption of wine and spirits in the FSU was the anti-alcohol campaign of the 1985-87 period and the subsequent liberalization following major political and socio-economic changes. Alcohol consumption in Russia increased after 1993 when reform had a dramatic impact on prices. For example, the real price of alcohol declined by a factor 3 in 1994 when average inflation (CPI) increased over 1200%, but alcohol beverages "only" 421%. This caused a situation where basic food products were several times more expensive than a bottle of wine or vodka.

On average, data show that consumption of wine per capita in Europe's transition economies has decreased with the start of the reforms, but later recovered to the pre-transition level (table 3). However, the previous suggests that these aggregate numbers hide much variation and quality changes. Furthermore, wine's share of total alcohol consumption continued to decline (table 3), as consumption of wine is substituted by beer and spirits (tables 3, 4 and 7). Combined with the decline in incomes, imposed excise duties further increase the price of wines and shift consumer's preferences towards beer, especially in countries with low purchase power of their population (Romania and Bulgaria).

The strong income elasticity of wine consumption even in transition countries with a tradition of wine consumption, such as Bulgaria, can be seen from the data in table 8, which show that per capita wine consumption in the highest income group is more than twice the average, and more than seven times than in the lowest group - although also these numbers should be interpreted with care given the large amount of home wine production in Bulgaria.

Changes in Production and Yields

Grape and wine production, as the production of other products, has been severely affected by the political and economic reforms over the past ten years. However it is clear from figure 1

² Homemaking of wine is popular not only in Bulgaria, but also in the rest of the Balkan countries as well in Ukraine, Moldova and Hungary.

that the wine output pattern has gone different roads in the three analyzed regions in the second half of the 1990s. Wine output declined around 24 % in CEEC-10 and around 25% in BNAC-5 between 1984-88 and 1993. Since then it stabilized more or less in CEEC-10, while output was much less stable in BNAC-5. In contrast, wine production continued to fall in the FSU, to 43% of the pre-reform level by 1998.

Wine and grape output development patterns, together with the development patterns of vineyards for the FSU and BNAC-5, show how reforms affected differently wine sector development in these two regions. Figures 1, 5, 8, 11 and 12 illustrate the contrasting processes.

Figures 5-11 present data on the evolution of the vineyards and on grape yields. These data also reveal the different patterns in CEECs versus Russia and other FSU countries. The area remains fairly stable on average in CEECs, although this average number hides important changes: Romanian vineyard area increased while that in Bulgaria declined. The latter is strongly caused by negative price developments in Bulgaria (see figure 13). The increase in Romanian vinearea was mostly the result of an increase in low quality hybrids, which in 1997 represented 44.7% of total vinearea, almost 20% higher than in 1989 (Rusu, 2000). Vineyards declined sharply (by 27%) between 1989 and 1993 in the BNAC-5, and declined only slightly afterwards. The latter resulted from the political changes in Yugoslavia and especially from the dramatic reforms in Albania in 1990-1992. The area of vineyards in Albania declined by more than 70% between 1989 and 1992 as a complete collapse of the collective farming system caused a radical decollectivization and fragmentation of Albanian agriculture (Cungu and Swinnen, 1999). The only region where areas continued to decline after 1995 was in the FSU.

More than in any other development, the impact of the reforms can be seen from the evolution of grape yields (see figures 9-11). While yields are affected by climate etc., the moving averages of the yields in figures 9-11 indicate diverging patterns. In those countries where economic and institutional reforms have been implemented thoroughly and effectively, grape yields are increasing, or at least recovering since the mid 1990s, while in those countries where this is not the case, yields are stabilizing or declining.

This is not only the case for the CEEC-FSU patterns, but also within the CEECs, where Romania and Bulgaria are falling behind e.g. Hungary and Slovenia, as yields and growth after 1996 in the former countries suffer from delayed reform effects and structural constraints.

Grape yields in Eastern Europe in 1999 averaged 5000 kg/ha, which is considerably below the EU-15 average of 7,800 kg/ha. While the average yield of 3,237 kg/ha in Bulgaria and,

importantly, Romania with 3,484 kg/ha is lagging considerably behind the EU level. Croatia and, especially, Hungary approached average EU-15 yields in 1998 (table 11).

We can now also see different causes behind the output developments. In contrast to the CEEC pattern, the dramatic decline in wine output in the FSU was initially mostly due to a 53% decline in grape yields by 1994 (figures 11 and 12). Only after 1993 the area of vineyards started declining rapidly in the FSU countries (figure 5). However, by 1999 the decline in vineyards had surpassed 25% of the pre-transition level and vine area in the FSU became less than in BNAC-5. In 1994-1996 a slight stabilization of grape yields in some FSU countries, like Georgia and in Russia, can be observed (figure 10) followed again by a decrease, with the yield levels in 1999 below 3400 kg/ha.

Privatization and Restructuring of the Grape Producing Farms and the Wine Industry

Farm restructuring

Grape production took place on large scale co-operative and state farms under the Communist regime, with the exception of Hungary where about 68% of the vineyards were private property at the beginning of the reform and the republics of former Yugoslavia where individual farms dominated under the communist regime (table 9). With privatization and land reform, a major restructuring of the grape production system has occurred in several transition countries.

In many transition countries the majority of grape production currently occurs at much smaller family farms. For example, in Bulgaria where co-operative farms dominated under Communism, most grape production now occurs on (very) small-scale farms. The liquidation of the former communist co-operatives and the land restitution process disrupted the cultivation of vineyards and created a large number of absentee landowners and extreme land fragmentation. The former large blocks of vineyards continue to exist in most of the cases, but the property rights are spread among many landowners. Many of the new owners do not cultivate the land in a proper way and do not replant and replace the old and depreciated vines with new ones³. Usually, they do not want to enter into co-operative arrangements. This affects the neighbouring plants and reduces the yields and the quality of the grapes.

An important tendency is the increase in the share of the vineyards owned by wineries. Increasing interest by wineries to purchase land is favoured by the end of the land restitution process and unwillingness of many new landowners for entering the agricultural business.

³ Decline in grape production in Bulgaria comes from different sources. The existing vineyards are old: young vines (under 5 years old) are about 3%, about 13% are 5-10 years old, about 22% are between 10-15 years old and 62% are over 15 years old. The ratio between the uprooted vineyards and the newly planted ones in recent years is around 8 to 1.

In Hungary, by the end of 1999, small-scale farms comprise 92% of all grape-producing farms. Official statistics show that around 132,267 farms in Hungary are involved in (some) grape production. Official statistics in Bulgaria show that there are around 23,000 grape producers in Bulgaria and more than 120 wine processors. However, one estimates that in Bulgaria only 55% of the wine grape production is usually purchased by the wineries. The rest is left for self-consumption and homemaking of wine. Economic reforms led to an increase in subsistence farming, not only in Bulgaria, but also in Romania, Slovakia, Macedonia and, especially in the FSU, which strongly affected the market.

In other transition countries where grape production was located on large state and collective farms under Communism, such as for example in Romania, and where grape is an important activity, grape production also has shifted to family farms on scattered plots⁴. In Slovenia there are about 34,809 family farms involved in production of grapes with average size of 0,4 ha.

The small family farms typically use very labor intensive production techniques. This creates some specific problems in grape production if these farms need to make the necessary investments, both in human capital and in equipment and technology, to upgrade their production techniques in order to obtain minimum quality of grapes. Fragmented farm structures also poses specific problems for investors in wine processing, in terms of transaction costs of grape collection, consolidation of vineyards and for on-farm investment.

Reform of chain

Wine companies were strongly co-integrated with the grape-producers (mainly large co-operatives) during the former central planned economy. In spite of the fact that parts of the production was exported to Western European countries, wineries had low levels of investment capital, resulting in lack of upgrading of technology and in low level of know-how and quality of wine production. Specifically, trade in wine products depended on the decisions and acts of a single trade monopoly organization at a central level, not from the wineries, at micro level. After the reforms, the link between the wine processors and the grape farms were more disrupted in countries like Bulgaria, Albania and Romania, while it was kept more successfully in other countries like Slovakia and Czech Republic, and Hungary, where co-operatives were not so severely restructured or liquidated.

⁴ By 1997, 72% of the Romanian vine area was private property (Rusu, 2000).

Like the other food processing companies, wine processors had difficulties in accessing capital, especially during the first years of transition both because of the ongoing land and banking reforms accompanied by the macro-economic processes, decline in GDP and high inflation. Some of the wine producers were left with debts and their situation was worsened by the loss of the East German and Russian market. The best wines were mainly exported to the EU market, while the low quality production was sold in the FSU countries, Poland and East Germany.

There were payment delays, especially in the beginning of the reforms, when farmers received parts of their money at the time of delivering the grapes and parts after a few months, usually after the produced wine was sold by the wineries. This created disturbances and capital constraints in the wine chain inducing farmers to reduce inputs and caused a decline in grape supply and quality, and a shift to self-subsistence farming⁵.

Foreign investment has played an important role in providing access to much needed foreign capital, know-how, and technology, also domestic financial resources, both public and private have contributed to improvements in quality and productivity in the recent years (see further).

Privatization, foreign investments, restructuring

Various approaches of privatization of processing facilities have been followed, resulting in different market and industry dynamics during the transition period (Gow, 2000). For example, the Hungarian privatization procedure of selling off processing facilities to the highest bidder has caused a much more efficient restructuring and stronger inflow of foreign capital than other procedures followed by most CEECs and FSU countries (Swinnen, Dries and Gow, 2001). In general, the food industry has attracted much foreign investments. By 2000, more than 50% of the assets in the Hungarian food and beverage industry is foreign property. By the end of 1998 major FDI (over 1 mln. USD) in the Bulgarian food industry accounted for some 257 mln. USD or 12.7% of total FDI in the country by that time. By 2000, investments in food industry accounted for 30% of total FDI in the country. FDI in Bulgarian wine production increased significantly over the past years: from 16.6 million US\$ in 1998 to 81.3 million US\$ in 2000⁶. Although most of the Romanian wine industry was privatised by 1999, foreign investment is still low. In general, from

⁵ The position of the farmers was worsened by the delay in the establishment of clearly property rights and the delay in the land reform. In Bulgaria and Romania the process continued for more than 9 years, and while in Bulgaria about 98% of the agricultural land has been restituted, in Romania the process is still going on (85% by the end of 1999).

⁶ 11.5 mln. USD for modernization of the production facilities in Yambol and Shoumen wineries (Domaine Boyar AD), 50 mln. USD in the construction of new winery in Sliven (Domaine Boyar AD), 18.2 mln. USD for the privatization of Vinprom Rouse (Seaboard Overseas, USA and Vinprom-holdings LLC Ltd, USA), 1.6 mln. USD for the privatization of Vinprom-Popovo OOD (Unibul Wines, UK). Additionally, the privatization of Vinprom-Svishtov became possible after an investment credit of Sumitomo Corporation of Japan. Vinprom Service Kork (Portugal) became another foreign player in Bulgarian wine market. Investments in glass industry accounted to

more than 600 privatised companies in the country (including wine industry), less than 5% are foreign property. In addition, in 2000, a significant amount of privatisation contracts have been cancelled because of the investors' impossibility to meet their commitments.

Different type of privatisation methods applied in FSU countries resulted in large differences in the ownership structure. For example, in Ukraine, where privatization favoured incumbent managers, 54% of total assets were owned by managers in 1997. Enterprises in Russia and Moldova had more diversified ownership on average (Djankov, 1999). State participation in the enterprises' management has effectively constrained enterprise restructuring. In Hungary, a variety of wineries have emerged. In some cases, joint ventures (CANA and Eurobor, Hungary) and local management (Helvecia, Hungary) have retained past structures of integration through ownership and contracts. In cases where new ownership is not in full control, changes in the management may not occur. On the contrary, in the cases of complete buy-outs or foreign control, the wineries have vertically integrated through contracts, with no assurance that former suppliers will be retained (Hungarovin or Szekszard, Hungary).

In Slovakia, by April 1998, from 1289 registered companies in the food & drink sector, only 40 remained in public ownership. In Bulgaria, by the end of 2000, all wine-processing assets were private property, but only a few were owned by foreign companies. Most of the wineries stayed co-operative property or were bought out from managerial-employee buy-outs in Bulgaria, Romania, and also in some FSU countries.

Because of the narrowing export market for Bulgarian wines, the process of restructuring started with the establishment of Boyar Estates after the merger between the foreign owned Domaine Boyar and Vinprom-Rousse Seabord. Actually, this merger established a new structure with large market power, especially in the export of quality wine and domestic retailing. The new owners possess at the moment 4 large wineries in very favored areas: two in the Northern and two in the Southern part of the country. Most of the other large wine processing companies are in a difficult economic situation, and especially Gamza Suhindol. Hence, further consolidation in the local wine markets may improve the high quality production, innovations, improved supply, better labeling, etc., as it is the case in other industries in transition countries. But it will also create more competition for the small local wine-processors' development.

some 24 mln. USD (Glassinvest Ltd, Cyprus and Baerck Overseas, Cyprus). The presence and investments of Danone (France) and TKM Fruit and Juice (Greece) have their additional effect at farm level.

Some private wine companies are trying to set up technology adoption⁷ and credit facilitation programs for their wine-grape supplying farms. With major capital market imperfections in most of the countries, such programs can significantly affect farms' access to basic inputs and finance. For example, some companies provide loans for farms to invest in new plants or machine equipment, and assist them in getting access to better fertilizers, chemicals and other inputs, and in some cases even support them for investments in land purchase. They even directly buy and supply the necessary inputs to the farms and guarantee the purchase of the future production (the case of Damjanitza, Bulgaria). Both foreign owned and domestic wine companies implement such credit and investment programs in order to guarantee their inputs, but it is not yet a widespread practice, because of the difficult economic situation in most of the wineries.

Although data is difficult to obtain, foreign investors appear to be imposing higher quality standards. Their example is followed also by domestic investors who produce for the Western markets, America and Asia, where the market pressure from both the consumers and competing wine suppliers is much higher than in East European markets.

FDI in wine industry was hindered in most of the CEECs by several factors, such as general economic and institutional uncertainty, small domestic markets and insolvent demand for high quality products; tight state control on foreign capital and state preferences for domestic capital in the privatisation; lack of transparency in the general rules for investments and the privatization process; legal restrictions on FDI; unstable and not well developed foreign markets for wine production; predominant orientation of the wine producers to the FSU market and its unclear future; general uncertainty about the future of former Yugoslavia; prohibition of sales of certain assets⁸; taxes levied on the sales of state assets and excessive bureaucracy.

FDI in the retailing system, which could assist the promotion of wine on domestic and foreign markets, has strongly increased in the last few years. Furthermore, the direct sale of wine from local producers to consumers is increasing. Overall, distribution systems become more demand-driven, but inefficiencies remain at both wholesale and retail levels.

Also the importance of media advertising and specialised magazines is increasing, and while successful attempts in this direction have been done in Bulgaria and Hungary, Romania is still lagging behind.

⁷ Improvements in technologies started to appear also in the FSU countries. For example, in five Moldovian wineries (Milestii Mici, Nisporeni, Stauceni, Ciadir-Lunga, and Carpineni) new lines for sparkling wines have been built. Additionally, with credits granted by the EBRD and the Canadian company "Garling", 24 wineries have been equipped and a new glass factory (28 million US\$) is under construction. Investments of Penfold (Australia) and HDR (France) are also present.

Progress of quality improvements and EU accession

The low quality of grape production resulting in production of wines of low quality affects significantly the international competitive positions of the countries. For example, one of the preconditions to sell in the EU market is the accordance of production standards with the quality, sanitary and hygiene regulations imposed by the EU regulations. So far, there are no wineries in Bulgaria that are certified in accordance with the EU standards and quality requirements, although large part of the production of wine is exported there. Furthermore, still no agreement between Bulgaria and the EU for certification of the quality of the wines produced in Bulgaria and exported to the EU market, has been signed. These certificates have to be issued from mutually approved official certification agencies and based on evidence that the wine has been produced in accordance with the ecological standards of the EU. Implementation of the hygiene and technical standards of the EU will be slow and much more difficult for the medium and small-scale manufacturers.

In the field of quality policy in agriculture no particular developments in Slovenia, Hungary and Slovakia can be noted regarding alignment to the *acquis*. Conditions for the production of quality wines were adopted in Czech Republic and five ordinances concerning production, quality, licensing and commercial presentation of wine and spirits have been adopted in Bulgaria. Some progress has been made from Romania regarding certification and protection of the denomination of origin for wines. In general, unregistered and unprotected trademarks is another problem characterising wine production in Eastern Europe.

As a conclusion, legislation establishing quality and marketing standards in CEECs needs to be completed, as well as the legal framework for producers' organizations (associations). The quality control system needs reorganization.

Reform Impacts on Wine Trade and World Markets

Moldova, Bulgaria, Hungary, Romania, Macedonia and Ukraine are the largest wine exporters in the region, with Russia, Poland and Czech Republic the largest importers. Russia has traditionally been the largest importer of wine and wine products. By 1992, Russia imported almost 130 million US\$ of wine products of which 110 million US\$ were wines (tables 13 and 15). By 1998 imports were up to 440 million US\$, of which 359 millions US\$ of wines.

⁸ In Ukraine, some equipment was still under mobilization reserve and the enterprise had to maintain it in case of war and could not be

According to official statistics, wine production fell around 55% between 1990 and 1998. The increased value of imports appears importantly due to a shift within the wine products. For example, table 12 shows how imports of vermouth and similar products have increased considerably during transition (from close to 3,000 tons for Poland and 8,500 tons for Russia in 1992 to over 13,000 tons for Poland and 22,700 tons for Russia in the second half of the 1990s), while most of grapes imports to Russia have by half fallen during the second half of the 1990s (from over 111,000 tons in 1996 to 50,000 tons by 1998).

Within the former Soviet Union framework, Ukraine and Moldova exported much wine to Russia. In 1992, i.e. immediately after the separation of the Republics from the FSU, they exported around 110 million US\$ in wine products, mostly from Moldova. Remarkably, by 1998 exports of wine in value had decreased for Ukraine, but exports of wine products for both countries had increased to over 220 million US\$. Part of this is probably pass-through produce, as imports have increased as well. Still, net exports of wine products almost doubled between 1992 and 1998 to 182 million US\$, mainly from Moldova. A significant trade increase is shown also from Georgia.

Changes in CEEC-10 export of wine in volume (figures 15 and 16) and in value (figure 18) can be separated into three phases. During the first years of the reforms exports declined sharply. After 1992 they recovered significantly, reaching a maximum in 1995. After 1995 they recovered significantly, reaching a maximum in 1995. In the second half of the 1990s wine exports in volume and in value declined again. Traditional central European and Balkan wine producing countries (Bulgaria, Croatia, Hungary, Macedonia, Romania, Serbia & Monte Negro, Slovakia) are net exporters of wine.

Exports from Hungary have been relatively stable since 1993, but exports from Bulgaria and Romania have been more volatile (figure 16). The increase in Bulgarian exports between 1992 and 1996 was mostly to Russia since it was losing share in the EU (table 16)⁹. The recent decline in Bulgarian export of wine (which represents about 30% of total agricultural export in 1999), as well as in the wine production, followed the start of the restructuring and privatization in the wine sector in 1995 and the economic crisis in 1996/1997 - the most severe since the start of the reforms. The Russian crisis in 1998 complicated the export problems¹⁰.

sold.

⁹ The Bulgarian wine export to the EU have fallen by one-half during the 1990s. More than 65% of Bulgarian wine export is to Moldova, Great Britain, Germany, Japan and Poland. More than 50% of Romanian export is destined for the EU market.

¹⁰ The low and unstable quality of Bulgarian wines makes them less attractive on the foreign markets. Additionally, the chaos during the purchase campaigns, decreasing quality of the grape production, combined with the disrupted marketing of the wines after the privatization decreased significantly the wine export. The wineries are full with wine production of low quality (according to the official

In contrast to the trade developments with the EU, Bulgarian exports of bottled wine to the FSU increased after 1992 until 1998 when the Russian financial crisis effectively closed down the Russian market for Bulgarian exports, causing major problems on the domestic market. The Bulgarian wine export has grown mostly in non-EU markets, such as the FSU and Japan market. Improvements in the grape processing and distribution industry have improved the quality and international competitiveness of the wine chains in Hungary and Bulgaria (as in some other CEECs), but still the hard work lies ahead. However, while the quality of exported products, and its share in total exports, has improved, most of them went to the Russian market, and suffered heavily from the recent volatility in this market.

Romanian export of wine has never been strong, and in 1999 accounted for only 15% of total wine output. In general, state enterprises still dominate in upstream and downstream industries and the country suffers from a lack of export specialization. Production of low quality wines still has largest share, with production and sales of white wine representing more than 80% of total sales in 1999 (Euromonitor, 2001). Most of the wine exports go to Germany (40-50%), although the exports have fallen by 76% in the period 1986-1999. A specific feature is the export of broached (bulk) wine that is bottled in Germany and sold with labels showing the Romanian origin of the wine (Gavrila, 2001). Considerable steps in quality improvements and marketing have to be taken.

Although import of wine (in volume and value terms) increased during transition (figure 19) for the CEEC-10 and for the FSU also (before the financial crisis in Russia), this was not import of high-quality wine. Parts of the imported production has been bottled in the country importer, mixed with local wines and re-exported to third countries or to the FSU market. In the wine trade developments in Eastern Europe and FSU, trade relations between neighbouring countries play a special role (Macedonia and Bulgaria, Czech Republic and Slovakia, Moldova and Romania, Moldova and Ukraine, Hungary and Slovenia, Georgia and Russia).

Wine Policies

Government intervention in wine sector differs between countries. In several countries, such as Bulgaria, Romania and Hungary there are no direct subsidies for the grape producers and wine processors and thus market requirements are the only regulation system. In Slovenia, on the contrary, from 2000 onwards, direct payments for grapes per ha (fixed at level 294.17 EUR/ha) were introduced to make the policies consistent with the CAP of the EU. Because of

data, about 80 million liters of wine are still kept in the wineries) that cannot be sold on the markets, which further reduces their

administrative controls of the application for subsidies, a register of grape and winegrowers (including data on grape and winegrowers, vinearea, grape and wine crop) has been set up.

In Czech Republic, legislation is partly aligned with EU requirements concerning wine. Amendments in Act on Viticulture have been introduced concerning oenological practices, requirements on imported wine, vineyard register, conditions for production of quality wines and the labelling of individual types of wine, in anticipation of a new viticulture law. In Slovakia the completion of the vineyard register has been hindered by unclear land property rights and land fragmentation. Bulgaria has introduced a new Law on Wines and Spirits, and a Law on Vineyard Cadaster, entered into force in 2000, and is preparing a secondary legislation. In spite of this, still implementation of the legislation and the link between the institutions and the local producers remains weak. Hungary adopted its legislation on a cellar register, while the establishment of a vineyard register has been delayed in 2000.

Policy instruments

After the Uruguay Round Agreement (URA), non-tariff barriers were dismantled through the tariffication process and import licensing has been eliminated. This enabled Hungary to bind relatively high tariffs, but Romania setting the highest ceilings on binding tariffs among the CEECs due to the obtained status of “developing country”. For instance, in Hungary, the tariff escalation together with the higher export subsidies for processed than stable products lead to significant protection of the food industry. Wine was one of the main sub-sectors benefiting from export refunds as a result of the generally higher rates of subsidy for processed and value-added products.

The WTO panel established in February 1997 reached an agreement on waiver for Hungary without changing the quantity limitations for wine and beverages. On the other hand, Hungary commits itself not to use the flexibility granted under the waiver for exports to non-traditional markets like North and South America, Pacific Region, East and South East Asia.

Eastern EU Enlargement and its expected effects on wine markets and policies

When the CEECs join the EU they will have to adjust their agricultural policies to the CAP as it stands at that time. Wine trade and policy reform in CEECs depends on the Association

production capabilities.

agreements with the EU, CEFTA and EFTA agreements, FTA with third countries, other specific regional agreements (Czech-Slovak Customs Union, Baltic FTA) and bilateral agreements (on economic development, protection of investments) within the CEE countries. In the CEFTA agreement wine stayed in the third group of products for which no common agreement could be reached.

Obviously extending the current EU wine policy to the CEECs raises a number of important questions, none of which have obvious solutions. For example, if wine quotas and restriction on vineyards are to be implemented, what is the relevant base period for the CEECs, given their specific Communist and transition history? How can wine quota be implemented in a countries such as Bulgaria and Romania with its hugely fragmented grape-farms' structure? What will be the impact on prices and supply and what will be the impact on trade, export subsidies, and WTO commitments? What will be the effect of EU enlargement on raw materials' prices, respectively on trade performance of CEECs, proceeding from the assumption that trade diversion is likely to occur?

Lets start with the price effects. First, producer prices in CEECs are relatively lower then EU prices due to low level of support, inefficiency of the downstream sector and net exporting situation. The relatively high level of EU prices compared with world prices is another reason for the existing price gap, which is diminishing for all CEECs since the early 1990's. Second, the price differences among CEE countries are large as a result from the unequal economic development. On the other hand, the relatively high competitive wine market positions of Bulgaria, Hungary, Romania, Macedonia, Croatia masks severe structural problems, especially in grape production.

Apart from differences in policies, quality differences explain a large part of the price gap. Furthermore, the relative EU-CEEC prices are also strongly affected by exchange rate developments, and re-valuations of the CEEC real exchange rate since the mid 1990s have contributed to reducing nominal price gaps for agricultural products (Swinnen, 2002).

As far as the WTO is concerned, enlargement of the EU will be considered, in legal terms, to be the enlargement of a customs union, governed by the povisions laid down in GATT article XXIV (Tangermann, 2000). This article contains provisions for tariff bindings,¹¹ but not for the other commitments. In the 'precedent' of the Northern enlargement in 1995 commitments on market access and domestic support and export subsidies were just added up, net of bilateral trade.

¹¹ Tariff bindings after enlargement must not, on the whole, be higher than the average of the individual members before enlargement.

Probably the same procedure will be followed, although this may require compensation to trading partners who are directly affected by the customs union – as was the case in the Northern enlargement (Burrell, 2000).

Some CEECs were already GATT members when the URAA was negotiated (Czech Republic, Hungary, Poland, Romania, Slovakia). These countries accepted schedules of quantitative policy commitments during the UR, like other countries, but as the UR overlapped with their transition process, the starting conditions for these countries in the process of converting past policies into future WTO commitments differs from Western countries, as finding a base period was a particularly difficult issue. CEECs were given the option to adopt tariff bindings essentially unrelated to past policies, similar as developing countries are treated. Other transition countries have negotiated their accession to the WTO since the URAA and have become members (Bulgaria, Estonia, Latvia, Slovenia) or are still negotiating. The fundamental nature of their agreement is similar to that of others. Hence their agricultural parts specify commitments on market access, export subsidization, and domestic support. However the commitments and details differ quite significantly among CEECs.

Most CEECs have implemented tariff bindings considerably above actually implemented tariffs. For example, Bulgaria chose tariff bindings 40% + 80 ECU/hl in 1995 to be reduced to 25% + 51 ECU/hl in the end period, considerably higher than the EU-15 end-period bound tariff for wine of 32 ECU/hl. Romania opted for base rate of duty of 350 for wine in 1994 that has to be reduced with 10% by year 2006 reaching a bound rate of duty of 315. Slovenia's base rate of duty for wines of 27% in 1995 has to be reduced to 17% in 2000 with tariff of 245 ECU/t in 1997 that to be increased to tariff equivalent of 436 ECU/t in 2000. These high tariff bindings have allowed the CEECs to increase tariffs significantly recently without creating a conflict with WTO.

Hence, for domestic support few problems are expected for EU enlargement since both the EU-15 and the CEECs still have considerable slack in their commitments. However, problems may arise on the level of tariff bindings and export subsidies. CEECs and the EU-15 already have problems currently on export subsidies in some cases.

Also in terms of export subsidies there may be problems. The quantity reduction export subsidies commitments reflect the historical evolution including the central planning period. While for Hungary the trend in the export commitments shows reduction of 499 thousand hl (4,8 mio ECU) in 1995 to 408 thousand hl (1.99 mio ECU) in 2000 without waiver and to 408 thousand hl (10.09 mio ECU) with waiver. The reduction for Bulgaria is not so significant and is from 98,9 thousand tons in 1997 (1,60 mio ECU) in 1997 to 87,2 thousand tons in 2000 (1,26 mio ECU),

while for Romania is considerably lower: from 9,25 thousand tons in 1995 (64,70 mio Lei) to 8,87 thousand tons (60.70 mio Lei) in 2000, with projection of reduction to 7,9 thousand tons (50,40 mio Lei) in 2004. The reduction for Slovakian export commitments are from 9,8 thousand tons (49,2 mio SKK) in 1997 to 8,7 thousand tons (38,4 mio SKK) in 2000, while for Czech Republic is almost insignificant: from 4,2 thousand tons (20.0 mio CZK) in 1997 to 3,7 thousand tons (15,6 mio CZK) in 2000.

Such problems could be strongly reinforced if considerable reductions in commitments are done in the near future.

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List of Tables and Figures

Table 1. Production and exports of the European wine-producing regions, 1999

Region	Production of wine in volume ('000 t)	Share of world wine production in volume (%)	Export of wine in volume ('000 t)	Share of world export of wine in volume	Export of wine in value (mio USD)	Share of world export of wine in value
CEEC - 10	1322.3	4.6	218.8	3.4	193.4	1.4
BNAC - 5	490.8	1.7	68.7	1.1	60.3	0.4
FSU-4	593.5	2.1	88.2	1.4	81.3	0.6
FSU	849.5	3.0	115.1	1.8	129.9	0.9
EU - 7	18205.8	64.0	4753.8	74.3	10946.5	77.7
EU - 15	18225.6	64.1	4838.3	75.6	11348.1	80.5
World	28433.7	100.0	6401.0	100.0	14094.0	100.0

CEEC-10: Bulgaria, Czech Republic, Estonia, , Hungary, Lithuania, Litva, Slovakia, Slovenia, Poland, Romania.

BNAC-5: Albania, Bosnia & Herzegovina, Croatia, Macedonia, Serbia & Monte Negro.

FSU-4: Russia, Moldova, Ukraine and Uzbekistan.

FSU: without Estonia, Lithuania, Litva

EU-7: Austria, France, Germany, Greece, Italy, Portugal, Spain.

Source: FAO and own calculations

Table 2. Production and export of the main Central and Eastern European wine-producing countries, 1999

Country	Production of wine in volume ('000 t)	Share of world wine production in volume (%)	Export of wine in volume ('000 t)	Share of world export of wine in volume (%)	Export of wine in value (mio US\$)	Share of world export of wine in value (%)
Romania	650.4	2.29	29.3	0.46	22.3	0.16
Hungary	333.9	1.17	87.2	1.36	76.7	0.54
Bulgaria	139.4	0.49	74.0	1.16	75.0	0.53
Slovenia	68.8	0.24	14.0	0.22	4.3	0.03
Croatia	209.4	0.74	6.6	0.10	8.7	0.06
Serbia & MN	140.0	0.49	4.9	0.08	3.9	0.03
Macedonia	122.7	0.43	55.0	0.86	47.0	0.33
Albania	12.7	0.04	0.0	0.00	0.0	0.00
B&H	6.0	0.02	2.2	0.03	0.7	0.01
Russia	214.0	0.75	0.8	0.01	0.7	0.005
Moldova	189.5	0.67	65.7	1.03	64.3	0.46
Uzbekistan	150.0	0.53	6.0	0.09	3.7	0.03
Ukraine	40.0	0.14	15.7	0.25	12.6	0.09
Georgia	154.0	0.54	13.2	0.21	24.4	0.17
Azerbaijan	37.5	0.13	3.6	0.06	0.6	0.004
Kazakhstan	19.1	0.07	0.2	0.00	0.09	0.001
Turkmenistan	18.0	0.06	6.0	0.09	18.0	0.13
Armenia	6.6	0.02	0.08	0.00	0.1	0.001

Source: FAO and own calculations

Table 3. Consumption of wine in some world regions

Region	Volume of beverage wine consumption ('000 l)			Share of world beverage wine consumption volume (%)			Volume of beverage wine consumption (l/capita)			Wine's share of total alcohol consumption (%)		
	1985-89	1990-94	1995-99	1985-89	1990-94	1995-99	1985-89	1990-94	1995-99	1985-89	1990-94	1995-99
Eastern Europe and FSU	39125	35739	39065	16,7	15,4	16,5	9,7	8,6	9,5	20,5	15,5	14,4
Latin America	26865	24220	21756	11,5	10,4	9,2	6,3	5,2	4,3	23,6	16,6	13,3
USA and Canada	9718	20061	22085	4,1	8,6	9,3	3,6	7,1	7,4	6,3	12,6	13,9
Australia & New Zealand	3855	3717	4083	1,6	1,6	1,7	19,7	17,8	18,3	26,8	26,4	29,5
Western Europe	146413	137062	134167	62,5	59,0	56,8	65,6*	57,6*	53,3*	67,1*	63,8*	63,4*
Asia	2284	5732	8500	1,0	2,5	3,6	0,1	0,2	0,3	0,8	1,4	1,6
World	234243	232439	236352	100,0	100,0	100,0	4,7	4,3	4,1	21,5	18,0	16,2

Source: Anderson and Norman (2001) and own calculations

Table 4. Consumption of beer (l/capita) in some world regions

Region	Volume of beer consumption (l/capita)		
	1985-89	1990-94	1995-99
Eastern Europe and FSU	36,2	37,2	42,5
Latin America	38,9	44,6	49,2
USA and Canada	88,8	85,6	82,2
Australia & New Zealand	114,5	105,0	93,5
Western Europe	40,6*	43,6*	42,5*
Asia	5,0	6,7	8,8
World	20,7	21,5	22,6

*France, Italy, Portugal and Spain

Source: Anderson and Norman (2001)

Table 5. Consumption of wine per capita in some CEECs, 1989-1998

Country	Unit	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Hungary	l	22.8	27.7	28.9	29.8	31.5	29.2	26.6	30.3	31.9	32.4
Romania	l	26.2	20.7	21.8	20.7	26.0	22.1	23.5	23.8	29.6	30.0
Poland	l	n.a.	n.a.	n.a.	n.a.	n.a.	6.9	6.8	6.9	7.4	7.5
Slovak Republic	l					n.a.	16.4	12.7	19.8	14.8	13.3
Latvia	l					n.a.	n.a.	5.8	6.5	4.7	6.4
Slovenia	l				47.3	46.9	44.7	44.1	43.6	42.5	n.a.
Russia	l	10,4	9,6	8,8	5,6	5,7	7,6	9,4	5,7	5,9	6,0
Ukraine	l	15*	15*	11.5**	11.5**	11.5**	11.5**	11.5**	7.6	7.2	6.3

Sources: Central Statistical Office (Hungary, Romania), VUEPP/RIAFE, SBS (Slovak Republic), World Drink Trends 1999 ed. (Poland, Latvia), DG VI (Slovenia), Anderson, 2001 (Russia).

*average for the period 1986-1990

** average for the period 1991-1995

Table 6. Bulgaria: Household consumption of some foods and beverages (average per capita), 1989-1999

Foods and beverages	Unit	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Grapes	kg	5.0	4.5	4.2	5.4	5.3	4.3	3.6	3.8	4.0	2.6	2.3
Wine	l	16.4	14.5	12.2	13.9	12.5	10.2	8.5	8.4	8.6	9.2	6.5
Beer	l	29.7	26.4	17.8	17.5	15.5	16.9	14.7	11.1	5.5	8.9	10.1
Rakia	l	4.2	3.9	3.0	3.2	3.5	3.3	2.7	2.6	2.2	2.7	2.5
Soft drinks	l	32.9	31.2	21.2	26.5	24.8	30.4	28.3	23.4	11.5	20.3	24.6

Source: NSI

Table 7. Slovenia: Annually purchased beverages per household member, 1990-1999

Beverages	Unit	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Wine	l	12.1	10.5	9.5	n.a.	10.6	9.7	9.7	8.8	7.7	8.9
Beer	l	15.6	14.4	13.4	n.a.	20.6	19.2	16.5	27.5	23.1	21.9
Other alcoholic beverages	l	0.4	0.4	0.3	n.a.	0.5	0.4	0.4	0.7	0.6	0.6
Cider, must and mead	l	0.1	0.1	0.1	n.a.	0.1	0.1	0.1	0.1	0.2	0.0

Source: Statistical Office of the Republic of Slovenia

Table 8. Bulgaria: Household consumption of main beverages by decile group of income in 1998 (liters)

Foods and beverages	Total	Decile groups									
		I	II	III	IV	V	VI	VII	VIII	IX	X
Soft drinks	20.3	8.6	12.1	15.0	16.6	18.7	18.8	22.0	25.3	28.9	36.5
Spirits	21.1	7.1	10.4	13.0	14.7	17.5	19.5	23.3	26.9	32.6	45.6
of which: wine	9.2	2.6	4.6	5.6	6.3	7.6	8.2	10.0	11.7	14.7	20.8
beer	8.9	3.3	4.3	5.5	6.2	7.2	8.5	9.9	11.5	13.6	18.8
rakia	2.7	1.1	1.4	1.7	2.0	2.4	2.5	3.0	3.3	3.8	5.2
other	0.3	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.8

Source: NSI

Table 9. Distribution of the farm land by organizational form in CEECs

	collective/co-operative farms		"individual farms"	
	Pre-1990	1998	Pre-1990	1998
Albania	74	-	4	80
Bulgaria	58	42	13	52
Czech Republic	61	43	0	23
Slovak Republic	69	60	5	5
Hungary	80	28	6	54
Poland	4	3	77	82
Romania	59	12	12	67
Estonia	57	-	6	63
Latvia	54	-	5	95
Lithuania	61	-	9	67
Slovenia	-	-	92	96
Croatia	22	18	78	82

Source: EU Commission (1998), OECD

Table 10. Share of land operated by households and share of household based production (NIS), 1990 and 1996

	Individual land		Individual production (% of GAO)	
	1990	1996	1990	1996
Armenia	4	31	35	98
Georgia	7	23	48	76
Ukraine	7	17	27	53
Moldova	9	16	18	51
Belarus	7	12	25	45
Russia	2	11	24	55
Kyrgyzstan	1	25	34	59
Kazakhstan	0.2	13	28	38
Azerbaijan	3	6	35	63
Takjikistan	2	4	23	39
Uzbekistan	2	4	28	52
Turkmenistan	0.2	0.3	16	30
Average NIS	4	14	28	55

Source: EU Commission (1998), OECD, Lerman (1999)

Table 11. Yields of grape in some Eastern European countries (t/ha)

	1989	1995	1998
Bulgaria	4,5	5,1	3,2
Hungary	4,1	5,4	7,3
Romania	4,2	5,3	3,5
Slovenia	5,6*	5,1	7,1
Serbia & Monte Negro	4,5	5,0	6,2
Macedonia	7,9*	6,4	8,4
Croatia	6,8*	6,5	7,6
Moldova	4,9*	4,9	2,3
Ukraine	4,7*	3,3	2,4
Russia	4,9*	3,8	3,0
Georgia	3,8*	5,6	3,5
EU-15	6,8	6,6	7,3

Source: FAO, NSI

* 1989=1992

Table 12. Change in production of some beverages in Russian Rederation, %, 1990=100

	1990	1995	1996	1997	1998	1999
soft drinks	100,00	29,46	39,48	49,95	74,64	65,74
grape wines	100,00	20,08	14,93	16,25	16,64	24,17
vodka and liquor	100,00	89,24	51,35	60,36	63,27	97,75
konyak	100,00	14,98	19,52	15,62	18,78	23,64
beer	100,00	63,39	61,90	77,68	100,00	132,74
champagne and sparkling wines	100,00	7,86	8,86	9,61	8,79	7,03

Source: Own calculations based on data of the State Statistical Institute, Moscow, Russia

Table 13. Trade in total wine products* (mio US\$)

	1992			1998		
	<i>X</i>	<i>M</i>	<i>X-M</i>	<i>X</i>	<i>M</i>	<i>X-M</i>
Bulgaria	202.4	2.0	200.4	129.6	10.5	119.2
Czech Republic	3.2	12.5	-9.3	1.6	21.7	-20.1
Poland	3.3	14.7	-11.3	2.7	59.1	-56.4
Hungary	115.0	7.5	107.5	93.3	3.4	90.0
Romania	11.0	7.4	3.6	37.9	3.9	34.1
Slovakia	8.3	0.5	7.8	6.9	2.8	4.1
Slovenia	20.3	20.5	-0.2	7.6	4.1	3.5
Croatia	17.7	8.9	8.8	13.1	0.7	12.5
Serbia & Monte Negro	7.0	0.5	6.5	5.8	3.1	2.7
Macedonia	20.8	0.1	20.8	25.1	0.6	24.5
Russia	1.3	128.3	-127.0	1.0	440.5	-439.5
Ukraine	44.0	12.7	31.3	28.2	28.6	-0.4
Uzbekistan	6.4	0.0	6.4	3.7	0.0	3.7
Moldova	66.0	0.9	65.1	190.9	7.9	183.0
Turkmenistan	5.0	0.0	5.0	18.0	0.2	17.8
Georgia	4.1	0.1	4.0	24.4	0.6	23.8

Source: FAO and own calculations

* Total wine products = wine, vermouth and similar products

* 1992 for Bulgaria and Hungary = 1989

* 1992 for Czech Republic and Slovakia = 1993

* 1992 for Romania = 1990

Table 14. Trade in wine products in Russia and Poland, (tons)

	EXPORTS			IMPORTS			NET Trade		
	1992	1996	1998	1992	1996	1998	1992	1996	1998
<u>Russia</u>									
must of grape	0	0	4	17	111,268	50,555	-17	-111,268	-50,551
vermouths and similar	0	153	28	8,536	15,533	22,711	-8,536	-15,380	-22,683
wine	1,205	8,797	842	203,097	234,688	291,090	-201,892	-225,891	-290,248
<u>Poland</u>									
must of grape	0	0	0	0	0	0	0	0	0
vermouths and similar	4,100	1,337	247	2,800	12,120	13,368	1,300	-10,783	-13,121
wine	1,600	12,811	2,085	29,000	47,387	64,925	-27,400	-34,576	-62,840

Source: FAO

Table 15. Trade in wine* (mio US\$)

	1992			1998		
	<i>X</i>	<i>M</i>	<i>X-M</i>	<i>X</i>	<i>M</i>	<i>X-M</i>
Bulgaria	195,5	1,9	193,6	126,6	10,4	116,2
Czech Republic	2,5	11,0	-8,5	1,6	19,8	-18,2
Poland	0,7	10,8	-10,0	2,4	48,3	-46,0
Hungary	86,5	4,1	82,4	91,9	3,4	88,6
Romania	11,0	7,4	3,6	37,6	3,6	34,0
Slovakia	8,2	0,0	8,2	6,9	2,4	4,5
Slovenia	19,7	20,0	-0,3	7,6	4,0	3,5
Croatia	15,1	8,9	6,2	9,7	0,6	9,0
Serbia&Monte Negro	7,0	0,5	6,5	5,7	3,0	2,7
Macedonia	20,7	0,1	20,6	25,0	0,3	24,7
Russia	1,3	110,2	-108,9	0,9	360,4	-359,5
Ukraine	44,0	12,7	31,3	22,5	28,0	-5,5
Uzbekistan	6,4	0,0	6,4	3,7	0,0	3,7
Moldova	66,0	0,9	65,1	177,8	5,6	172,2
Turkmenistan	5,0	0,0	5,0	18,0	0,2	17,8
Georgia	4,1	0,1	4,0	24,4	0,6	23,8

Source: FAO and own calculations

* 1992 for Bulgaria and Hungary = 1989

* 1992 for Czech Republic and Slovakia = 1993

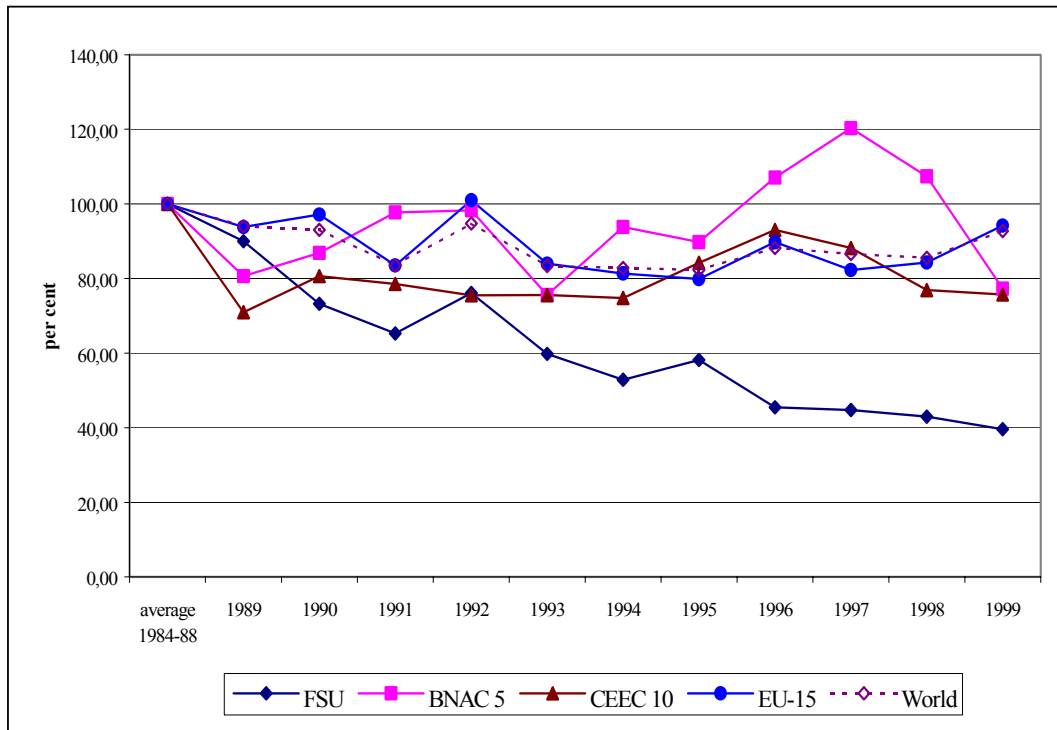
* 1992 for Romania = 1990

Table 16. Bulgaria: Structure of export of bottled and broached wine in volume by major regions, 1993-2000, %

Region	bottled wine			broached wine		
	1993	1997	2000	1993	1997	2000
Western Europe	61.58	47.84	49.50	77.19	43.99	72.83
Central and Eastern Europe	29.87	42.78	43.45	7.75	18.03	7.60
USA and Canada	3.19	2.56	3.05	0.55	2.16	1.90
Japan	-	-	-	11.99	29.48	17.45
Other	5.36	6.82	4.00	2.52	6.34	0.22
Total	100.00	100.00	100.00	100.00	100.00	100.00

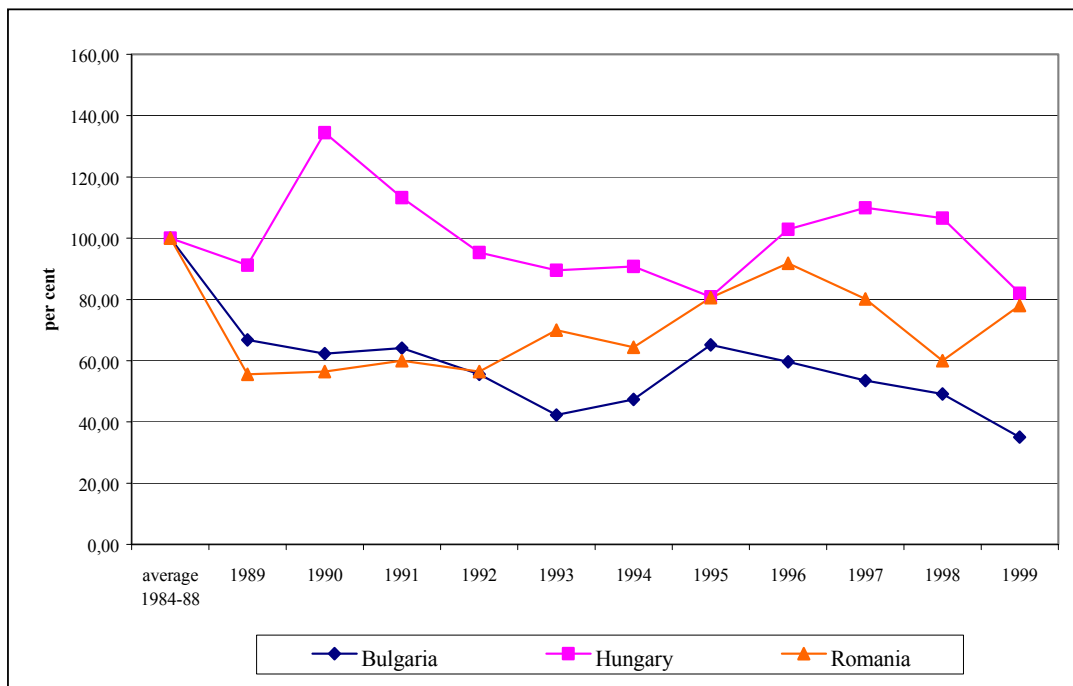
Source: Own calculations

Figure 1. Change in production of wine by regions



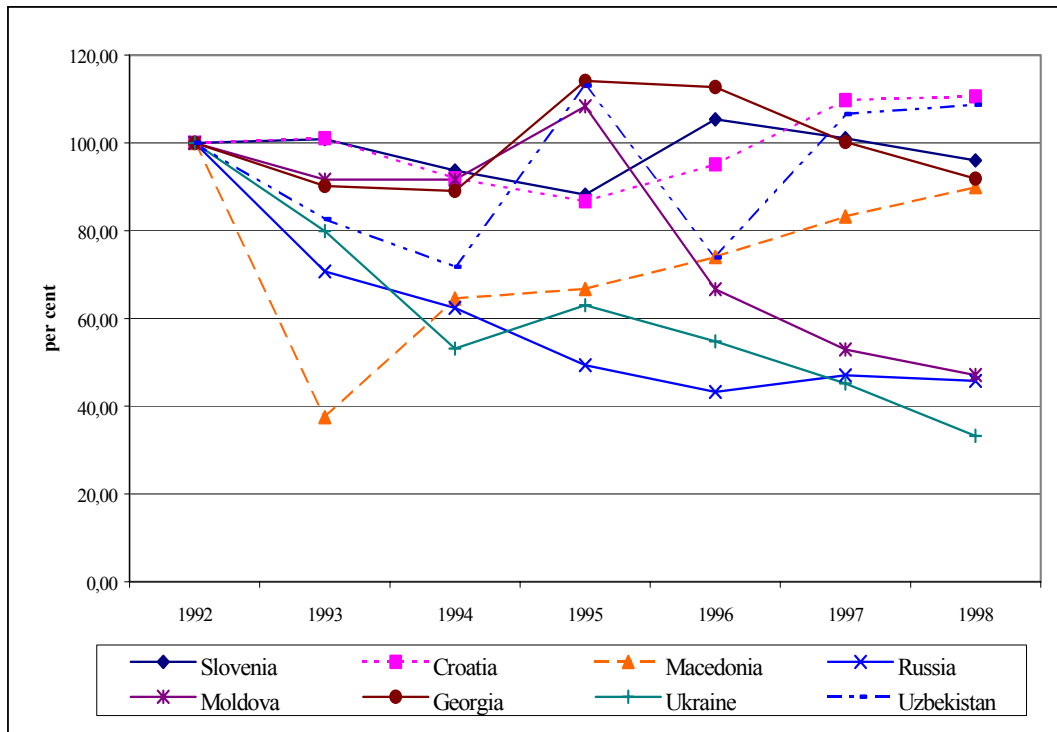
Source: Own calculations

Figure 2. Change in production of wine by countries



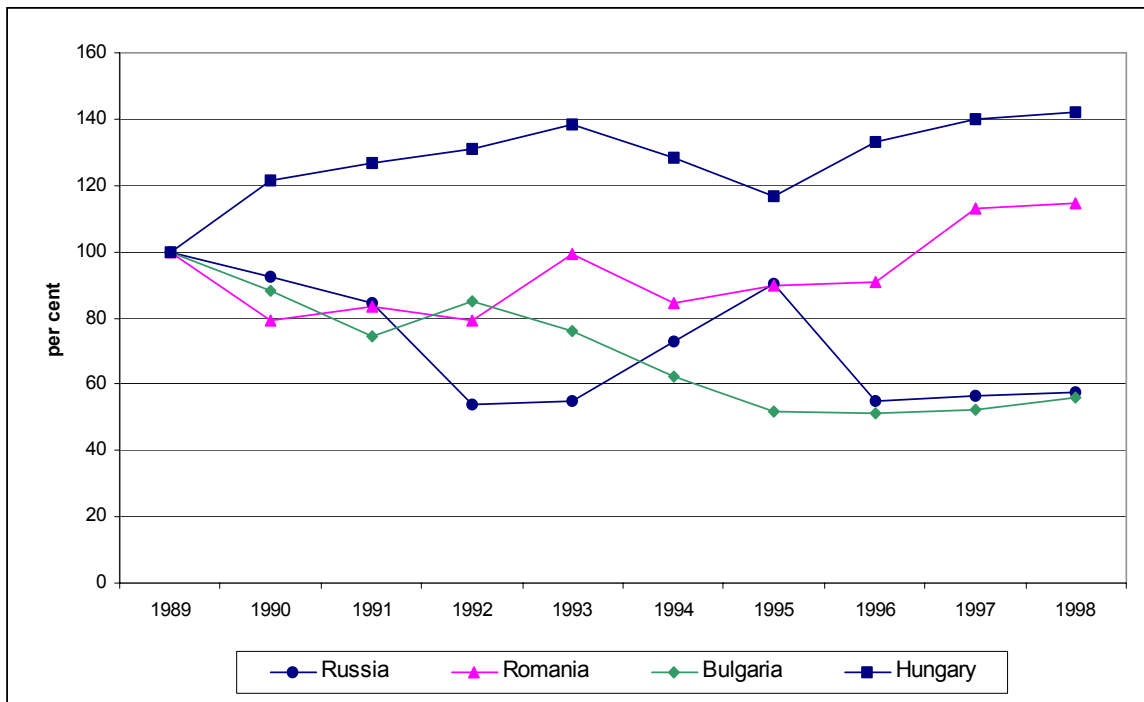
Source: Own calculations

Figure 3. Changes in production of wine by countries



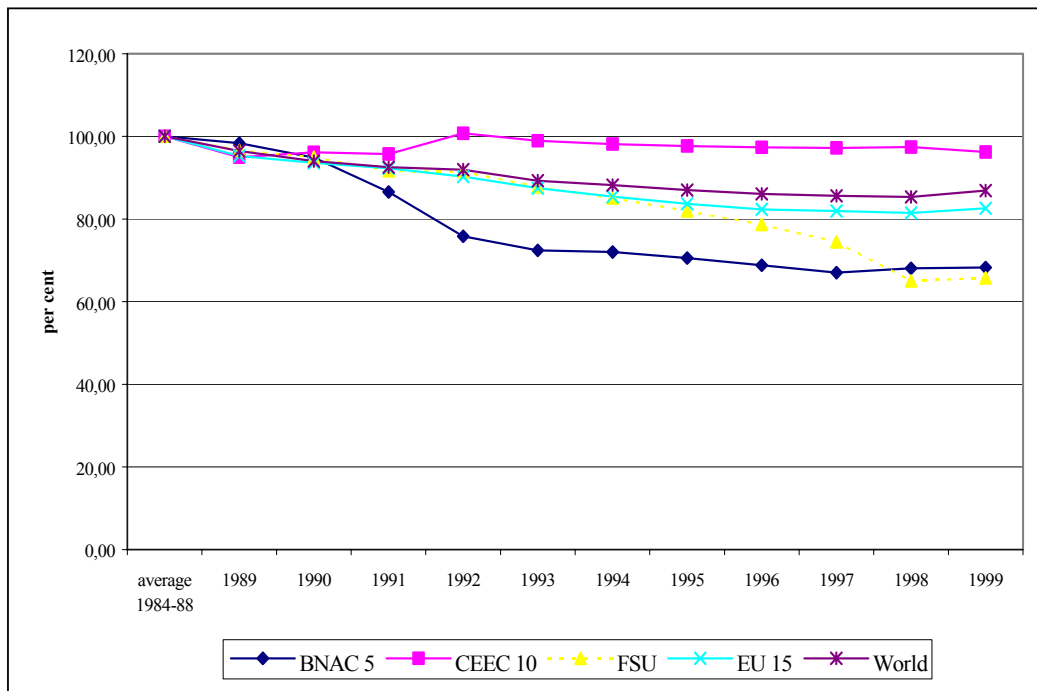
Source: Own calculations

Figure 4. Changes in consumption of wine by countries



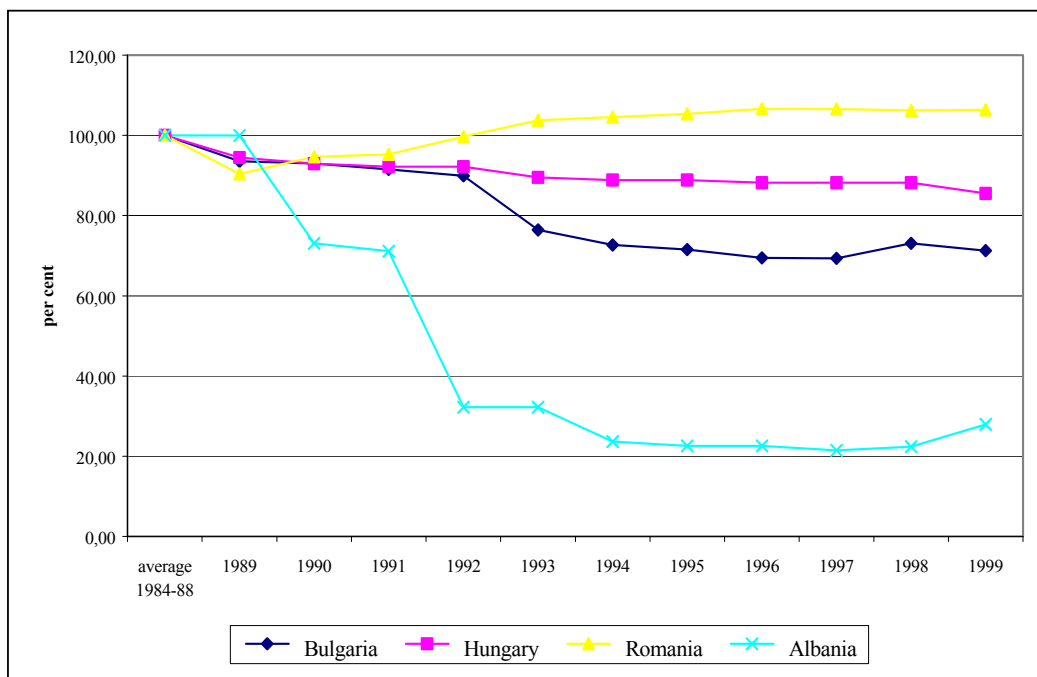
Source: Own calculations

Figure 5. Change in the area of vineyards by regions



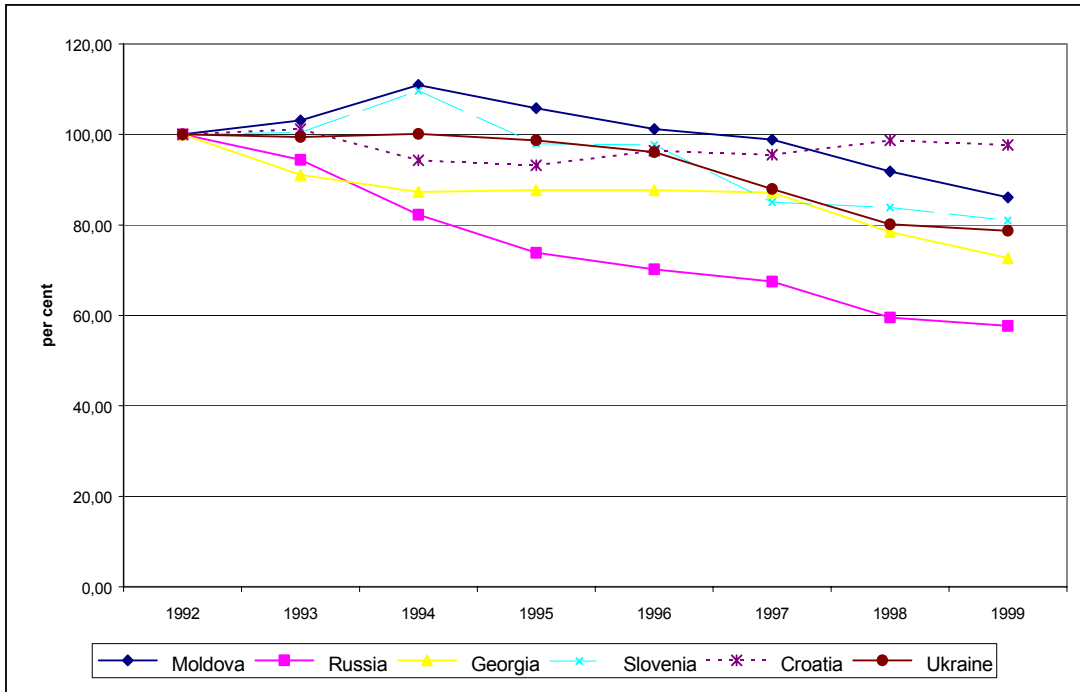
Source: Own calculations

Figure 6. Change in area of vineyards by countries



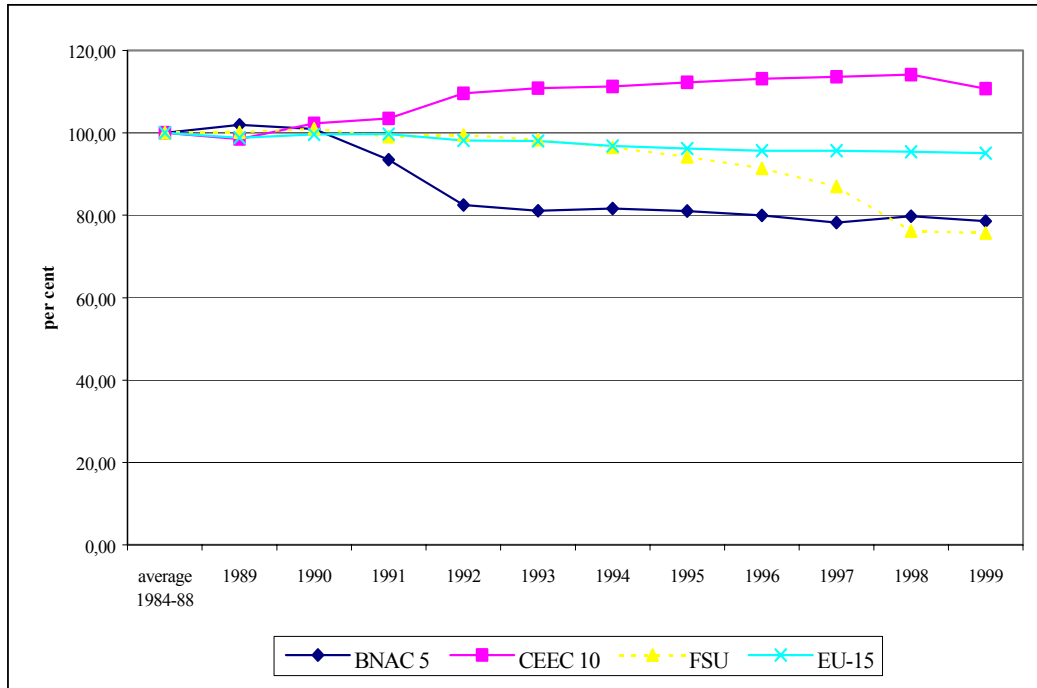
Source: Own calculations

Figure 7. Change in area of vineyards by countries



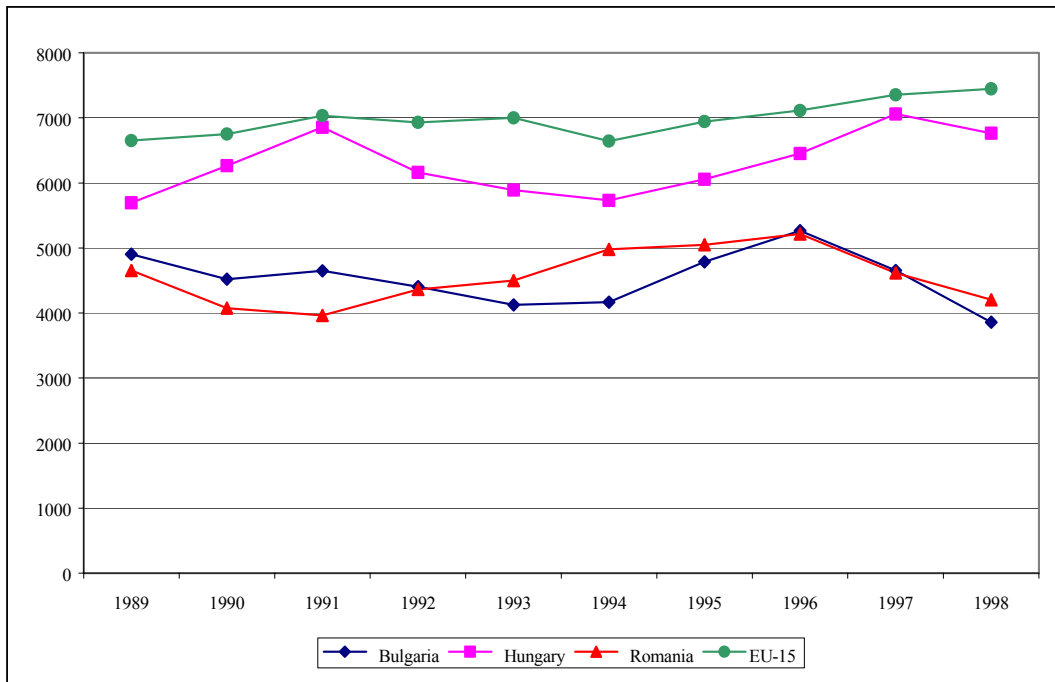
Source: Own calculations

Figure 8. Change in the share of world vineyards by regions



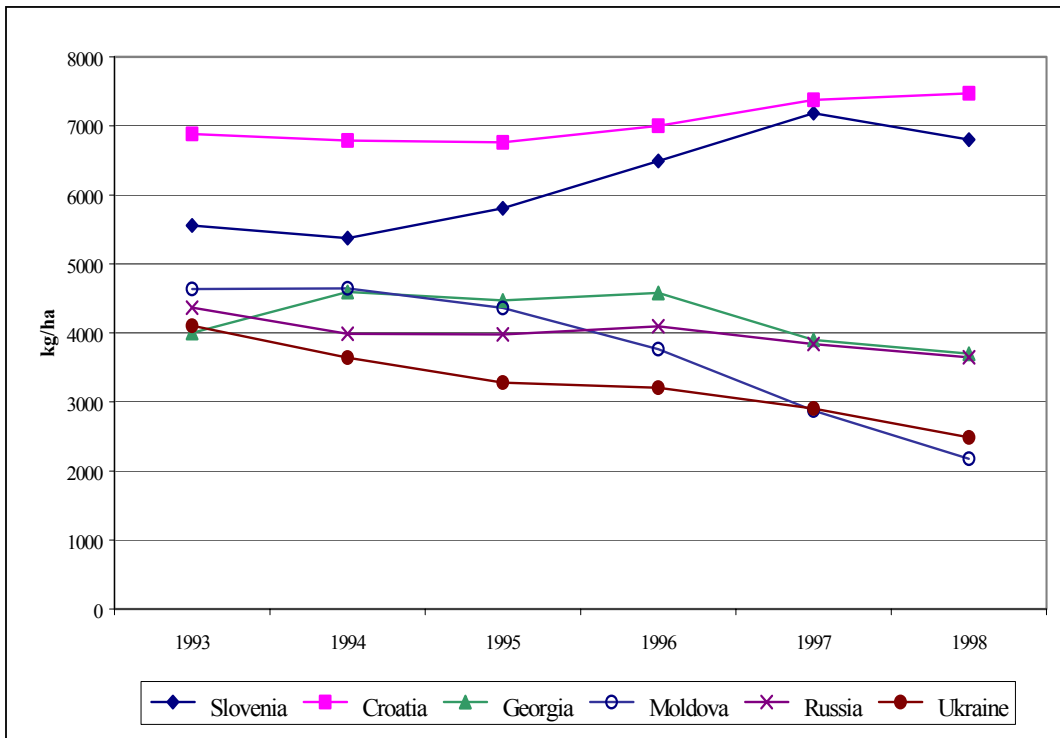
Source: Own calculations

Figure 9. Yields of grape in some CEECs, moving average



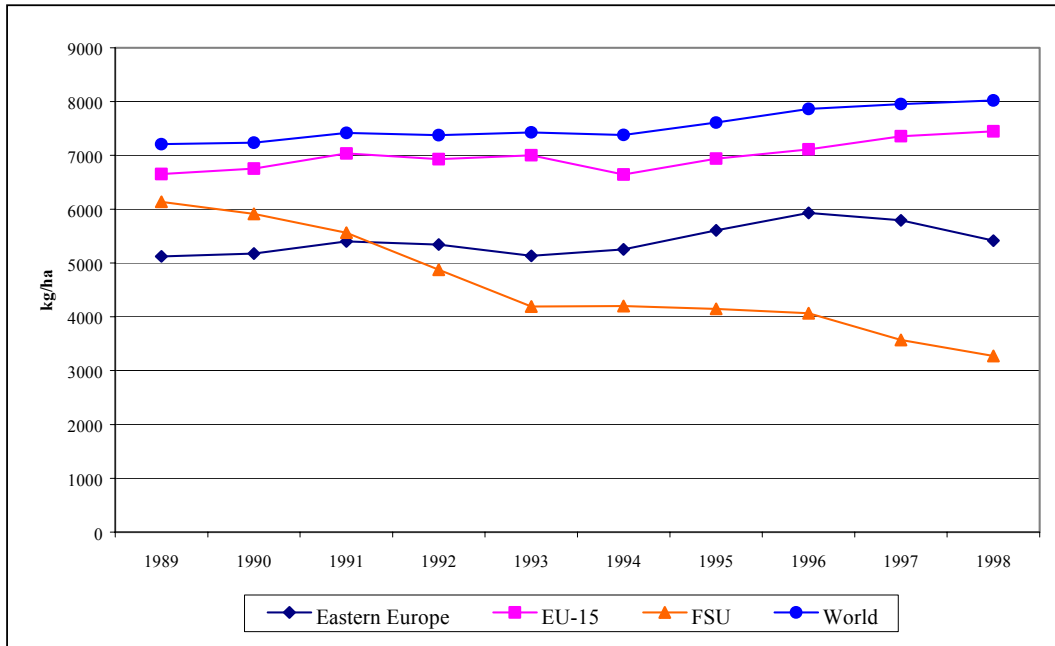
Source: Own calculations

Figure 10. Yields of grape in some Eastern European countries, moving average



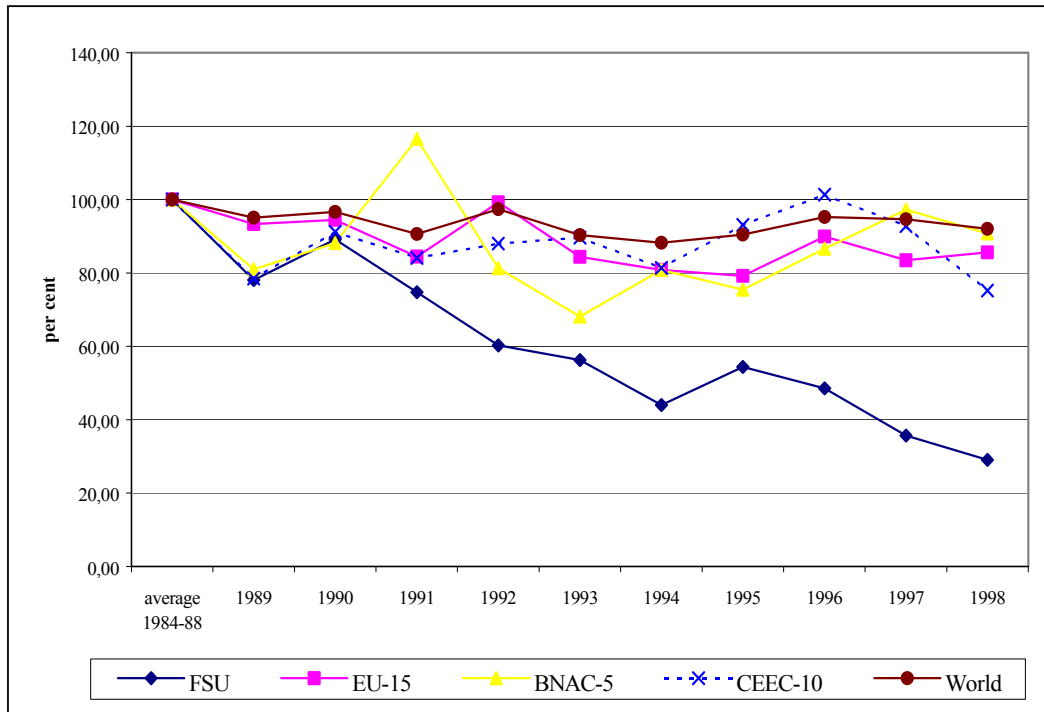
Source: Own calculations

Figure 11. Yields of grape by regions, moving average



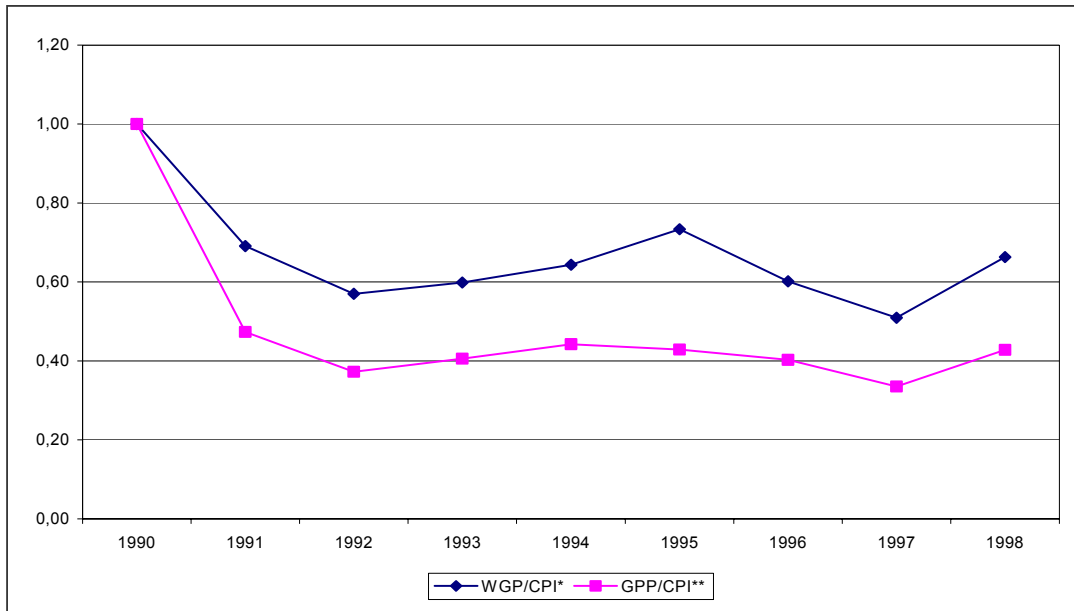
Source: Own calculations

Figure 12. Change in the production of grape by regions



Source: Own calculations

Figure 13. Terms of trade for the Bulgarian wine and grape producers

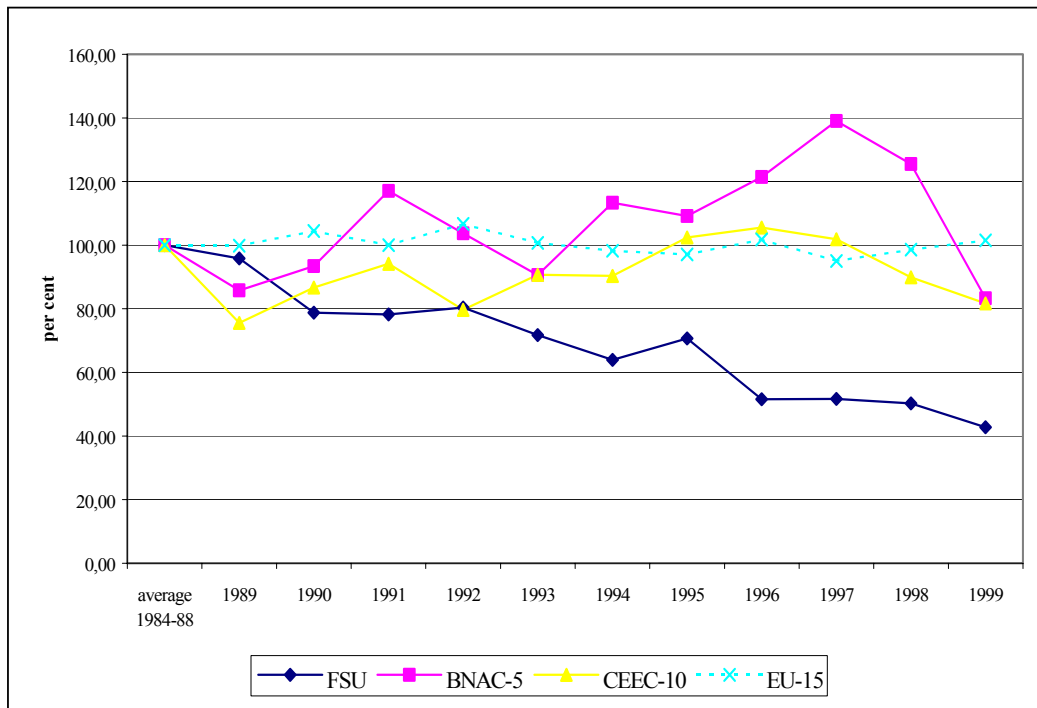


Source: OECD (1999a), NSI

*Ratio of wine producer price (WGP) over consumer price index (CPI)

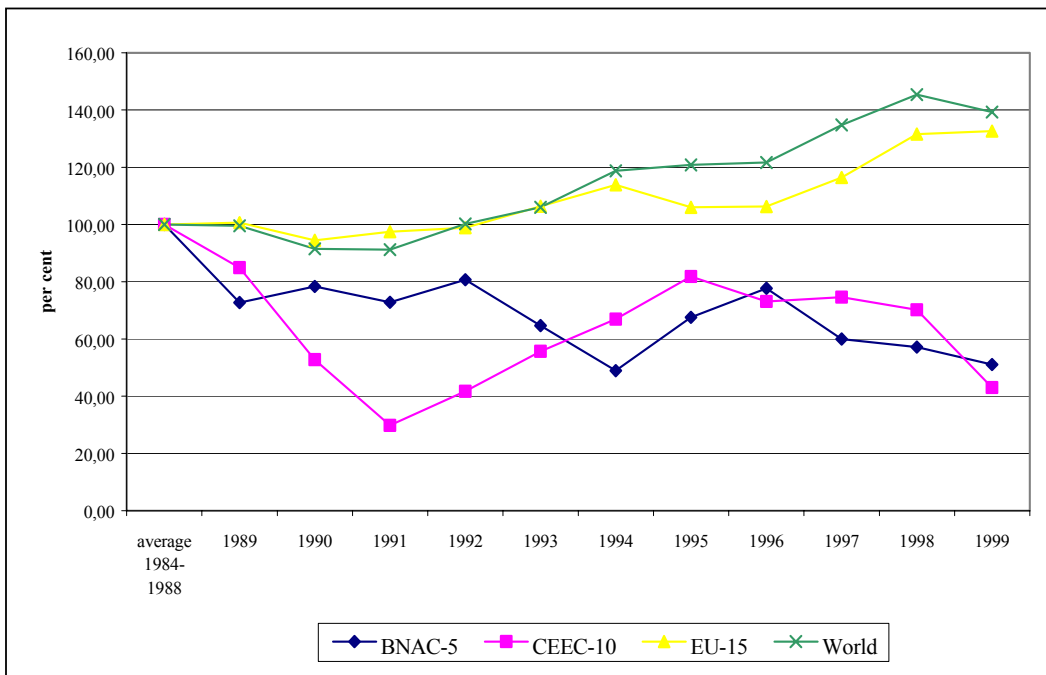
** Ratio of grape producer price (GPP) over consumer price index (CPI)

Figure 14. Change in the share of world production of wine by regions



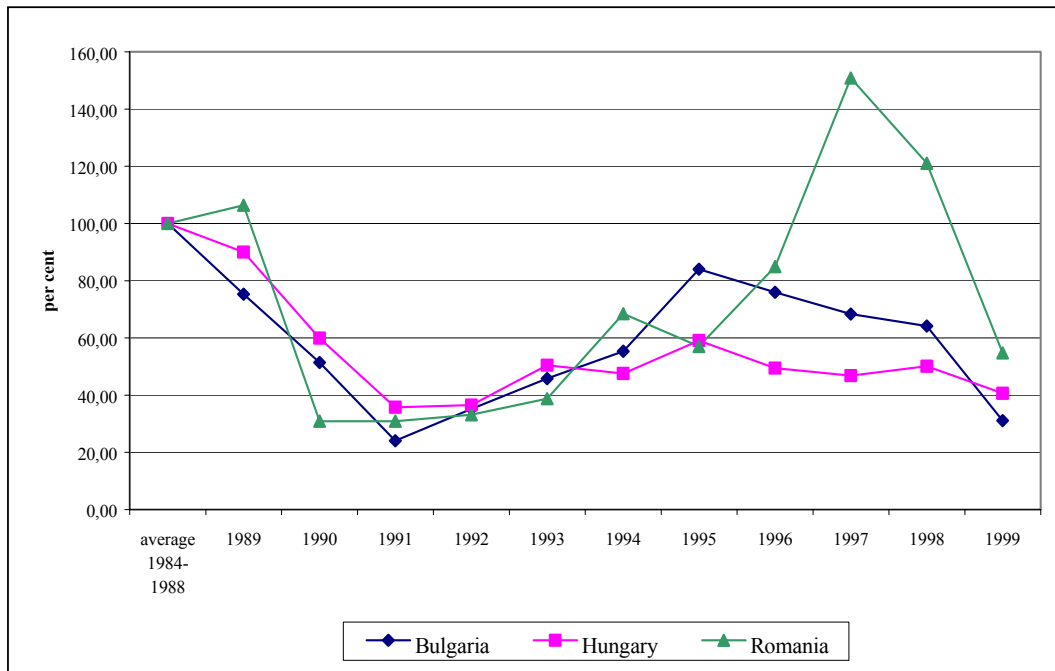
Source: Own calculations

Figure 15. Change in the export of wine (in volume) by regions



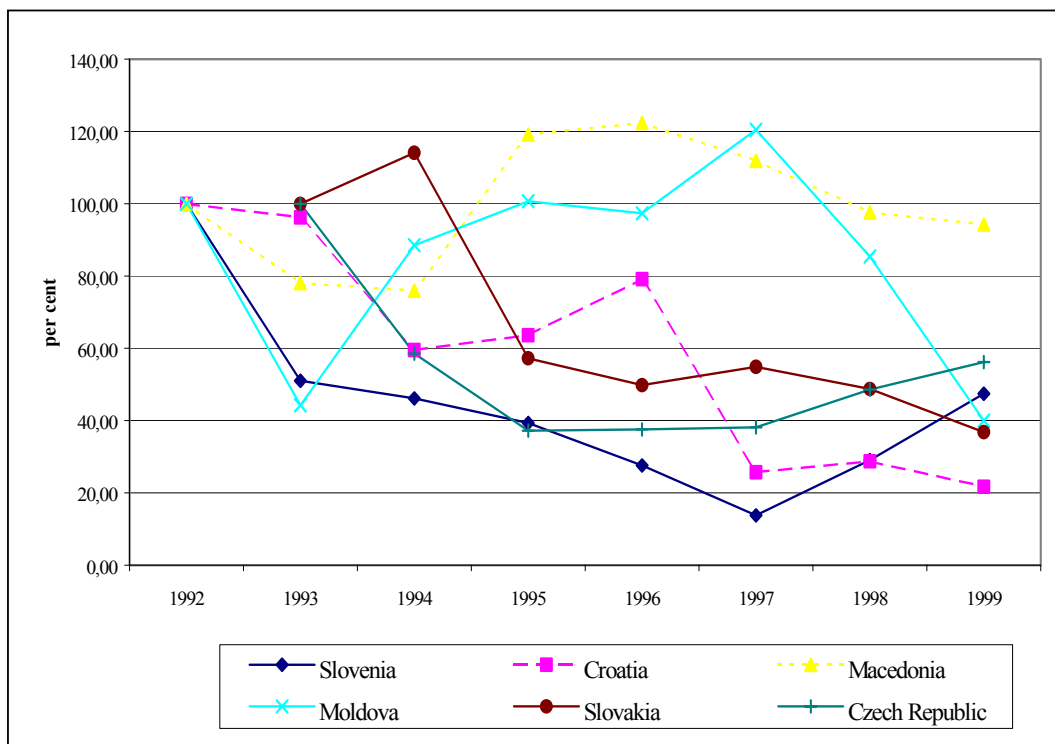
Source: Own calculations

Figure 16. Change in export of wine in volume by countries



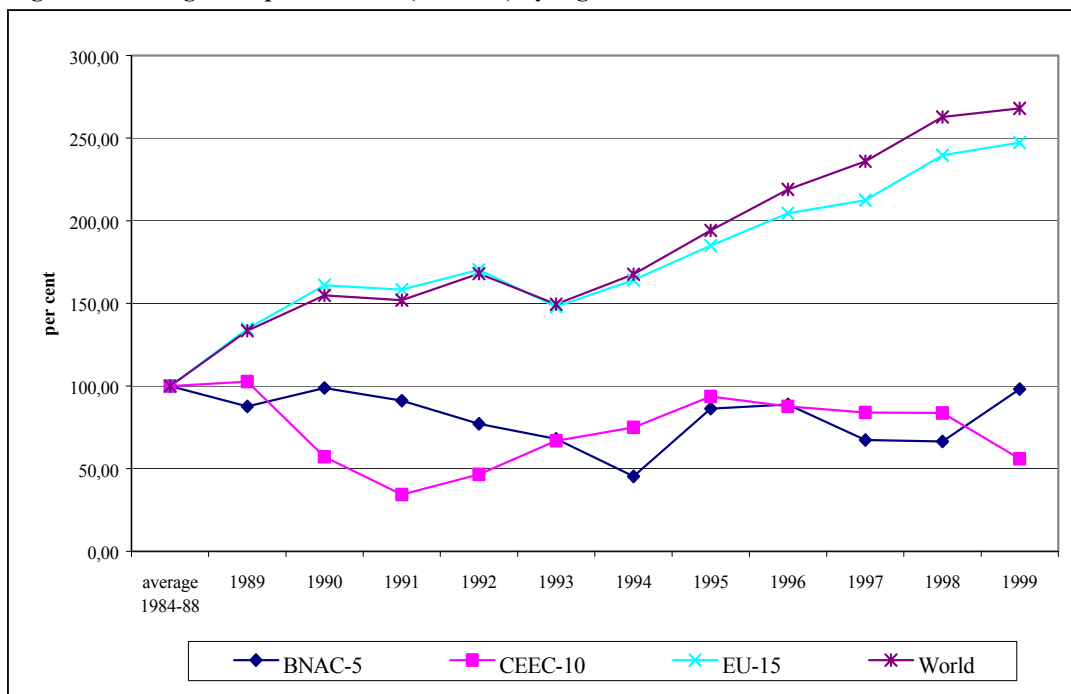
Source: Own calculations

Figure 17. Change in export of wine by countries



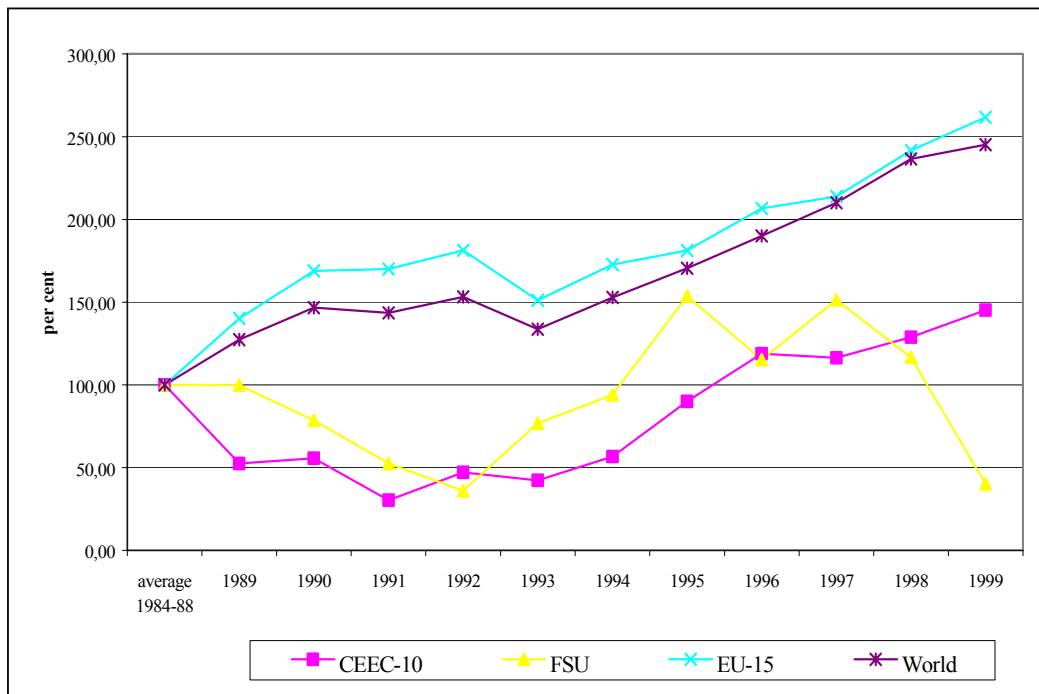
Source: Own calculations

Figure 18. Change in export of wine (in value) by regions



Source: Own calculations

Figure 19. Change in import of wine (in value) by regions



Source: Own calculations