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The European Union's Common Agricultural Policy: Pressures for Change

Situation and Outlook Series

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Agenda 2000 Lays Groundwork for EU Enlargement and WTO Negotiations, But Pressures on the CAP Still Abound

In March 1999 the European Union adopted a reform package—Agenda 2000—that attempts to smooth the process of EU enlargement, ensures that the EU meets its commitments to the Uruguay Round Agreement on Agriculture, and eases the pressures on the CAP budget. In undertaking these reforms, the EU has established its position for the upcoming round of World Trade Organization (WTO) negotiations on agriculture. However, there are domestic market imbalances, WTO constraints, EU enlargement costs, consumer concerns, and CAP budget guidelines, which combine to form continuing pressures on the CAP. Agenda 2000 calls for a review of the reforms; analysis in this report supports the view that further reforms will be needed to address market imbalances.

Agenda 2000 is not the first attempt to reform the CAP. Some of the features of the reforms, notably lowering of prices and direct payments to farmers to offset some of their losses, are extensions of the reforms of 1992. Unlike previous reforms, however, Agenda 2000 attempts to maintain the CAP budget at its present level in real terms for the next 7 years. Analysis presented in this report suggests that in spite of Agenda 2000, high stock levels of several commodities are likely to accumulate because of continued high yields, little or no growth in domestic consumption, WTO constraints on exports, and EU enlargement to the East.

Analysis shows that EU enlargement to include the Central and Eastern European countries (CEEC) of Hungary, Poland, Estonia, Slovenia, and the Czech Republic in 2002 could bring additional budget pressures on the CAP. Enlargement could also exacerbate the surplus problem for some commodities, particularly beef, pork, and rye. But many experts do not believe that these countries will be ready for EU accession until 2006 or later. Furthermore, the acceding countries will likely have difficulty adopting a very large number of EU rules and regulations required to meet minimum quality standards, hence production response to higher prices suggested by the analysis represent the upper bounds.

Agenda 2000 does alleviate the WTO constraint on exports for some commodities. With a lower government purchase price for wheat and expected higher world wheat prices, the EU is forecast to export wheat without subsidy starting as early as 2002. Lower grain prices will also allow the EU to marginally increase pork, poultry, and egg exports without subsidy. EU enlargement could also allow an EU-18 or EU-20 to become more competitive in world markets for beef, pork, and coarse grains but only if the CEEC can successfully adopt all EU legislation and narrow quality differentials by 2002. Implementation by the acceding countries of EU measures demanded by consumers and environmentalists may also restrict their imports of food and agricultural goods.

EU consumer and environmentalists' concerns have resulted in measures that could lead to trade disputes in the future. EU concerns with food safety have been heightened by "mad cow" disease, and, with pressures from political activists and consumers, the European Commission has enacted legislation (labeling products containing genetically engineered material, for example) that has disrupted U.S. exports to the EU. Delays in approving genetically engineered crops have significantly slowed U.S. corn exports to the EU and threaten U.S. exports of soybeans and soybean products. EU consumers are also concerned about the process of food production and have directed their attention to animal welfare issues. The EU recently passed legislation stipulating a minimum space per laying hen that will be phased in over the next few years. The EU Commission has indicated that animal welfare issues should be addressed in the next round of WTO negotiations.

On the whole, the analysis shows that internal market forces, EU enlargement, and upcoming WTO negotiations all put pressure on the CAP largely by undermining its reliance on export subsidies to rid itself of surplus. Until these pressures force significant changes on the CAP, it will continue to depress world markets as Agenda 2000 does not substantially reduce incentives to produce and export agricultural commodities.

The European Union's Common Agricultural Policy: Pressures for Change—An Overview

Provision for the Common Agricultural Policy (CAP) was integral to the agreements that established the European Union (EU) and the CAP has been among the most important EU policies administered and funded in common. Revisions or “reforms” of the CAP have been numerous, in response to dramatic changes in agricultural realities and circumstances since the 1960s. This article contends that the continuing need for revision results significantly from the interventionist nature of the CAP, which manages agricultural prices, precluding automatic market-directed adjustments of production and consumption to changing circumstances. Strong vested interests will continue to limit reforms, allowing revisions only when the immediate political costs of not reforming equal or exceed the costs of reform. [Gene Hasha (ghasha@econ.ag.gov)]

The Importance of the Common Agricultural Policy

The European Union (EU)¹ is the world's largest agricultural importer—and the world's second largest exporter. Agricultural production, consumption, and trade in the EU are strongly influenced by government programs and policies. Over the last 30 years, the Common Agricultural Policy (CAP) has brought about a massive reversal in the agricultural trading position of the EU, transforming the world's largest importer of temperate-zone agricultural products into the world's second largest exporter of food and agricultural products. During the 1980s, U.S. agricultural exports faced increasing competition from subsidized EU exports. The U.S. share of world wheat trade peaked at 45 percent in 1981, after averaging over 40 percent in the previous decade. Since 1989, the U.S. share has averaged less than 27 percent. The EU share of world wheat trade was 21 percent in 1981, but has averaged almost 30 percent since 1989.

Although unsubsidized EU exports of some products have increased in recent years, particularly in times of high prices, the CAP continues to insulate much of EU agriculture from world market forces. This insulation largely exempts EU producers and consumers from adjustments required in the global agricultural sector and increases the adjustments imposed on countries with open agricultural markets. The CAP has significantly affected all countries that depend on agricultural trade, and it remains a dominant influence on international agricultural markets and trade.

¹ The European Economic Community (EEC) was created by the Treaty of Rome in 1957. In 1967, the EEC was integrated with the European Atomic Energy Community and the European Coal and Steel Community to form the European Communities (EC). The Treaty of Maastricht established the European Union (EU) in 1992. The original six member countries were West Germany, France, Italy, the Netherlands, Belgium, and Luxembourg. The United Kingdom, Ireland, and Denmark joined in 1972. Other countries joined subsequently: Greece (1981), Spain and Portugal (1986), and Sweden, Finland, and Austria (1995).

In March 1999, The EU adopted important changes in the CAP as part of a reform package known as “Agenda 2000.” The reforms adopted were less far-reaching than those adopted by the Council of Agricultural Ministers in the previous year, which in turn were less substantial than the original reform proposals of the EU Commission presented in July 1997. Nonetheless, the reforms that were finally adopted are significant. The Commission has identified numerous pressures for CAP reform, which are presented below and considered in greater detail in the articles that follow.

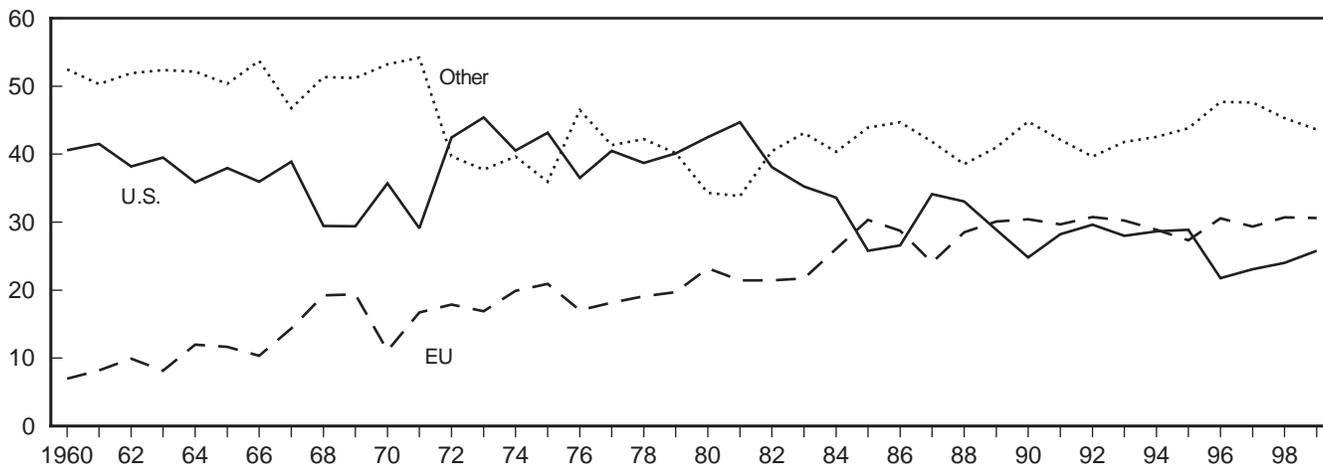
Analyses of Agenda 2000 policy changes presented below suggest that the policy pressures identified will require, eventually, more far reaching reforms than those recently adopted. A lack of immediacy—particularly regarding EU enlargement and a WTO agreement, which are at least a few years away—appears to have diminished appreciation of the longer-term political and economic costs of not adopting more fundamental CAP reforms. The lack of immediacy has thereby limited the scale of politically feasible reforms at this time.

Agenda 2000 is foremost a proposal for EU finances, non-agricultural as well as agricultural. It replaces current arrangements expiring in 1999 with a new financial framework for 7 years through 2006. The foremost focus of Agenda 2000 is the budget challenges presented by enlargement of the EU to include countries in Central and Eastern Europe (CEE) beginning as early as 2002. The prominence of the CAP in Agenda 2000 follows from its role in the EU budget—CAP budget costs amounted to over \$47 billion in 1997 and accounted for about 50 percent of all EU expenditures. The CAP accounted for as much as two-thirds of the budget in the 1980s. Agenda 2000 addresses numerous agricultural problems seen as results of the current CAP. Analysis of Agenda 2000 in this report details the expected growth in EU surpluses. Analysis of EU enlargement outlines the extent to which enlargement is expected to compound EU surplus problems. Agenda 2000

Figure 1

Major Wheat Exporters, Shares of World Trade

Percent



Source: Economic Research Service, USDA.

also seeks to prepare EU agriculture for upcoming WTO negotiations. The analysis below identifies ways in which Agenda 2000 reforms are likely to affect EU positions in WTO multilateral trade negotiations.

The Origins and Essential Character of the CAP

The essential character of the CAP was determined by the circumstances surrounding its inception in the late 1950s. The Treaty of Rome provided for a common agricultural policy that would: 1) guarantee food supplies at stable and reasonable prices; 2) ensure a fair standard of living for farmers, and 3) improve agricultural productivity through technical progress and develop more rational production systems that would employ resources more efficiently. Those goals reflected widespread rural welfare problems, the relative backwardness of agricultural production in many areas, and a perceived need for secure food supplies following shortages that persisted for nearly a decade following World War II. Agriculture also presented a large "agricultural vote," employing a large proportion of the working population in most European countries, over a quarter in France, Italy, and Luxembourg (Bowler, Ian R.). The CAP adopted for the original six members was consistent with the highly interventionist and protective policies previously maintained by the individual members. Those policies reflected the depression conditions of the 1930s and the tight regulations imposed during World War II, although most EU countries had highly protective regimes to support agriculture even before the twentieth century. (Bureau of Agricultural Economics).

The CAP was based on three fundamental principles: 1) free trade within the Community based on common prices, 2) preference for Community produce in Community mar-

kets, and 3) joint financial responsibility. Employing a variety of mechanisms, the original CAP provided support generally by maintaining stabilized internal prices well above world prices for unlimited quantities of most products. CAP mechanisms insulated domestic markets from world market forces, exempting EC producers and consumers from the adjustments that otherwise would have been required. Import levies also provided substantial revenues for the EU budget.

Support regimes varied, but for the major products, including grains, milk products, and beef and veal, support involved variable import levies, unlimited intervention purchasing at guaranteed price levels, and variable export subsidies or taxes as required. Production controls were found necessary as early as 1968 for sugar. By the early 1970s, the variety of other measures adopted included deficiency payments for oilseeds, minimum import prices and purchasing of surpluses for fruits and vegetables, and subsidies for distilling surplus wine.

Changing Circumstances Shape Evolution of the CAP.

During its nearly 40 years, the CAP has achieved much toward its original objectives. Those successes and other dramatic changes in agricultural, political and other circumstances have changed fundamentally the nature of EU agricultural policy deliberations. Most important has been a technological revolution that greatly increased production. Ample EU food supplies have been assured. However, because CAP mechanisms generally control prices, precluding adjustments in production and consumption in response to changing market prices, chronic surpluses also have resulted. Structural surpluses led to significantly changed political circumstances as budget costs increased rapidly and international conflicts arose with other agricultural exporters.

The technological revolution also has brought specialization and concentration in EU agriculture, and four decades of economic growth have greatly reduced the role of agriculture in overall EU income and employment. Farm household incomes also have improved dramatically, equaling or surpassing non-farm incomes in most EU countries. (Buckwell, Allan et al). Collectively, these changes have eliminated the post war “peasant” character of EU agriculture in most regions. Of the CAP’s original objectives, only “reasonable” prices and efficient resource use can be considered still at issue.

Other changes in the circumstances of EU agriculture have shaped changes in the CAP. Three enlargements of the EU have increased the diversity of agricultural conditions and politics. In recent years, public concerns for the environment, food safety, and animal welfare have played a growing role in agricultural policy deliberations and, along with budget costs, have added a negative aspect to the public view of agriculture. The complexity and arbitrary nature of CAP regulations and programs also have generated dissatisfaction, even among farmers.

A strong parallel can be drawn between the EU today and the United States before adoption of the Federal Agriculture Improvement and Reform Act (FAIR) in 1996. Until then, U.S. agricultural policy maintained a strong continuity with policies originally adopted in the 1930s in response to depression conditions and an agricultural structure that was similar in many ways to post-war Europe (Young, C. Edwin and Paul C. Westcott). Modernization radically transformed the structure and productivity of agriculture in the EU and the United States since World War II. Surpluses resulting from the lack of a process allowing market-directed adjustments eventually led both policy systems to introduce production controls. In 1996, the United States abandoned supply controls for major agricultural products and reduced significantly price support for program crops.

The Fundamental Pressure for CAP Reform: Surpluses

High Prices, Technological Progress, and Surpluses. Since the 1960s, the most important change affecting the CAP has been a revolution in productivity that transformed the EU from a large importer of most agricultural commodities to a major exporter of temperate-zone products. High and stable prices have encouraged investment, restructuring, and rapid and continuous adoption of modern production technology. High prices also limited growth in EU demand. Given CAP mechanisms, the inevitable result was the emergence of surpluses. As early as 1969, one-sixth of the EU wheat crop had to be denatured, making it unfit for human consumption, and subsidized for feed use in an attempt to balance supply and demand. By the early 1980s, the EU had large surpluses of most temperate-zone agricultural products and emerged as a major exporter. Since the 1980s, surplus pro-

duction or “market imbalances” and the large attendant budget costs for export subsidies have been identified repeatedly as the fundamental problems prompting numerous reforms of the CAP. The Treaty of Rome’s goal to modernize EU agriculture and increase productivity was fully achieved. However, the lack of mechanisms allowing market-directed adjustments of production and consumption to changing conditions turned technological success into the CAP’s enduring surplus disposal problem.

Budget Costs. When the EU was a net importer of most agricultural goods in the earliest years of the CAP, the EU budget benefited from substantial import levy revenues while the cost of agricultural support provided through high internal prices fell mostly on consumers. Concerned with food security, consumers showed little reaction to high prices. However, the emergence in the 1980s of surpluses for most products presented a new problem—surplus disposal. The EU has disposed of some surpluses through subsidies for extraordinary domestic consumption, but subsidized exports have accounted for the bulk of surplus disposal. Surpluses also made the CAP a very costly policy. Not only did the EU lose import levy revenues, but subsidies required for export have been large because EU prices have been much higher than world prices. EU prices were lowered after 1992, reducing per-unit and total export subsidies, but farmers received direct payments to compensate for lost sales revenues, more than offsetting reduced budget costs for export subsidies. A significant part of the cost of agricultural support was transferred from consumers to taxpayers.

The budget cost of direct payments has increased significantly, accounting for 70 percent of all EU expenditures for market support and direct aids in 1996 and causing total spending on agriculture to increase 28 percent from 1991 to 1997. Benefits to farmers increased much less than budget increases, since direct payments mostly offset reduced prices. EU budget costs for agricultural market support and direct aids remain high, amounting in 1997 to almost 41 billion ECU (over \$46 billion), over half of the total EU budget. Agenda 2000 provides for a CAP budget of only 41.7 billion Euros by 2006, roughly equivalent to current expenditures.² If adhered to, Agenda 2000 will end the growth in the EU agricultural budget.

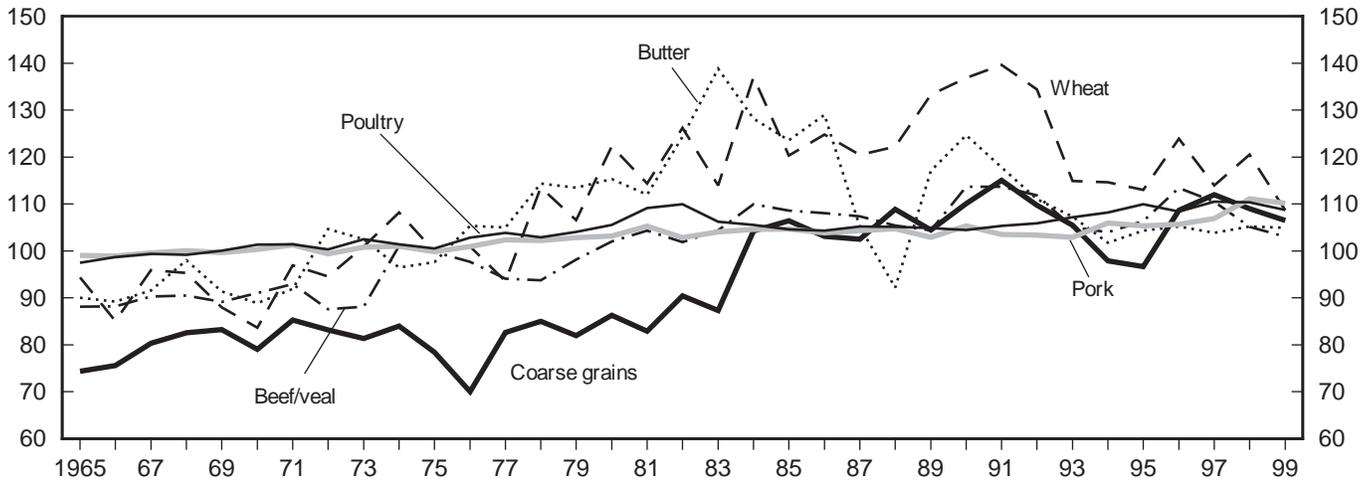
International Relations and Commitments. Also associated with agricultural surpluses was another important change surrounding the CAP—increased conflict among world agricultural exporters. During the 1980s, weak international demand and lack of a production response to changing circumstances in exporting countries led to persistently low international commodity prices. Global market problems were widely attributed to domestic support policies that generated structural surpluses and the subsequent reliance on

² 1 Euro = 1 ECU at its adoption on January 1, 1999. US\$1 = .953 Euro during September 1999.

Figure 2

EU Self-Sufficiency

Percent



Source: Economic Research Service, USDA.

subsidized exports to dispose of them. The EU was the principal source of subsidized exports. The United States adopted significant export subsidies under the Export Enhancement Program (EEP) beginning in 1985, originally as a political and practical response to EU export subsidies.

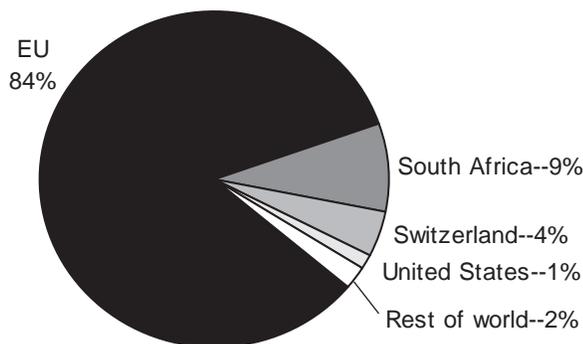
Eventually, in the Uruguay Round Agreement (URA) of the General Agreement on Tariffs and Trade (GATT), the EU and other countries agreed to reductions and permanent limits on subsidized export volumes and total subsidy amounts. The EU still uses export subsidies on a scale vastly greater than all other countries, accounting for 83 percent of world agricultural export subsidies reported to the WTO in 1996 (Leetmaa, Susan E. and Karen Z. Ackerman). The potential for future unsubsidized EU exports is presented in analyses of Agenda 2000 proposals that follow.

Opposition to CAP Reform: Vested Interests

Among the multiple goals originally proclaimed for the CAP, stable and politically acceptable farm incomes have proven to be the paramount concern of EU policymakers. The political sensitivity of farm incomes results from the reality that the share of the EU civilian work force employed in agriculture has always been far larger than the share of gross domestic product (GDP) attributable to gross value added in the agricultural sector. Agriculture employed 12 percent of the EU-9 workforce in 1968 but accounted for only 6.3 percent of GDP. Without supplemental non-farm income or agricultural transfers, the incomes of farm households would have been significantly less than those of non-farm households.

Figure 3

WTO Export Subsidy Notifications (Value), 1996



Source: Economic Research Service, USDA.

The role of agriculture in total EU income and employment has declined dramatically since the inception of the CAP. The EU farm population has declined an average of 3 percent annually since 1968, although the decline has been more rapid in recent years, 4.5 percent annually from 1986 to 1996. However, agriculture's contribution to GDP also has continued to decline, by more than employment in percentage terms. EU agriculture employed just over 5.1 percent of the EU-15 work force in 1996, but accounted for only 1.7 percent of GDP. Nonetheless, EU farm household incomes, including agricultural subsidies and income from non-agricultural activities, have been raised to parity or better in relation to non-farm incomes in almost all EU countries. Increased off-farm employment has played an important role, but the contribution of transfers associated with the CAP remains prodigious.

EU budget expenditures on agriculture alone are large, but budget expenditures do not include transfers from con-

sumers through high prices. The Producer Subsidy Estimate (PSE) calculated by the Organization for Economic Cooperation and Development (OECD) is an indicator of the value of all monetary transfers to agriculture resulting from agricultural policies in a given year, including market price support resulting from domestic prices that are above world levels. In 1998, the total PSE for all products in the EU was valued at almost US\$130 billion, compared to almost US\$47 billion for the United States. OECD calculations attributed 45 percent of all EU producer receipts to policy transfers, compared to 22 percent in the United States (OECD). Policy transfers would account for a much larger proportion of farm income net of production costs.

While changing circumstances have produced continuing pressures for change in the CAP, its beneficiaries have consistently and effectively resisted reforms that would significantly reduce the CAP's large policy transfers to agriculture. Even though the EU agricultural population has declined, the farm population still constitutes a critical "agricultural" vote in many EU countries and the large benefits accruing to farm interests have made them active political partisans in most EU countries. CAP benefits have become progressively more concentrated on a smaller percentage of farmers that are relatively wealthy, reducing public support for the CAP as a source of assistance to needy farmers. The relatively smaller benefits accruing to a larger number of small farmers remain important to those farmers, however, sustaining important political support for the CAP.

The benefits of the CAP (and the EU) are, for some countries, financed by other member countries through the EU budget. Those national advantages associated with the CAP are important political elements in all CAP reform deliberations. EU programs benefiting less-developed rural and regional areas are cornerstones of EU policy and the CAP. Contributions to the EU budget are based partially on GDP, also assuring that poorer EU countries benefit from EU programs, including the CAP. The Mediterranean countries and Ireland have been the principal beneficiaries of CAP and other EU programs. However, more developed countries with relatively large agricultural sectors (e.g. France, the Netherlands, and Denmark) also benefit.

Where there are winners, there also are losers who generally support CAP reforms. Germany, and, to a lesser extent, the United Kingdom have been the principal net contributors to the EU budget. Germany's political position as principal EU paymaster has been complicated by its particularly strong political need for high prices that results because German farms are relatively small and German non-farm incomes are relatively high. Of course, EU livestock producers and agricultural processors are disadvantaged by high feed and raw product prices. Less tangible, but always far from unimportant in the political balance is the CAP's role as the principal "common" policy of the EU, as reflected in the CAP's claim on the EU budget. The integrity of the CAP has been

equated by some with the integrity of the essential political fabric of the EU itself.

A Selected History of CAP Reforms

Surpluses and growing budget costs have provoked numerous CAP changes, adjustments, and special measures. These adaptations generally have been referred to as "reforms," although not everyone agrees that the changes necessarily were for the better. Pressures for reform have been strongly associated with conditions on world markets. Global shortages in the mid-1970s accompanied by high world prices actually facilitated significant increases in support prices for some EU products, most notably grains, that were not reversed when world prices returned to normal levels. Citing serious problems with agricultural surpluses and budget costs and the chaos caused by subsidized exports in the early 1980s, the EU joined other countries in the Punta del Este declaration of the GATT (1985) and later in OECD Ministerial declarations (1987) in calling for multilateral reductions in agricultural support and increased market orientation in agricultural policies. Significant CAP "reforms" have included the following:

- 1968:** Quotas for refined sugar were introduced.
- 1969:** With the CAP hardly fully established, the EU was compelled to manage surplus wheat production by initiating a program to denature wheat, making it unfit for human consumption, and to subsidize its use as feed. Wheat surpluses proved to be a recurring phenomenon.
- 1982:** A principle was adopted that producers should accept less support beyond some threshold production level. "Guarantee thresholds" were adopted for milk, sugar, cereals, rape, and tomatoes for processing. Small support price reductions were indicated but not mandated once production exceeded threshold levels for 3 years.
- 1984:** By the end of 1983, EU stocks of skim milk powder (SMP) totaled almost a million tons (983 kmt), and stocks of butter were only somewhat smaller (853 kmt). The EU was compelled to impose milk delivery quotas. Originally considered temporary, EU milk quotas are still in effect.
- 1986:** Milk quotas were reduced and regulations were imposed on intervention purchasing of milk products and meat, effectively reducing the support price level during periods of serious surpluses.
- 1988:** Again citing growing 'structural' surpluses, rising budget costs, increasing inequalities among farmers in terms of CAP benefits, and endangered international relations, the EU adopted its first general program to deal with 'structural' (i.e. persistent) sur-

pluses (European Commission, 1988). Agricultural 'stabilizers' were adopted for about half of all agricultural production, neglecting only beef among major commodities. Stabilization measures varied by product, but all established a 'maximum guaranteed quantity' (MGQ) of production beyond which support would be automatically reduced. Budgetary discipline was established by limiting the percentage increases in CAP expenditures to no more than three-fourths of the annual percentage increase in the EU's GDP. Effective intervention prices were reduced by stricter rules governing the quantity and minimum quality qualifying for intervention purchasing, shorter fixed periods during which agencies were obligated or authorized to make purchases, and purchase prices below official 'intervention' prices. The Commission declared that "for most products, open-ended buying-in (unlimited government support purchases) is a thing of the past."

1992: Reforms commonly referred to as the MacSharry reforms, after the agricultural commissioner who championed them, represented a major departure for the CAP. The reforms constituted genuine reform in that the need for lower prices finally was addressed. Reforms affecting 75 percent of production were introduced progressively from 1993. Cereal prices were reduced 30 percent, beef prices 15 percent, and dairy product prices 5 percent. Other important changes also were adopted. EU reliance on supply controls (already employed for dairy and sugar) was broadly extended to include mandatory land set-asides for arable crops. The reforms also included a major shift toward support through direct payments and reduced reliance on market price support. Farmers received permanent compensatory payments linked to land use for arable crops to compensate for price reductions. Growing public concern for the environmental impacts of agriculture was addressed for the first time with payments to induce farmers to adopt environmentally favorable production methods.

Although the role of high prices was often recognized as the root cause of surpluses, the political pressure to maintain farm incomes, without significant exception, has always proved politically decisive in CAP reform deliberations. Policies allowing market-directed adjustments in agriculture have never been proposed. Throughout all reforms to date, the CAP has continued to rely on bureaucratic management of fixed prices and progressive extension of production controls.

Additional Reform Pressures

Enlargement. The EU appears firmly committed to the eventual accession of many of the countries of Central and Eastern Europe (CEE) to full membership in the European Union. Enlargement is considered a geopolitical necessity

and is expected to provide long-term economic benefits. The release of Eastern Europe from dominance by the former Soviet Union in 1989, the reunification of Germany in 1990, and anticipation of accession of the CEE countries have helped to recapture and reinvigorate the goal and spirit of European unification that had languished during the economic doldrums of the 1980s.

Analysis of enlargement presented elsewhere in this report details the changes in incentives that will result for CEE farmers and the attendant impacts on markets and the EU budget. The expected market impacts are mixed. Enlargement appears likely to aggravate the budget and surplus disposal problems for some commodities while providing some relief for others. The expected impacts on EU agricultural markets are now much less than they were when negotiations began a decade ago. Nonetheless, the budget costs of enlargement for compensatory payments and various rural development schemes are likely to be large.

A Negative CAP Image. The European Commission considers the CAP to have a bad public image on several accounts. The bulk of CAP benefits today accrue to larger, relatively wealthy producers, undermining the CAP's image as a source of assistance to the deserving needy. The public also is aware that high prices have encouraged intensive agricultural practices with seriously adverse environmental impacts. Finally, in response to a general aversion among farmers and the public to the complexity and bureaucratic rigidity of CAP regulations and administration, the Commission included in Agenda 2000 provisions for "a simpler, more understandable agricultural policy" that allows for some decentralization in program decision making in the allocation of EU direct payments.

Emerging Issues. Issues relating to the safety and quality of food and to acceptable methods of agricultural production affecting the environment or animal welfare are considered below. These issues have a growing role in EU agricultural policy deliberations and may lead to new policies affecting agricultural production, consumption, trade, and incomes. Such regulations may significantly affect EU production costs, decreasing EU competitiveness or decreasing EU demand through price increases. How compensation payments to farmers associated with such regulations affect markets and trade will be a major concern for other countries.

The Agenda 2000 proposals and various supporting documents have strived to justify significant direct payments to farmers, regardless of ancillary impacts. Principal among the proposals is a claim for the multifunctional nature of agriculture that requires remuneration to farmers for their role as stewards of the environment and the rural landscape. The Commission has declared that "the fundamental difference between the European model and that of our major competitors lies in the multifunctional nature of Europe's agriculture and the part it plays in the economy and the environment, in society and in preserving the landscape, whence the need to

maintain farming throughout Europe and to safeguard farmers' incomes." (European Commission 1997). Most other developed countries, including the United States, are unlikely to accept that "multifunctional" objectives for agriculture are unique to Europe. The successful pursuit of non-trade objectives in agriculture with minimal market and trade distortions can be well documented in non-European countries.

CAP Reform: The Fundamental Dilemma

The Commission has framed the current discussion on CAP reform by declaring the need to "provide a solid basis for ensuring the future development of the EU's agricultural sector." EU policy makers and EU agriculture face at least two realities that shape and limit choices for the CAP in the future. The first is the certainty that productivity in EU agriculture, like productivity in the agricultures of the United States and most developed countries, will continue to increase more rapidly than domestic demand for agricultural goods, ensuring ever increasing surpluses. Globally, agricultural productivity increases in excess of world agricultural demand have led to a decline in real world prices for most commodities. A reduction in EU prices also would cause a temporary reduction in the growth of resource use and production, but increasing productivity would continue to increase production from a lower level.

Expanding exports can provide an outlet for increasing surpluses, offsetting reductions in agricultural employment or production limitations that otherwise would be required and maintaining incomes for a larger farm work force without additional subsidies. However, the second reality facing the EU is that current WTO commitments preclude continued reliance on export subsidies to dispose of inevitable surpluses with internal prices above world prices, and future WTO negotiations may further restrict export subsidies.

Some may consider the severe budget constraints placed on the CAP by Agenda 2000 to be a third reality—CAP spending limits through 2006 are not much greater than current expenditures. That those limits to CAP financing are immutable is not necessarily certain, but budget concerns are the principal issue in Agenda 2000 and pressure appears strong for CAP spending limits that allow very limited growth. On the other hand, CAP budget costs account for less than one-half of one percent of the EU's GDP. In any case, EU agriculture is left with two basic choices.

✱ *An Agriculture Competitive on World Markets with Expanding Exports.* The EU may lower prices to world market levels, allowing surplus production to be exported without concern for WTO limitations. Expanding exports would offset production restrictions or reductions in agricultural employment that otherwise would be required. As the Commission has argued, long-term prospects for agricultural exports are good. Price reductions adopted in 1992 already have allowed the EU to expand unsubsidized exports of wheat, poultry, pork, and cheese, at least

in years of relatively high world prices. Negative impacts of lower prices on EU farm incomes could be ameliorated by increased direct payments, given the political will for adequate budget support. Uncertainty about the stability of political support for direct payments understandably causes many farmers to resist lower prices. Of greatest concern to other countries is the extent to which EU direct payments are decoupled from production decisions, limiting impacts on markets and trade.

✱ *Managed Agricultural Production and Prices with Limited Exports.* The CAP can keep prices above world market levels by imposing ever more restrictive production controls. In the longer run, employment in agriculture and growth in agricultural incomes will be lower without expanding exports unless government subsidies are significantly increased. Agricultural processing industries also will be limited by high input costs and export subsidy restrictions.

Taking a longer term view in its Agenda 2000 proposals, the Commission opted to move toward a more competitive EU agriculture, building on the principles established in the 1992 reforms. In its Explanatory Memorandum, the Commission declared that "a future in high prices, protectionism and bureaucratic steering of production [will lead] to loss of international markets, falling home consumption and, as a result, declining production in Europe. This model, if it can be called that, may offer short-term comfort but means inevitable decline in the longer run."

Analysis of Agenda 2000 reforms indicates the current reform can only be considered temporary, and at best another step along the uncertain path to a more competitive EU agriculture. Most importantly, the CAP changes already adopted and the Commission's earlier stronger proposal retain a system of managed prices, with no provision for open market-directed adjustments of production and consumption. The limits to economic liberalization inherent in the proposals are clear in the Commission's declaration that the 'European Model of Agriculture' is a "competitive agriculture sector which can *gradually face up* [emphasis added] to the world market without being over-subsidized, since this is becoming less and less acceptable internationally." The Commission's traditional concern for farm incomes is clear in its observation that "seeking to be competitive should not be confused with blindly following the dictates of a market that is far from perfect. The European model is designed to safeguard the earnings of farmers, above all keeping them stable, using the machinery of the market organizations and compensatory payments." The Commission's commitment to market-oriented agriculture clearly remains limited.

In the turn of political events, the momentum toward a competitive agriculture that would have been attained by the Commission's proposals was twice reduced before a final agreement was reached in March 1999 at the European Council in Berlin. A review of the history of CAP reforms

CAP Basics

The following are brief and simplified descriptions of selected important Common Agricultural Policy (CAP) mechanisms:

Arable Crops—Combined with price support for some crops (see cereals), farmers receive direct payments for the cultivation of cereals, oilseeds, protein crops, and potatoes grown for starch in return for compliance with area set-aside requirements.

Compensatory payments—Farmers receive a direct payment for each hectare planted, with oilseeds receiving a much higher payment than cereals and set-aside land receiving an intermediate amount. A limit on total payments is imposed at regional levels, which can reduce per hectare amounts to all farmers. Durum wheat receives a special per hectare payment in addition to compensatory payments. Under Agenda 2000 reforms, payments for oilseed and set-aside area will equal payments for cereals beginning in 2002. These direct payments were called “compensatory” because they were provided in the 1992 reforms in compensation for significantly decreased intervention support prices.

Compulsory set-aside—Farmers are required to leave idle a minimum percentage of their land as a condition of receiving compensatory payments. Set-aside requirements are determined annually in response to market conditions. Set-aside land can be used for production of certain non-food crops. Small farmers producing less than 92 tons of cereals are exempt from set-aside requirements.

Voluntary set-aside—Farmers may voluntarily idle land beyond compulsory requirements and receive the full set-aside payment. Regulations for voluntary set-aside vary by member state.

Cereals—The CAP supports cereals prices by removing supplies in excess of domestic demand through intervention purchasing and the provision of subsidies for export.

Target price—A designated “appropriate” price level for all grains. The target price is not employed in any CAP mechanisms.

Intervention price—the price at which wheat, barley, maize, rye, sorghum, and durum wheat are purchased at intervention, subject to minimum quality

standards. Adjustments are made for quality. Minimum standards for wheat exclude feed wheat from intervention. Intervention buying for barley effectively supports feed wheat, oats, and other minor grains indirectly, each obtaining a price in the market reflecting its feed value relative to barley. Monthly increments are added to the intervention price to cover storage costs and insure orderly marketing over the season.

Maximum duty paid import price—155 percent of the intervention price, including monthly increments. Import levies are fixed biweekly for six categories of cereals equal to the maximum duty paid import price minus a representative c.i.f. import price at Rotterdam. Before being abolished in 1995 as part of Uruguay Round WTO commitments, **variable import levies** were calculated daily from fixed minimum import prices (**threshold prices**) and the lowest available market prices.

Export “restitutions” or refunds—Export subsidies paid to bridge the gap between world prices and the higher prices in EU internal markets. Export refunds are fixed weekly either as offers at fixed rates or through a tendering process. The provision of export subsidies also serves to support the price of cereals and other products by removing surplus supplies from EU markets before prices are reduced to intervention levels. These export subsidies have been called “restitutions” because they are seen to compensate traders for the high internal cost of exportable supplies.

Oilseeds—EU support for oilseeds is limited to compensatory payments. Oilseed prices are not supported through intervention or export subsidies. Significant separate programs support olive oil.

Maximum guaranteed area—In correspondence with the GATT Panel Agreement of 1992, EU compensatory payments for oilseeds are limited to 5.482 million hectares. A minimum 10 percent set-aside is required to receive payments. If plantings exceed that limit, payments are reduced cumulatively until plantings are within the limit. Set-aside land can be planted to oilseeds for industrial purposes up to a maximum production of 1 million tons of soymeal equivalent.

Projected reference price—The EU Commission's forecast for world oilseed prices that serves as the basis for determination of the appropriate compensatory payment for oilseeds. Oilseed compensatory payments are made in two installments, the second of which can be adjusted when the actual world price differs significantly from the Commission's preliminary estimate. This reference price is eliminated in 2000 under Agenda 2000 reforms.

Sugar—The EU provides high prices through guaranteed intervention for refined sugar. Production is subject to quotas. The principal "A" quota is augmented by an additional but much smaller "B" quota for which a reduced price is guaranteed. Export subsidies are provided for A and B sugar not consumed domestically, but production beyond the A and B quotas ("C" sugar) must be exported without subsidies.

Dairy—The EU supports milk prices through intervention buying of the principal milk products and the provision of export subsidies for dairy products. Significant subsidies also are provided for extraordinary domestic consumption of butter and skimmed milk powder (SMP), including feeding of SMP to animals. Because the bulk of EU beef production is a joint product with milk in dairy operations, support for beef also provides significant support for dairy operations.

Delivery quotas—Since 1984, producers have been subject to quotas for milk deliveries and sales for direct consumption. Significant penalties are imposed on individual producers if quotas are exceeded.

Intervention milk price equivalent—The price of liquid milk that is indirectly supported by intervention buying of butter and SMP.

Private storage aids—Subsidies paid to ensure orderly marketing over the marketing year.

Beef and Veal—The EU supports beef prices through intervention subject to specific market conditions. Storage aids are provided to manage seasonal fluctuations, and export subsidies are provided for disposal of surplus production. Producers also receive direct payments.

Normal intervention—Intervention purchasing occurs by tendering processes when the EU market price for a particular category of beef is below 84 percent of the intervention price and prices for the same category are below 80 percent of intervention in an individual member state. Normal intervention is limited to 350,000 tons in any year. Normal intervention buying will be eliminated by Agenda 2000 reforms; ad hoc intervention is still provided for at the discretion of the Commission.

Safety-net intervention—Extraordinary intervention purchasing when prices are 78 and 60 percent below intervention prices in the EU and an individual member state, respectively. No limit is imposed on safety-net intervention.

Private storage aids—Subsidies provided on the condition that a quantity be stored for a designated time in order to deal with seasonal and other market disruptions. Agenda 2000 reforms give a significantly enhanced role for storage aids in management of the beef market.

Headage payments—Subsidies paid for male animals at 10 months and 22 months of age, provided the stocking density is 2 livestock units per hectare or less.

Suckler cow premia—Paid for retention of suckler cows for 6 months, if the stocking density is 1.5 livestock units per hectare or less. These premia provide support for beef production without providing support to dairy.

Pork and Poultry—The EU provides export subsidies to compensate for high internal cereal feed prices and aids for private storage are provided for pork, but no support through intervention is provided.

makes clear that policy adjustments always have been measured, and generally not much greater than required to deal with immediate problems. The fact is that the 1992 reforms were largely successful, and current EU surplus and budget problems are less severe than those that historically have triggered significant reforms.

Implications for WTO Negotiations

In the Uruguay Round of multilateral trade negotiations, the EU failed to enter into negotiations with a clearly established and practical approach to trade liberalization issues, reducing its eventual influence over the final agreement. Nonetheless, the EU's tenacious position was clearly conditioned by the significant CAP reforms of 1992, which were achieved at great internal political cost. Expecting a continuing trend toward greater liberalization of international agricultural trade, the Commission sought to have CAP reforms that could establish a unified EU position and send a clear signal to other countries concerning the concessions that the EU is prepared to make. The Commission has maintained that "Agenda 2000 is not an opening bid for the WTO negotiations, but rather the policy with which the outcome of these negotiations must be compatible" (Agra Europe Magazine, April 23, 1999).

It is likely that the CAP reforms recently adopted will affect EU negotiating positions, although other countries are not likely to accept them as a blueprint for the next multilateral trade agreement. Analyses of the ways in which Agenda 2000 reforms will condition EU positions in WTO negotiations are presented below. WTO negotiations heighten the significance of agriculture's political strength relative to non-agricultural political forces. EU recalcitrance in agricultural negotiations could be seen as an impediment to the EU's non-agricultural objectives. Additional changes in the CAP will occur when the political and economic costs of not changing it exceed the costs of change.

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An Analysis of Agenda 2000

The European Commission's Agenda 2000 agricultural reforms will have little impact on U.S. agriculture. The reforms will continue to move the EU away from price support mechanisms, but will not eliminate the EU's surplus production problems. For most commodities, the Agenda 2000 reforms do not appear to be sufficient to make the EU competitive on world markets. Therefore, the EU will probably continue to find it difficult to export above its Uruguay Round commitments for most commodities. [Susan Leetmaa (sleetmaa@econ.ag.gov) and Jason Bernstein (jasonb@econ.ag.gov)]

For the past 2 years, the European Union (EU) has been contemplating agricultural policy reform. At a summit meeting in Berlin, the European Council, the heads of state of the countries that make up the EU, agreed on a reform package on March 26, 1999. The reform agreement, Agenda 2000, is a 6-year (2000-2006) financial package that includes agricultural policy reforms and is designed to ease the enlargement of the EU to Central and Eastern Europe (CEE) and prepare for World Trade Organization (WTO) negotiations. Agenda 2000 includes reforms of the arable crops (grains and oilseeds), dairy, and beef sectors. The reforms will shift the EU further from price supports to direct payments and modify supply control measures. The agricultural policy reforms that were finally adopted were considerably less substantial than those originally proposed by the European Commission in July 1997.

Analysis of Agenda 2000 suggests that when the current package is implemented, most EU agricultural commodities will continue to be uncompetitive in world markets, as EU prices will continue to be above world market prices. Thus, the EU will continue to need subsidies to export most of its agricultural products, and the volume of its exports will be constrained by its WTO commitments on subsidized exports.

EU Farm Policy and Agenda 2000

Until the EU's 1992 reform of its Common Agricultural Policy (CAP), high internal prices provided the majority of income support to farmers. The 1992 reform lowered EU support prices, supplementing farmers' income with direct payments, and imposed a land set-aside for supply control. Agenda 2000 builds on the 1992 reforms by further reducing prices for some commodities while compensating producers for half of the price decline through direct payments.

Agenda 2000 was originally proposed in July 1997 by Franz Fischler, the EU farm Commissioner. The European Commission revised the original proposals and EU farm ministers further revised Agenda 2000 on March 11, 1999. The farm ministers' proposals were less ambitious than the Commission's because they phased in the price cuts. The Agenda 2000 package that was finally approved by the

European Council was even more watered down than that of the farm ministers, calling for smaller cuts in support prices and delaying the implementation of dairy reforms.

The final agreement calls for:

- ✱ reducing the grains support price 15 percent (18 euro/mt, down from Fischler's 20 percent, 24 euro/ton), to be phased in over 2 years and to be partially offset by an increase in direct payments (9 euro/ton);
- ✱ reducing direct payments to oilseed producers by 33 percent over 3 years, equaling the grains payment in 2002 (originally no phase-in and a 28-percent cut);
- ✱ setting the base rate³ of the required land set-aside for arable crops at 10 percent during 2000-2006 (base rate was set at zero in original proposal);
- ✱ reducing the support price for beef 20 percent to 2,224 euro/ton (down from 30 percent originally to 1,950 euro/ton) to be phased in over 3 years and partially offset by direct payments;
- ✱ delaying dairy reform until 2005/06 (original proposal called for a 10-percent decline in price, and the most ambitious proposal called for a 15-percent price decline to be in place by 2003);
- ✱ increasing the dairy quota 1.2 percent in the first 2 years, with the increase going to specified deficit countries and starting in 2005, increasing the quota an additional 1.2 percent over 3 years for the remaining countries. (A 2-percent quota increase was originally proposed to be allocated to young farmers and farmers in mountainous regions);
- ✱ fixing total agricultural spending for 2000-2006 at 40.5 billion euros in real terms (originally the budget was not fixed).

³ The base rate is the default set-aside rate. To change the set-aside rate from the base rate, the EU member countries would have to agree on a new rate.

Analysis of Agenda 2000

The impact of Agenda 2000 on the European agricultural sector was analyzed using the ERS European Simulation Model (ESIM). ESIM is used in formulating the official USDA agricultural baseline projections for the EU. The Agenda 2000 scenario is compared to the 1999 USDA baseline projections, which do not impose Agenda 2000.

Because the results are compared to USDA baseline projections, it is important to understand the underlying assumptions that were made in developing the baseline. The baseline assumes that the EU will use unreformed CAP mechanisms to meet its limits on subsidized exports. For grains, the key policy mechanism has been the land set-aside to constrain surplus production. Increasing EU grain yields have generated large grain crops. Therefore, the set-aside rates are higher in this baseline than in past baseline forecasts, from 5 percent in 1998/99, to 10 percent in 1999/2000, to 15 percent from 2000/01 to 2002/03, and then to the maximum of 17.5 percent from 2003/04 for the remainder of the baseline.

The baseline assumes that the EU will not increase intervention purchases and accumulate stocks beyond the historical average level. Accumulation of intervention stocks is viewed as a short-term strategy for dealing with excess grain supplies. For grains, it is assumed that any production in excess of intervention purchases and on-farm use that cannot be exported will depress the internal market price and dampen output. Therefore, to prevent large accumulation of intervention stocks, market prices were allowed to fall as much as 15 percent below current intervention levels for wheat and barley in the baseline, and up to 25 percent for other coarse grains. In the actual baseline projections, however, domestic market prices for these commodities rarely fell that far. The price of wheat fell as much as 2 percent below intervention, but averaged 1 percent below intervention. The barley price averaged 4 percent below intervention, falling to 15 percent only once. While the price of other coarse grains averaged 17 percent below intervention and reached a low of 19 percent below intervention, stocks were allowed to increase above historic highs.

Unsubsidized export markets for the EU are possible but only when the world price is equal to or greater than the average EU price. In the baseline the EU price for wheat falls below the world price, allowing unsubsidized exports of wheat to begin sometime in 2002/03. For pork and poultry, the baseline assumes that market prices adjust to clear the internal market and that more than half of all EU exports of pork and poultry are unsubsidized.

Continued limited intervention for beef, a shrinking dairy herd (due to yield increases and the dairy quota), and measures to encourage less intensive production methods are assumed to limit beef production. To prevent surpluses from accumulating in the face of lower consumption, the baseline

assumed that the EU imposed price and other reforms to align beef supply and use without allowing stocks to exceed historic highs. The price of beef had to fall as much as 19 percent below intervention to keep stocks from exceeding 800,000 tons.

Potential Impact of Agenda 2000

Arable crops. Under the EU's Agenda 2000 proposals, EU grain production would increase above USDA's baseline projections. The baseline analysis assumes a land set-aside of 15 percent for 2000-2002 and 17.5 percent for the remainder of the projection period. The 10-percent set-aside requirement will make more land available for production than was assumed in the baseline. However, grain yields are expected to be slightly lower than baseline projections, due to the 15-percent cut in price.

Agenda 2000's impact on grains is contingent on world grain prices at the time of the reforms. Based on USDA grain price projections used for USDA baseline analysis, the EU grain intervention price would be below U.S. wheat prices but above the U.S. prices for corn, barley, and oats. This would likely cause the internal EU wheat price to move above the intervention level, since EU wheat producers would receive the world price for their exports. The price of other grains would remain at the intervention level. Growing wheat in the EU would be more profitable than growing other grains, shifting some acreage out of coarse grains and oilseeds and into wheat.

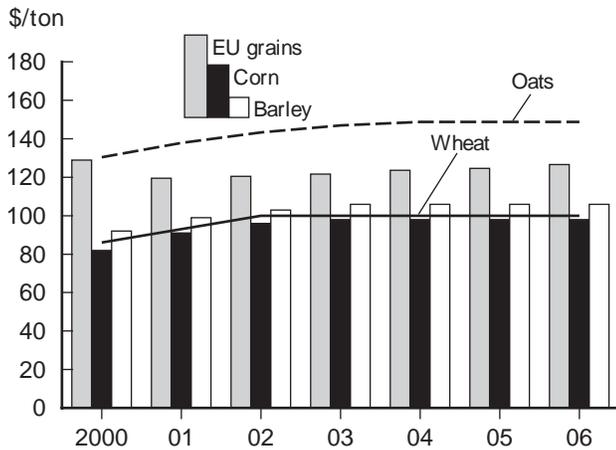
The reduction in EU oilseed payments would initially cause a slight shift out of oilseed production, into wheat production. However, oilseed production would be slightly higher than USDA baseline projections, due to the imposition of the 10-percent set-aside (assumed to be 15 percent in 2001-2003 and 17.5 percent for the remainder of the USDA baseline).

Grain feeding would increase, due to the price cut, at the expense of meal feeding. If the internal wheat price moves above the internal price of the other grains (since EU farmers could receive the higher world price on the export market), wheat feeding would decline while feeding of barley and corn would increase.

The 15-percent price cut could make EU wheat competitive on world markets in 2000, compared to 2002/03 in our baseline, eliminating the need for export subsidies. However, the proposed support price is well above USDA projected world prices for coarse grains (fig. 4). EU wheat exports would increase above USDA baseline estimates, while coarse grain exports would remain at the subsidized levels committed to under the WTO.

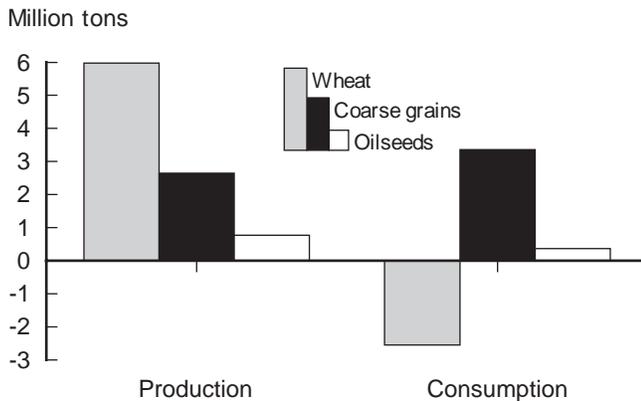
The 15-percent cut in the EU's intervention price will also translate directly into lower import barriers for the EU. The maximum duty-paid price is set at 155 percent of the EU intervention price. When the intervention price drops,

Figure 4
Comparison of EU and World Grain Prices



Source: Economic Research Service, USDA.

Figure 5
Changes in EU Production and Domestic Use of Grains Relative to Baseline in 2005



Source: Economic Research Service, USDA.

import duties will decline as well. It is possible that premium wheat such as U.S. Dark Northern Spring wheat, Canadian Western Spring wheat, and maybe even U.S. Hard Red Winter wheat could enter the EU duty-free. However, it will be easier for these premium wheats to enter the EU early in the marketing year, due to a 1 euro/ton increase in the payment for each month that intervention is open (November to May) to compensate for storage costs, which would increase the tariff.

The EU currently has large stocks of rye, and the policy changes in Agenda 2000 will likely lead to further increases. Production of other coarse grains (mostly rye and oats) exceed our baseline estimates (due to the 10-percent set-aside that was assumed to be 17.5 percent in the baseline). Additionally, rye feeding would decline, as barley and corn command the same price and are preferred feeds. With higher production, lower consumption, and the same export volume, the only place for the additional rye production to

go is into intervention stocks. According to our estimates, EU rye stocks could more than triple by 2007.

Dairy. Dairy reform has been postponed until 2005. However, milk production will increase 1.2 percent a year due to the increase in the dairy quota. The quota will increase another 1.2 percent from 2005 to 2007. The support price for skim milk powder (SMP) will fall 15 percent over the same 3 years. The reduction in the butter price is not analyzed.

Analysis of the EU's WTO export subsidy notifications suggests that current dairy prices are too high to allow the EU to export dairy products without a subsidy. The EU will need to subsidize dairy product exports until at least 2005. This could lead to difficulty in reaching certain markets, due to subsidized export limits the EU agreed to in the Uruguay Round Agreement on Agriculture (URAA). Currently, all EU butter exports, nearly all SMP exports, and 82 percent of cheese exports are subsidized (table 1). Because the 15-percent price reductions are far smaller than the average export subsidies for both butter and SMP, the EU will probably need to subsidize much of its exports even after the dairy reforms are implemented. There is no EU support price for cheese. However, butter and SMP are components in the production of cheese. Therefore, dairy reform is not likely to make EU cheese competitive in most markets.

Beef. The EU currently holds nearly a million tons of beef stocks, in part due to the bovine spongiform encephalopathy (BSE) crisis, which curtailed demand. Holding these stocks is costly and because of high EU beef prices, production has exceeded consumption. The beef reforms were proposed to reduce the EU's beef stocks.

Due to lower feed costs and increases in the dairy quota and direct payments, beef production will decline only slightly, since about 70-80 percent of EU beef is a byproduct of the dairy herd. Only if the full 20-percent cut in beef prices is passed on to the consumer will consumption be stimulated enough to eliminate EU beef stocks. If only half the price cut reaches consumers, the EU could reduce beef stocks to about 150,000 tons by 2007.

Because the EU's market price for beef is so far above that in other world markets, all EU beef exports must be subsidized. Under Agenda 2000, the support price for beef will decline 556 euro/ton, far less than the average export sub-

Table 1--EU dairy products will not be competitive under Agenda 2000 reforms

	Percent of		Percent of		15-
	Average	exports	Average	exports	
	subsidy	subsidized	subsidy	subsidized	percent
	95/96	95/96	96/97	96/97	reduction
	Ecu/ton		Ecu/ton		in price
					Ecu/ton
Butter	1,750	100.0	1,999	100.0	492
SMP	584	97.3	631	98.7	308
Cheese	1,036	82.5	675	85.7	N/A

Source: Economic Research Service, USDA.

Table 2--Agenda 2000 will not make EU beef competitive on world markets

	Average subsidy	Subsidized exports	Percent of exports subsidized	2000/01 WTO volume bound	20-percent reduction in price
	Ecu/ton	1,000 tons		1,000 tons	Ecu/ton
1995/96	1,478	1,019	92		
1996/97	1,297	1,177	100	821.7	556

Source: Economic Research Service, USDA.

sidy of 1,478 euro/ton in 1995/96 and 1,297 euro/ton in 1996/97. Thus, the EU would still need to subsidize its beef exports, which would be constrained by the EU's subsidized export commitments under the WTO.

Impact on the U.S. Farm Sector

The U.S. farm sector is likely to be little affected by Agenda 2000 with the exception of wheat. Only EU wheat exports are likely to increase significantly due to Agenda 2000. The large increase in EU wheat exports will drive down the world price of wheat about 4 percent by 2005. Consequently, U.S. wheat production would decline about 1 percent (less than a million tons) and consumption would increase slightly, driving exports down by about 1.5 million tons.

EU producers of dairy, beef, and coarse grains will continue to be shielded from international market signals as their internal prices will continue to be supported above world prices, and the EU will need to subsidize its exports of those commodities. The volume of subsidized exports is limited by the EU's export subsidy commitments under the WTO. Therefore, exports are not likely to increase much above WTO export subsidy limits, which will decline from now until 2000, at which point they will be fixed. The next round of WTO talks on agriculture are to begin at the end of this year. At that point, export subsidies could be further cut or even eliminated (as the Cairns group is pushing for). Therefore, unless the EU undergoes further reforms and its commodities reach world prices, exports of many EU agricultural commodities could decline in the future.

This analysis is based on world price projections from the official USDA baseline process from February 1999. If world prices are higher than projected in that baseline, the EU could be more competitive on world markets than projected. Conversely, if world commodity prices are lower than baseline projections, the EU could be less competitive.

Since world prices have fallen over the past year, we have run some simulations with lower world price assumptions. Our results have not differed significantly, in that only EU wheat becomes competitive on world markets. However, with a lower world price for wheat, EU wheat production and exports will not increase as much as when the official baseline prices were used in our analysis. The increase in EU wheat exports under lower world price scenarios ranged

from 7 to 15 percent, compared to 33 percent under the baseline price scenario.

Comparison of ERS Analysis to Other Studies

At this time, there are few published studies that analyze the impacts of the Berlin summit agreement on European agriculture. However, several studies have analyzed the impacts of the original Agenda 2000 proposed by the European Commission in 1997. We compare our analysis to two studies commissioned by the European Commission, and two conducted by the Food and Agricultural Policy Research Institute (FAPRI), one that analyzes the Berlin agreement (UMC) and one that analyzes an earlier Agenda 2000 proposal. The Commission analyses were conducted using the SPEL model at the University of Bonn, and the CAPMAT model at the University of Amsterdam. It is difficult to compare the studies directly, because the Agenda 2000 scenarios differ. More importantly, base assumptions, such as willingness to build stocks, price transmission between institutional and market prices, and macroeconomic and world price assumptions, vary as well. However, general comparisons can provide some insight as to how the ERS analysis compares to that of other organizations. We do not compare dairy, since the reforms have been postponed until 2005. The comparisons are made between Agenda 2000 and baseline (pre-Agenda 2000) scenarios in 2005.

Arable crops. The Berlin agreement reduces the mandatory land set-aside rate from 17.5 to 10 percent, a smaller decline than under the original Commission proposal, which reduced the set-aside rate to zero. Since the final set-aside rate under the Berlin agreement is higher, one would expect smaller increases in arable crop area and production than under the Commission proposal. However, set-aside assumptions in the base scenarios vary by study, so arable area increases vary considerably in the Agenda 2000 scenarios. Additionally, price assumptions vary considerably across the studies.

All studies find coarse grain consumption increases more than wheat consumption, following the decline in market prices. However, ERS analysis of the Berlin agreement indicates a decline in wheat consumption, due to lower producer prices for coarse grains that act as a substitute for feed wheat. All of the studies except FAPRI-UMC find that oilseed area will increase under Agenda 2000, resulting in larger production. However, the ERS and SPEL studies find that the increase in area will be smaller than the area coming out of set-aside, while the CAPMAT and FAPRI studies find that the increase will be greater than the area coming out of set-aside. The SPEL study assumes that oilseed prices will be lower than the other studies do, therefore oilseed area increases much less than in the other studies.

Livestock. All of the studies find that beef production will be relatively stable, due to partially offsetting direct pay-

Table 3--Changes from baseline results (i.e. continuation of 1992 reform) in 2005

Commodity		ERS	FAPRI-UMC	EU-SPEL	EU-CAPMAT	FAPRI
		Percent				
Set-aside	Base	17.5	10.0	17.5	5.0	10.0
	Agenda 2000	10.0	10.0	0.0	0.0	0.0
Wheat	Support Price	-15.0	-15.0	-20.0	-20.0	-20.0
	Area	6.4	4.0	6.3	8.6	12.3
	Production	5.8	3.3	6.3	7.4	8.2
	Consumption	-2.9	0.1	1.9	2.4	1.8
	Exports	33.0	5.4	N/A	18.6	37.8 1/
Coarse grains	Support Price	-15.0	-15.0	-20.0	-20.0	-20.0
	Area	4.5	2.1	6.3	3.9	5.2
	Production	2.5	1.2	5.8	2.4	3.2
	Consumption	3.4	0.9	2.5	4.5	3.3
	Exports	0.0	2.9	N/A	-9.1	N/A
Oilseeds	Area	6.1	-2.8	4.0	8.9	10.3
	Production	5.0	-2.5	3.2	5.6	11.1
	Consumption	1.2	0.1	0.6	-3.4	2.4
	Exports	4.5	-3.1	N/A	N/A	-4.0 2/
Beef	Support Price	-20.0	-20.0	-30.0	-30.0	-30.0
	Production	-0.6	-2.2	0.5	-0.6	2.8
	Consumption	7.0 3/	2.8	3.1	7.8	2.3
	Exports	1.1 4/	0.0	-33.6	N/A	-26.5
Pork	Production	0.4	-0.5	-0.6	1.6	0.8
	Consumption	0.4	-0.6	-0.5	1.3	0.7
	Exports	0.4	0.7	N/A	N/A	2.1 1/
Poultry	Production	1.0	-0.5	-1.3	2.2	0.5
	Consumption	0.7	-0.6	-1.1	0.9	0.4
	Exports	3.6	0.6	N/A	N/A	2.0 1/

1/ Net exports. 2/ Net imports. 3/ Assumes full price transmission to the consumer. 4/ Assumes consumer price falls 5 percent.

Source: Economic Research Service, USDA.

ments, lower feed costs, and the increase in the dairy quota. Beef consumption is projected to increase in all of the studies, though the magnitude varies. The ERS analysis finds that cuts in producer prices for beef more than offset the impact of relatively lower feed costs on pork and poultry prices, causing a relative increase in beef consumption.

Most studies find that pork and poultry production will rise in response to lower feed costs and increased demand. Only the SPEL analysis foresees a drop of about 1 percent in white meat production and consumption, as the large drop in the price of beef leads consumers to substitute beef for white meat. The consequent declines in the prices of white meats outweigh the decline in feed costs, therefore production declines. The ERS study finds that pork production and consumption both rise about 0.4 percent. Poultry production rises 1 percent while domestic consumption rises only about 0.7 percent. The difference between poultry production and consumption is due to the increased competitiveness of EU poultry exports vis-à-vis other countries.

The Possibility of Further Reform

The EU has built in the ability to expand on the Agenda 2000 reforms in the near future. Most commodities are required to undergo a mid-term review, at which point the

European Council will decide whether the initial Agenda 2000 reforms are producing the desired results. If budgetary commitments (or possibly WTO commitments) are not being met, the Council will call for further reforms.

Conclusions

The European Commission's Agenda 2000 package will have little impact on U.S. agriculture. The reforms will continue to move the EU away from price support mechanisms, but will not eliminate the EU's surplus production problems. For most commodities, the Agenda 2000 reforms do not appear to be sufficient to make the EU competitive on world markets. Therefore, the EU will probably find it difficult to export above its Uruguay Round commitments for most commodities.

Because EU politicians have repeatedly stated that Agenda 2000 will be the EU's position in the upcoming WTO round on agriculture, it is unlikely that the EU will be pushing to further liberalize global agricultural trade. It is quite possible that Agenda 2000 will be a challenge to overcome for U.S. and other negotiators in the WTO trade talks on export subsidies.

Agenda 2000 changes to EU agricultural policies

1999 EU policies

- ◆ agricultural budget set at a moving ceiling of 1.27 percent of GDP
- ◆ mandatory land set-aside 10 percent
- ◆ cereal intervention price 119 euro/ton
- ◆ direct payments to cereal producers of 54 euro/ton, or 207 euro/hectare based on average regional cereal reference yields
- ◆ direct payments to oilseed producers of 94 euro/ton, or 359 euro/hectare based on average regional oilseed reference yields
- ◆ beef support price of 2780 euro/ton
- ◆ suckler cow premium 145 euro/animal
- ◆ male bovine premium 135 euro/animal
- ◆ SMP support price 2060 euro/ton
- ◆ butter support price 3280 euro/ton
- ◆ no payment per ton of milk produced
- ◆ dairy quota set at 117 million tons

Agenda 2000

- ◆ agricultural budget fixed at 40.5 billion euros per year, in real terms
- ◆ mandatory land set-aside 10 percent
- ◆ cereal intervention price 101 euro/ton
- ◆ direct payments to cereal producers of 63 euro/ton, or 290 euro/hectare based on average regional cereal reference yields
- ◆ direct payments to oilseed producers of 63 euro/ton, or 290 euro/hectare based on average regional cereal reference yields
- ◆ beef support price of 2220 euro/ton
- ◆ suckler cow premium 200 euro/animal
- ◆ male bovine premium 210 euro/animal
- ◆ SMP support price 1750 euro/ton
- ◆ butter support price 2790 euro/ton
- ◆ 17 euro/ton of milk produced
- ◆ dairy quotas set at 120 million tons

However, if Agenda 2000 does not produce the desired results (meeting budgetary commitments and WTO limits), the reforms could be revised as soon as 2003, after undergoing mid-term reviews.

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The Euro and the Agricultural Sector

by
Jason Bernstein

On January 1, 1999, eleven of the fifteen countries that make up the European Union fixed their exchange rates and adopted a common currency, the euro. The euro will likely affect intra-EU trade, as a common currency will eliminate exchange rate risk and promote investment between euro-zone countries. Most EU consumers will probably not be significantly affected by the euro until 2002, when actual coins and bills are introduced. For agriculture, the previously complex agrimonetary system was abolished so that producers now receive a truly common set of prices and payments throughout the euro-zone as a result of the fixed exchange rates among euro-zone currencies. Agricultural producers outside the euro-zone, while now facing a set of exchange rates that could move against the euro, have a modified agrimonetary system to receive support payments, which means their payments will change as the exchange rate with the euro changes.

Unlike its predecessor, the ECU, the euro is expected to play a larger role in world markets and will probably be used, at least to some extent, as a currency for financial transactions and central bank reserves. Moreover, monetary policy for the euro will be controlled by a European Central Bank, not by individual member countries. If the euro achieves the kind of status and stability normally attributed to the U.S. dollar on world markets, the euro could significantly affect world agricultural trade and on the competitiveness of EU and U.S. farm products.¹

The introduction of the euro did away with the complexities of the agrimonetary system in the EU. On January 1, 1999, all ECU-denominated prices were transferred into euro-denominated prices on a one-to-one equivalent. For example, the standard butter intervention price of 3282 ECU per ton is now simply 3282 euros per ton in the euro-zone instead of prices that varied by member state according to the agricultural exchange rate (green rates) that differed from official exchange rates. Green rates were abolished, and all agricultural payments are now converted from euros into national currencies (in the euro-zone) using fixed market exchange rates. However, differences between the green rates and the new euro exchange rates caused immediate decreases in the level of support payments and prices in national currency equivalents. For price support payments, these decreases were quite small for euro-zone countries, in the range of 1.1 to 1.9 percent. For direct payments, however, the range of these decreases was much higher, up to

almost 14 percent for Italy.² The EC agreed to provide at least partial compensation for disparities between payments under the green rate and euro exchange rate systems.

For countries outside the euro-zone, the Commission enacted a system that converted euros into national currencies using the exchange rate on the day before the operative event, usually defined as the day a shipment was delivered or when the product was presented for intervention. For direct payments, exchange rates were originally fixed throughout the entire year using the daily exchange rate on January 1 for crops and on June 1 for livestock, but that has since been amended to monthly adjustments.

The longer-term effects of the euro on agriculture are not as certain. If the euro is stronger than its predecessor, the ECU, this would affect the euro/US dollar exchange rate, as well as rates with other trading partners, and the competitiveness of EU and U.S. farm products. If the strength of the euro causes the euro/US dollar exchange rate to appreciate, U.S. agricultural exports would be relatively cheaper on European and world markets while European consumers would enjoy cheaper imports and European producers would benefit from better terms of trade and lower interest rates.

Many analysts have predicted that the euro will be relatively stronger than the ECU, in part because of the mandate of the European Central Bank to secure price stability, similar to policies of the German Bundesbank before the euro. However, there are many good reasons to believe that the euro will be weaker than expected, an argument backed up by the euro's lackluster performance during the first few months of 1999. If the euro depreciates relative to the U.S. dollar, U.S. exports would be relatively more expensive on European and world markets and EU exports would be less expensive.

The euro may also put pressure on individual EU countries within the euro-zone to constrain domestic spending on agricultural programs. By resigning control over monetary policy to a European Central Bank, countries within the euro-zone cannot increase money supplies to fund government spending. In addition, euro-zone countries have also agreed to limit fiscal spending as part of a stability pact to coordinate economic development.

In summary, it is unclear whether the euro itself will be a significant pressure for EU agricultural reform in the long term. In the short run, however, the euro will usher in a new level of transparency in agricultural prices and payments between member countries within the euro-zone.

¹ According to an OECD paper, *The Economic Consequences of the Implementation of the Euro for the Agro-food Sector*, OECD, March 1999.

² Decreases in direct payments were larger because the green exchange rate used for direct payments was frozen in June 1995.

Enlargement to the East

In 1998 the EU began formal negotiations with five of the Central and East European (CEE) countries for eventual accession to the EU. The five countries are Poland, Hungary, the Czech Republic, Estonia, and Slovenia. Officially the target date for accession is 2002, but many believe the CEE countries will not be ready until 2006 at the earliest. Analysis reported in this article suggests that enlargement may bring pressures to the EU-18 in the form of additional surpluses of beef, pork, and rye. However, the article points out several factors that could reduce those pressures. One is that accession may be delayed, since the CEE countries still must make several important institutional changes. Other important factors are quality differentials between CEE and EU products and the changes that accession may bring to CEE land, labor, and capital markets. [Nancy Cochrane (cochrane@econ.ag.gov)]

Formal negotiations began in March 1998 between the EU and the five Central and East European (CEE) countries identified as the first tier for eventual membership (Poland, Hungary, Estonia, Slovenia, and the Czech Republic). Official statements by both sides identify 2002 as the target date for accession. Recent, unofficial statements suggest that enlargement will most likely not occur before 2006. It is a near certainty that enlargement to include at least some of the CEE countries will eventually take place. It is far less certain just how much pressure enlargement will place on the CAP. Enlargement will have implications for the EU budget, but the severity of such pressures depends on the timetable for accession and the extent of restructuring that the CEE countries manage to achieve before accession.

One source of potential pressures on the CAP from enlargement is the possibility of large surpluses of livestock products. Agriculture's share of total GDP is considerably larger in most of the CEE countries than in the EU. The share is about 6 percent in Poland and 13 percent in Hungary and the Czech Republic. The shares are much smaller in Slovenia and Estonia. The CEE countries together are surplus producers of grain and livestock products, and most of them produce these surpluses at prices well below those of the EU. The enlargement analysis presented later in this chapter suggests that wheat and barley surpluses will not be a serious problem for the enlarged EU, but surpluses of livestock products and "other coarse grains" (mainly rye) could grow significantly under Agenda 2000. Increased surpluses of beef and pork could make it more difficult for the enlarged EU to meet its WTO commitments regarding export subsidies. See next section for further discussion of WTO implications of enlargement.

Enlargement to the east will exert other types of budgetary pressures on the EU. All five countries on the fast track for accession will be eligible for infrastructure assistance from the EU's Structural Funds. Agenda 2000 already envisions substantial outlays for pre-accession aid and infrastructure

development in the CEE countries. But more assistance may be needed than is now envisioned. Moreover, demands for compensation payments will place an even greater strain on the EU budget. The EU currently has no regulations stipulating a minimum size for an operation to qualify as a farm. Poland has 2 million farms, many with no more than 2 hectares. Hungary also has about 1 million small, mainly subsistence farmers. All these producers, if still farming at the time of accession, will be eligible for compensation payments. Most will also qualify as "small producers" and be exempt from set-aside requirements.

Other factors, however, could mitigate these pressures. One is simply that the CEE countries are highly unlikely to be ready for accession by the target date of 2002. There are important institutional reforms that the countries must still undertake before they are eligible. Most analysts believe that the CEE countries will not be able to meet all the requirements for accession until 2006 at the earliest.

Another factor is that the surpluses that develop under Agenda 2000 may not be as large as projected by the ERS European Simulation Model (ESIM). For one thing, the price differentials between CEE and EU products result partly from quality differences, particularly for livestock products. Another consideration is that accession will likely lead to important shifts in the primary factor (land, labor, and capital) markets in the CEE countries. EU membership will attract more foreign investment, and the structural funds will generate more investment. These capital inflows could put upward pressure on wages and land prices, while making capital more readily available. These fundamental shifts could alter the eventual structure of CEE output.

The following discussion will focus primarily on Poland and Hungary because they have the largest agricultural sectors of the five applicant countries and have the potential to generate large surpluses in the enlarged EU.

A Realistic Timetable?

Before any country can be accepted for membership, it must meet the following criteria:

- ✿ develop stable institutions to guarantee democracy, rules of law, and respect for human rights;
- ✿ develop an efficient market economy capable of competing on the integrated market;
- ✿ demonstrate the ability to meet obligations of EU membership, including implementation of political, economic, and monetary goals.

Nearly all the CEE countries applying for membership meet the first criterion. They have made substantial progress towards developing a market economy, but there are concerns about efficiency, particularly in Poland. All five countries have considerable work to do before they meet the institutional, economic, and monetary requirements. EU Commission documents point out a number of institutional shortcomings in all the countries.

The current EU position is that the CEE countries would have to immediately adopt all EU legislation upon accession, which includes 20,000 laws comprising 80,000 pages applying to agriculture and food production alone. There are working groups in the agricultural ministries of all the CEE countries reviewing these 80,000 pages and rewriting their own legislation to conform to the EU laws. All the countries have made considerable progress towards harmonization of the laws. However, building the institutions needed to implement these laws and regulations is a much greater challenge.

Hungary is considered more ready for accession than Poland. In fact, the Hungarians have expressed fears that their accession may be held up by Poland's lack of progress. But the EU Commission points out some areas that Hungary still needs to address. Areas of concern for both Hungary and Poland include lagging rural development initiatives; compliance with EU sanitary, phytosanitary, and animal welfare regulations; land and credit markets; statistical reporting; and the ability to implement market support policies similar to the EU.

Rural development policies. There are large economic disparities among regions in both Poland and Hungary, and both countries still need to do more to improve infrastructure and to generate non-agricultural employment. The EU is already providing substantial pre-accession funds to address these shortcomings, and even more funds would come after accession through the Structural Funds. But the EU complains that there is a lack of coordination in developing and implementing rural policies; neither Poland nor Hungary has the administrative capacity at the regional level to administer the development funds.

Implementation of sanitary, phytosanitary, and animal welfare regulations. Poland and Hungary have made considerable progress in harmonizing their standards and regulations with those of the EU. However, they lack the administrative structures to enforce them. Poland's Ministry of Agriculture, for example, has no staff carrying out inspections at meat plants, leaving inspections to be done by plant personnel. An even more serious concern to the EU is inadequate enforcement of sanitary and phytosanitary standards at border crossings with third countries. Checks at borders are limited to controls on certificates and other documents. Actual physical inspections are done at the destination. These procedures do not comply with EU import rules with third countries.

Larger livestock producers are becoming more aware of the eventual need to comply with EU regulations on animal welfare, and some are making efforts to bring their operations up to EU standards in this area. But animal welfare legislation harmonized with that of the EU has not yet been enacted in any of the CEE's.

Alignment of market support policies with those of the EU.

The EU Commission has pointed out that the support schemes for pork in Hungary and Poland still need to be harmonized to EU standards. The CEE's also need to introduce market instruments such as dairy quotas and set-aside requirements. Of greater concern than the policies themselves, is the need to set up the administrative structures to administer CAP policies. Poles are of the opinion that the EU would find it administratively impossible to administer the accompanying production quotas and output registration for 2 million farms. (*Rzeczpospolita Oct. 9, 1998*)

The entire market infrastructure of the CEE countries is also a concern by the EU. Current CEE market intervention agencies, particularly the Polish Agency for Agricultural Markets (AMA), have powers that go well beyond the rather passive role of the EU intervention agencies. Marketing cooperatives, which are well developed in the EU for fruits, vegetables, sugar, dairy, and grain are rare in the CEE countries. Wholesale markets are also underdeveloped.

The EU is also concerned about the governance of the restructured production cooperatives that dominate the agricultural landscape in Hungary and the Czech Republic. These entities have been privatized and are owned and managed by their members. But there are reports of conflicts between owner-members and workers. Managers often act independently without seeking guidance from representatives of the members. In addition, there are still very close ties between cooperative management and local politicians. As a result, managers are often pressured to keep on surplus employees and are not entirely free to seek profit maximization.

Better functioning land markets. Most land is privately owned in Poland, most owners have clear title to their land, and in principle, Polish citizens are free to buy and sell land.

However, land markets remain undeveloped. According to a World Bank assessment (Debatisse, 1997), Poland needs an efficient system of contracts to transfer ownership, clear regulations for using land as collateral, low-cost procedures for resolving disputes, and an easily accessible information system of land transactions, prices, and ownership.

Hungary has even more serious impediments to a fully functioning land market. Although most of Hungary's land went into private ownership in the early 1990s, many land owners remain without clear title. Moreover, only individuals are allowed to own land. Because corporate land ownership is prohibited, corporations cannot use land as collateral.

Both Poland and Hungary prohibit foreign ownership of land. EU negotiators insist that this will have to change on accession; Polish and Hungarian officials believe they can continue to restrict ownership to their own citizens.

Improvements in statistical reporting. The EU is also concerned about Polish statistics, pointing to Poland's need to restore its farm registers and provide better data on purchasing and distribution. Poland may not be able to get Structural Funds if it fails to prepare sound regional statistics. The EU also insists that Hungary strengthen its regional statistics regarding unemployment and poverty, as well as market price quotation systems.

The EU PHARE Program is providing significant assistance to help the CEE countries overcome these institutional shortcomings. But even with PHARE funding and technical assistance, it will take time to implement changes in all these areas. Most officials agree informally that the CEE countries will not be ready for accession until at least 2006. The official statement is still that there will be no transition period, but several CEE politicians have stated that they will need some sort of transition period before they can implement all EU legislation.

Competitiveness of CEE Agriculture and Food in an Enlarged EU

Of the five CEE countries slated for earliest accession, only Hungary is a net exporter of agricultural products to the EU (table 4). All five are net exporters of live animals to the EU (mostly cattle), while Hungary and Poland are net exporters of meat and meat products, dairy products, and fruits and vegetables as well. Hungary is a net exporter of grain to the EU, whereas the other four import grain from the EU. All are net importers of feeds and processed foods. These trade patterns suggest that the CEE countries have a comparative advantage in live animals, livestock products, fruits, vegetables, and dairy products with respect to the EU-15. For the most part these are labor intensive lines of production, and the countries are able to maintain this comparative advantage

because of their lower wage rates. However, true comparative advantage is obscured to an extent by extensive support measures in place in the CEE countries, which provide heavy subsidies to livestock producers in Hungary and grain producers in Poland and the Czech Republic.

Using the ESIM model, we analyzed the impact of Agenda 2000 plus enlargement on production and trade of grains, oilseeds, and livestock of the CEE countries and the enlarged EU. The countries included in the analysis were Poland, Hungary, and the Czech Republic. We also obtained results for the EU-15 and the enlarged EU-18. The key assumptions underlying the analysis were:

- ✱ the CEE countries will immediately adopt the EU's Common Agricultural Policy (CAP) in 2002, with no transition period. Thus in that year CEE prices will adjust to the prices laid out in Agenda 2000.
- ✱ CEE producers will receive the same compensation payments and will be subject to the same set-aside requirements as their counterparts in the EU-15.
- ✱ CEE producers will be subject to the EU dairy quota, which was fixed at USDA's projected milk production for each of the CEE countries in 2001. The dairy quota also constrains CEE beef production, as more than half of the beef produced is a product of the dairy herd.

This analysis compares three scenarios for the CEE countries: the 1998 USDA baseline, Agenda 2000 without enlargement, and enlargement under Agenda 2000. The base scenario for the EU-15 was Agenda 2000 without enlargement, which was described in detail in the previous section. The ensuing discussion of the results will focus mainly on the EU-18 under Agenda 2000 compared with the EU-15 without enlargement under Agenda 2000.

To understand the results, it is helpful to compare the current producer prices in the CEE countries and the EU-15. When previous ERS analysis was done (Leetmaa, Jones, and Seeley), CEE prices for nearly all commodities were substantially below the prevailing EU prices. Thus the scenarios run in that analysis assumed sharp increases in nearly all prices on accession. In the years since that analysis, there has been some convergence of CEE and EU prices. In fact wheat prices in Poland and the Czech Republic, thanks to their domestic intervention schemes, are currently higher than the Agenda 2000 wheat price (table 5). CEE prices of barley, corn and "other coarse grains," however, are lower. Prices of all CEE livestock products are below those of the EU. Pork prices in the CEE countries are not as far below the EU prices as they were a few years ago. Significant price gaps remain for beef and poultry.

Table 4--Agricultural trade between the EU and the five CEE countries preparing for accession

	Imports					Exports						
	1992	1993	1994	1995	1996	1997	1992	1993	1994	1995	1996	1997
	Million U.S. dollars											
Czech Republic												
Live animals	n.a.	7,455	16,375	31,752	17,822	6,760	n.a.	41,768	45,455	44,334	22,076	27,316
Meat and meat preparations	n.a.	10,772	36,348	34,485	29,875	21,851	n.a.	30,162	22,688	24,406	24,843	22,094
Dairy products and eggs	n.a.	25,891	27,643	45,252	56,743	33,793	n.a.	118,225	107,106	136,265	93,432	45,294
Grains and grain preparations	n.a.	43,669	26,760	35,353	91,869	92,482	n.a.	11,562	15,441	60,369	17,336	10,709
Coffee, tea, and spices	n.a.	38,131	55,839	76,139	79,528	64,108	n.a.	5,716	5,815	9,773	7,910	8,183
Vegetables and fruit	n.a.	131,094	198,393	270,913	282,046	229,916	n.a.	77,374	85,413	83,312	71,048	58,633
Sugar, sugar products and honey	n.a.	10,615	13,270	36,956	40,394	25,904	n.a.	4,316	7,703	28,835	10,286	15,838
Animal feeds	n.a.	44,343	57,142	91,169	118,870	115,724	n.a.	31,154	31,996	33,736	36,950	31,352
Tobacco and products	n.a.	21,616	48,956	40,329	34,311	21,087	n.a.	1,246	5,880	3,648	17,672	50,154
Oilseeds	n.a.	3,397	4,260	8,428	4,587	4,313	n.a.	9,136	13,147	18,177	33,503	30,962
Veg. fats and oils	n.a.	25,013	31,143	41,767	37,874	30,009	n.a.	3,884	4,764	4,016	485	221
Total agricultural products to EU	n.a.	495,153	676,940	980,458	1,081,388	902,324	n.a.	435,781	489,760	564,849	436,884	367,171
Total agricultural exports	n.a.	1,065,686	1,375,705	1,914,384	2,132,376	1,935,330	n.a.	1,033,870	1,009,242	1,288,441	1,129,315	1,036,798
Estonia												
Meat and meat preparations	n.a.	n.a.	n.a.	7,817	10,542	14,205	n.a.	n.a.	n.a.	1,620	321	224
Dairy products and eggs	n.a.	n.a.	n.a.	20,908	19,878	39,698	n.a.	n.a.	n.a.	45,922	29,517	35,562
Grains and grain preparations	n.a.	n.a.	n.a.	19,837	43,367	32,380	n.a.	n.a.	n.a.	209	506	808
Coffee, tea, and spices	n.a.	n.a.	n.a.	36,450	33,711	43,108	n.a.	n.a.	n.a.	1,205	2,868	5,821
Vegetables and fruit	n.a.	n.a.	n.a.	25,431	29,718	29,826	n.a.	n.a.	n.a.	4,598	7,197	6,795
Sugar, sugar products and honey	n.a.	n.a.	n.a.	21,937	31,079	37,727	n.a.	n.a.	n.a.	306	1,092	1,106
Animal feeds	n.a.	n.a.	n.a.	9,901	11,030	12,212	n.a.	n.a.	n.a.	482	669	459
Tobacco and products	n.a.	n.a.	n.a.	29,577	35,993	39,981	n.a.	n.a.	n.a.	296	299	292
Oilseeds	n.a.	n.a.	n.a.	33,925	35,165	38,646	n.a.	n.a.	n.a.	1,562	2,410	2,286
Veg. fats and oils	n.a.	n.a.	n.a.	13,003	12,259	12,788	n.a.	n.a.	n.a.	59	79	5
Total agricultural products to EU	n.a.	n.a.	n.a.	217,102	268,175	306,546	n.a.	n.a.	n.a.	67,375	56,591	64,777
Total agricultural exports	n.a.	n.a.	n.a.	360,350	487,178	689,866	n.a.	n.a.	n.a.	197,449	226,744	400,044
Hungary												
Live animals	7,093	3,910	5,717	4,343	2,871	4,729	117,003	87,622	95,126	89,122	80,032	82,386
Meat and meat preparations	11,209	39,697	94,745	50,238	22,247	45,485	492,176	403,402	434,570	460,523	491,371	460,790
Dairy products and eggs	38,685	30,495	34,380	13,000	9,463	13,423	28,420	23,748	13,225	12,140	13,207	7,871
Grains and grain preparations	13,475	27,977	46,704	18,711	27,151	25,008	49,182	29,832	56,287	96,066	53,329	60,296
Coffee, tea, and spices	31,304	41,538	48,635	44,065	48,698	46,796	43,250	26,164	32,689	39,879	30,895	27,840
Vegetables and fruit	47,254	52,395	68,553	63,307	57,089	59,313	301,918	217,416	261,486	254,261	258,914	237,998
Sugar, sugar products and honey	3,106	27,939	10,075	11,636	11,375	9,208	19,242	19,301	16,720	24,315	28,267	16,538
Animal feeds	26,208	38,449	45,415	45,561	46,928	51,783	22,901	22,901	21,083	26,950	37,124	21,898
Tobacco and products	12,538	15,695	15,417	16,410	25,761	19,313	10,974	7,633	6,426	1,091	30,107	28,028
Oilseeds	2,469	5,848	10,231	15,771	4,450	4,619	46,168	74,793	86,653	84,302	94,837	56,704
Misc. edible products	53,313	59,164	74,059	44,830	33,846	39,445	25,165	16,873	13,923	8,223	6,423	4,964
Beverages	20,824	22,661	28,651	28,132	25,581	23,052	36,953	30,631	34,439	40,205	45,185	52,156
Hides, skins and furs	8,012	9,354	15,530	19,424	22,454	19,531	11,552	9,117	12,461	8,232	8,760	11,535
Crude plant and animal material	42,401	48,803	56,669	52,716	48,965	51,473	78,414	80,249	105,657	85,413	89,059	78,971
Total agricultural products to EU	n.a.	n.a.	n.a.	494,771	459,647	509,395	n.a.	n.a.	n.a.	1,219,717	1,230,126	1,130,340
Total agricultural exports	n.a.	n.a.	n.a.	1,007,051	998,440	1,150,361	n.a.	n.a.	n.a.	2,660,024	2,533,481	2,755,027

Table 4--Agricultural trade between the EU and the five CEE countries preparing for accession--Continued

	Imports					Exports						
	1992	1993	1994	1995	1996	1997	1992	1993	1994	1995	1996	1997
Poland	Million U.S. dollars											
Live animals	11,922	9,631	23,695	26,018	31,841	33,843	214,195	163,517	170,630	163,415	160,098	144,743
Meat and meat preparations	63,401	97,510	141,568	87,430	87,261	89,927	180,708	143,644	144,613	158,474	155,411	139,142
Dairy products and eggs	99,605	73,487	37,399	33,643	29,566	48,811	119,432	115,721	101,249	143,451	81,557	77,886
Grains and grain preparations	101,571	198,426	49,257	52,600	421,174	175,669	8,773	2,048	3,311	7,480	7,801	3,827
Coffee, tea, and spices	81,397	88,590	97,346	91,611	111,274	120,402	8,250	5,050	4,732	12,817	33,770	41,461
Vegetables and fruit	133,857	162,554	149,804	174,559	183,953	245,426	398,095	394,739	463,306	503,014	490,345	490,662
Sugar, sugar products and honey	64,605	42,315	42,460	118,764	74,832	56,726	29,294	29,069	34,031	38,522	62,253	59,589
Animal feeds	149,753	151,760	193,317	243,496	233,399	308,306	11,019	22,352	30,326	32,559	49,063	52,894
Tobacco and products	22,798	28,886	47,750	58,970	51,427	46,121	5,483	5,123	24,271	6,000	19,244	18,653
Oilseeds	10,698	5,983	4,490	4,060	73,178	29,786	21,521	3,101	1,547	67,790	14,436	948
Misc. edible products	91,596	116,232	146,356	166,194	146,700	149,838	12,820	10,307	12,052	10,281	9,476	7,722
Beverages	53,152	22,540	25,202	28,356	54,127	61,963	9,688	7,263	7,212	7,288	8,877	10,616
Hides, skins and furs	5,422	17,452	30,480	42,724	62,850	59,662	41,871	18,723	12,836	14,545	24,391	31,332
Crude Mineral fertilizers	48,909	46,306	49,923	64,384	72,193	74,874	76,659	64,744	76,804	87,911	82,542	63,594
Crude plant and animal material	87,056	83,673	94,486	128,064	143,260	132,827	58,418	57,822	60,537	76,508	83,043	95,785
Animal, veg. fats, oils, nes	16,610	21,757	33,706	58,982	66,967	69,385	9,681	10,930	9,964	13,525	13,817	11,209
Veg. fats and oils	57,071	53,015	66,588	60,356	54,185	65,140	3,600	36	0	709	809	109
Total agricultural products to EU	1,103,968	1,229,930	1,243,015	1,476,488	1,938,182	1,810,684	1,185,460	1,009,580	1,070,656	1,260,623	1,205,428	1,180,003
Total agricultural exports	1,995,641	2,284,693	2,525,034	3,210,921	4,193,959	3,956,581	1,869,810	1,547,155	1,903,072	2,307,380	2,561,513	3,100,035
Slovenia												
Live animals	1,935	2,327	4,911	8,473	3,366	2,177	11,050	2,884	1,444	1,359	1,722	1,376
Meat and meat preparations	18,476	30,310	53,219	36,060	21,339	24,442	39,369	33,627	24,500	19,286	17,076	19,777
Dairy products and eggs	7,892	14,626	16,043	18,976	17,217	14,432	9,752	5,957	8,087	6,799	6,384	5,713
Grains and grain preparations	27,650	32,904	51,488	32,686	51,829	48,900	983	1,373	1,331	897	1,033	1,039
Coffee, tea, and spices	10,154	24,366	29,177	38,150	39,239	36,591	2,436	3,410	2,701	1,338	1,944	2,415
Vegetables and fruit	28,592	54,039	72,595	97,943	95,004	91,696	42,381	28,296	34,508	27,313	20,577	16,862
Sugar, sugar products and honey	13,309	19,451	25,691	28,076	19,414	14,775	4,042	5,180	5,628	5,540	5,444	6,470
Animal feeds	10,773	15,481	16,702	19,978	16,669	16,141	3,848	4,292	4,844	5,548	5,912	6,781
Beverages	6,542	11,387	12,217	20,061	17,904	14,990	14,127	8,142	8,475	8,843	10,640	7,751
Hides, skins and furs	5,338	6,298	5,992	7,461	4,618	4,456	10,517	9,391	10,703	13,872	16,223	20,038
Crude Mineral fertilizers	25,039	22,453	26,775	32,641	33,816	30,416	2,133	1,657	1,342	1,491	1,678	1,031
Crude plant and animal material	13,867	22,496	27,052	36,574	37,995	34,996	4,925	3,526	3,453	2,627	1,815	1,644
Total agricultural products to EU	176,066	270,820	366,020	414,590	390,808	372,682	147,476	108,981	109,760	97,251	92,252	93,086
Total agricultural exports	598,836	598,589	703,703	832,714	824,619	788,580	428,346	298,113	341,530	342,345	365,864	348,473

n.a. = Not available.

Source: United Nations

Table 5--CEE and EU prices for principal commodities

Commodity	EU	Czech Rep.	Hungary	Poland
Wheat	113.47	119.33	72.28	130.19
Barley	113.47	104.29	63.88	110.81
Corn	113.47	104.29	65.28	95.50
Other coarse grains (rye)	113.47	104.29	65.28	95.50
Soybeans 1/				
Tariff (percent)	0.00	0.00	0.00	4.20
Index (number)	1.00	1.00	1.00	1.03
Rapeseed 1/	230.00	0.00		246.39
Tariff (percent)	0.00		0.00	39.00
Index (number)	1.00		1.00	1.28
Sunseed 1/	243.00	0.00	244.35	
Tariff (percent)	0.00			13.00
Index (number)	1.00			1.09
Soymeal 1/				
Tariff (percent)	4.50	0.00	5.00	8.30
Index (number)	1.05	1.00	1.04	1.06
Rapemeal 1/				141.00
Tariff (percent)	0.00	0.00	0.00	26.30
Index (number)	1.00	1.00	1.00	1.19
Sunmeal 1/				
Tariff (percent)	0.00	0.00	0.00	26.30
Index (number)	1.00	1.00	1.00	1.19
Cattle, beef and veal	1,560.71	1,051.81	984.38	689.00
Hogs, live weight	1,292.90	1,037.30	1,058.52	975.00
Poultry (ready to cook)	1,182.60	797.22	909.77	989.00
Eggs (retail)	1,256.30	1,017.76	1,208.67	1,731.40

1/ CEE prices for these commodities are not reported. Many of these commodities are not produced in the CEE countries and for all these commodities, the domestic price is assumed to be the world price plus whatever tariffs are in effect. In these cases the price wedge is the difference in tariff rates.

Source: Economic Research Service, USDA.

The following general conclusions can be drawn from the model results:

- ✱ Enlargement actually relieves some of the pressures on the EU-18 grain sector. Total grain surpluses in the EU-18 are nearly the same as in the EU-15 under Agenda 2000. Wheat and barley surpluses are reduced, but there is a potential problem with expanding surpluses of other coarse grains—mainly rye.
- ✱ There are potential problems in the EU-18 with growing surpluses of pork and beef, which may make it difficult for the EU-18 to meet its WTO commitments on export subsidies.
- ✱ The EU-15 is not greatly affected by enlargement.
- ✱ U.S. exports are affected to a limited degree by enlargement. U.S. exports of corn and pork are slightly lower than in the Agenda 2000 scenario without enlargement. Exports of soymeal are slightly higher.

✱ Among the CEE countries, small changes occur simply because of Agenda 2000, in that Agenda 2000 brings about changes in world prices. However, far greater changes occur under enlargement. The changes are mainly in the livestock sectors. All three become much larger exporters of beef, pork and poultry. There are smaller changes in total net grain trade. As one might expect, Hungary's grain exports rise significantly, but these are mostly balanced by increased imports by Poland and the Czech Republic.

Grain. In the grain sector pressures from enlargement are not as great as suggested by earlier analysis. The only market that could experience problems is "other coarse grains," which is mainly rye. Stocks of other coarse grains in the EU-15 are projected to triple under Agenda 2000 without enlargement. With enlargement, the EU-18's net surplus of other coarse grains could rise another 29 percent.

Pressures in the rest of the grain sector are actually relieved somewhat because of enlargement. Net surpluses of wheat and barley of the EU-18 are 6 and 13 percent, respectively, below those projected for the EU-15 under Agenda 2000 without enlargement. The CEE countries switch from net exporters to large net importers of wheat. Net imports of barley decline, but the CEE countries remain net importers.

In the CEE countries, Agenda 2000 without enlargement brings declines in grain prices of 2 to 5 percent against the baseline in 2005. Under this scenario it is assumed that CEE price and border policies remain constant and world prices are fully transmitted to the domestic market. Under this scenario there are small declines in production and small increases in consumption, and the impact on net trade is marginal.

Enlargement, however, brings some dramatic changes in CEE grain prices, and the CEE response to those changes has important implications for the EU-18. The most significant changes can be summarized as follows:

Barley. Under the enlargement scenario, 2005/2006 barley prices are 11 percent higher in the Czech Republic and 65

Table 6--EU-18: Changes from EU-15 under Agenda 2000, 2005/2006

Commodity	Production	Consumption	Net surplus
Total grains	20.75	24.28	0.54
Coarse grains	27.29	26.24	57.24
Barley	14.45	17.13	-12.77
Corn	16.54	14.32	-9.75
Other	87.44	96.86	29.02
Wheat	14.74	22.28	-6.18
Oilseeds	12.16	7.01	1.74
Oilseed meal	5.84	11.36	21.33
Beef & veal	11.68	9.36	128.77
Pork	20.92	18.35	68.21
Poultry meat	1.12	1.13	1.08

Source: Economic Research Service, USDA.

Table 7--Hungary, Poland and Czech Republic: Changes in production, consumption, and net surpluses of key products, 2005/2006

Commodity	Agenda 2000 without enlargement			EU enlargement		
	Production	Consumption	Net surplus	Production	Consumption	Net surplus
	Percent change from baseline					
Coarse grains	-0.33	-0.30	0.28	3.48	-8.58	-242.21
Barley	-1.32	0.69	16.19	1.93	-2.61	-32.40
Corn	0.52	-1.89	-70.05	5.93	-29.04	-3,341.54
Other	-0.19	-0.18	0.36	3.21	-3.38	-352.73
Wheat	-1.79	1.89	-75.78	-9.01	6.18	-1,295.07
Oilseeds	-0.67	0.04	-16.19	-17.57	-1.57	-434.09
Oilseed meal	0.08	-0.49	-0.87	-1.46	19.06	32.86
Beef & veal	0.91	-0.74	20.29	-0.34	-13.09	122.89
Pork	0.35	0.44	-0.80	8.37	-1.90	130.77
Poultry	0.28	0.36	5.26	3.75	-1.89	-310.00

Source: Economic Research Service, USDA.

Table 8--CEE price changes, 2005/2006: Agenda 2000 and after enlargement

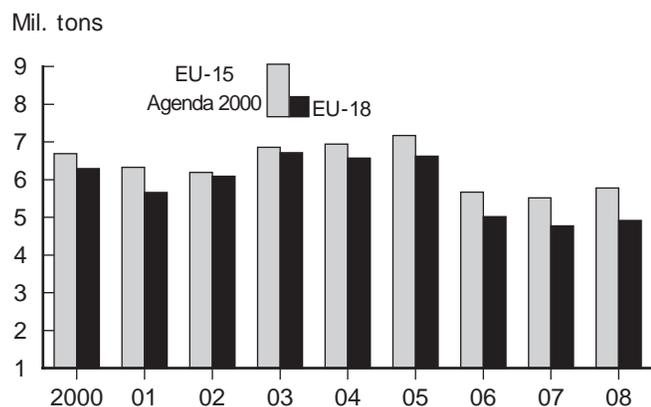
Commodity	Agenda 2000 without enlargement			EU enlargement		
	Poland	Czech Rep.	Hungary	Poland	Czech Rep.	Hungary
	Percent					
Barley	-4.79	-4.19	-4.19	-7.58	10.94	64.52
Corn	-1.66	-1.66	-1.66	-5.95	12.21	62.83
Other coarse grains	-3.12	-2.16	-1.71	10.63	10.38	-6.22
Wheat	-5.00	-5.00	-5.07	-19.72	-1.52	42.56
Oilseeds	-2.49	-2.49	-2.49	-5.91	9.40	-4.12
Oilseed meal	-3.67	-3.67	-3.67	-10.26	17.26	-4.25
Beef & veal	2.37	2.37	2.37	106.50	48.34	43.95
Pork	-1.04	-1.04	-1.04	30.71	30.88	19.26
Poultry	-1.24	-1.24	-1.24	13.60	54.54	23.00

Source: Economic Research Service, USDA.

percent higher in Hungary than in the baseline. Barley prices fall in Poland. The supply response is muted by the set-aside requirements. However, consumption declines 3 percent, and 2005/2006 net imports fall from 962,000 tons in the baseline scenario to 330,000 under enlargement. Net imports rise slightly from the baseline under Agenda 2000 without enlargement. The impact on the EU-18 is a decline in net surpluses of barley.

Other coarse grains. Rye makes up most of this category in the CEE countries. With enlargement prices increase 10-11 percent from the baseline in Poland and the Czech Republic but decline 6 percent in Hungary. The supply response is greater for rye than for barley because Poland is by far the largest producer, and most Polish producers qualify as small producers and are not subject to the set-aside requirement. As with the other grains, demand falls and the three countries switch from net importers of 274,000 tons in the baseline scenario to net exporters of 696,000 tons.

Figure 6
EU Net Barley Surplus: Under Agenda 2000 and After Enlargement

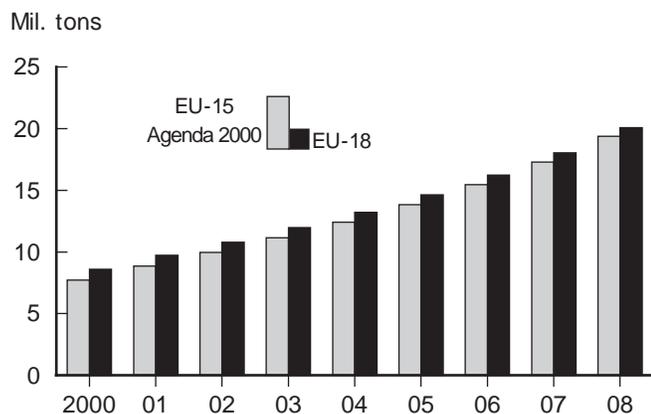


Source: Economic Research Service, USDA.

For the EU-18 the net surplus of other coarse grains rises 29 percent over that of the EU-15 under Agenda 2000. As pointed out in the Agenda 2000 analysis, EU-15 rye stocks are projected to triple by 2007. The additional CEE surpluses will further increase these stocks.

Wheat. According to our model results, accession of the three CEE countries will not create pressures for the EU-18 wheat market. Enlargement causes prices to rise 45 percent over the baseline in Hungary, while wheat prices fall in Poland and the Czech Republic. Output declines in all three countries. Hungarian producers switch to corn and barley, since prices for those commodities rise even more than the wheat price. Hungarian wheat exports rise despite the output decline, since domestic demand falls more than output. However, the rise in Hungarian exports is more than offset by increased imports by Poland and the Czech Republic. In

Figure 7
EU Coarse Grain Stocks: Under Agenda 2000 and After Enlargement



Source: Economic Research Service, USDA.

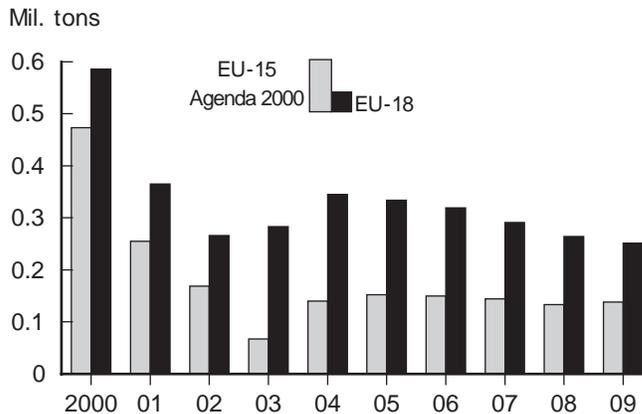
2005/2006 the three CEE countries switch from net exporters of 859,000 tons under the baseline to net importers of 1.7 million tons. The result for the EU-18 after enlargement is a 6-percent decline in the net surplus.

Oilseeds. Production, consumption, and net trade of oilseeds in the EU-18 after enlargement is nearly the same as in the EU-15 under Agenda 2000. The reason is that oilseed output declines in all three of the CEE countries. The principal oilseed produced in Poland and the Czech Republic is rapeseed; sunflowerseed is the dominant oilseed crop in Hungary. Polish rapeseed prices in the Agenda 2000 scenario are 4 percent lower in 2002 and 14 percent lower in 2008 than in the baseline scenario. Production is down 9 percent, and exports almost disappear. Under the enlargement scenario, area and production of sunflowers in Hungary are 24 percent lower than in the baseline scenario. This reflects the set-aside requirement and a shift from sunflowers to grains. In the Czech Republic, rapeseed prices are 13 percent higher in 2002 under enlargement than in the baseline scenario, but area still declines 11 percent. This apparent anomaly is most likely due to the set-aside requirement.

Imports of oilmeal by the EU-18 increase after enlargement. Total oilmeal consumption in the three CEE countries is 19 percent higher under the enlargement scenario than in the baseline (Agenda 2000 alone leads to a 1-percent decline in meal consumption.) Hungary accounts for the largest share of that increase, as livestock producers substitute meal for the more expensive grains. Imports of soymeal rise 4 percent in the Czech Republic and nearly 50 percent in Hungary. Soymeal imports by the EU-18 are 22 percent higher than in the EU-15 under Agenda 2000.

Beef, pork and poultry. Enlargement significantly affects EU-18 meat production and consumption. CEE producers see significant rises in beef and pork prices and expand output accordingly. At the same time CEE meat consumption

Figure 8
EU Net Pork Surplus: Under Agenda 2000 and After Enlargement



Source: Economic Research Service, USDA.

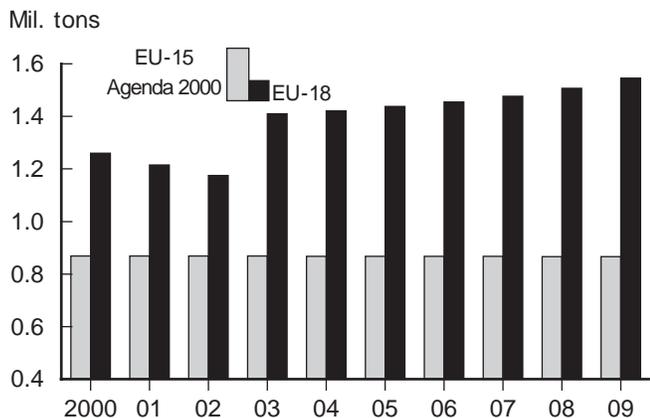
falls and surpluses rise. In 2006, net surpluses of beef, pork, and poultry in the EU-18 are 29, 66, and 7 percent higher, respectively, than those of the EU-15 in the Agenda 2000 scenario. The poultry surplus will most likely not present a problem. However, the EU-15 already has a problem with beef that will worsen under enlargement. Pork does not create much pressure for the EU-15 under Agenda 2000, but the additional pork surpluses under enlargement will most likely make it very difficult for the EU-18 to meet its export subsidy commitments.

The impacts of Agenda 2000 alone on the CEE countries are slight declines in pork and poultry prices (between 1 and 2 percent) and a 3- to 4-percent increase in the price of beef. But these changes are dwarfed by the large price increases for beef, pork, and poultry that could come with enlargement. In the enlargement scenario, pork output rises significantly from baseline levels in Poland and the Czech Republic. Hungary's pork output does not rise as much because the cost of feed rises significantly as well. Because CEE meat consumption falls, exports rise.

The largest price increases are for beef—58 percent in Hungary and 127 percent in Poland. But production increases are constrained by EU controls on the size of the dairy herd. Most CEE cattle are dual purpose dairy animals, and those numbers will not respond much to changes in domestic beef prices. In Poland, for example, only one quarter of beef production is price-responsive in 2002/03. The remainder is a function of the exogenous dairy herd sizes.

However, the price rise causes beef consumption to fall drastically, and beef exports rise. Hungary's exports, at 61,000 tons, are 50 percent higher under enlargement than in the baseline scenario. Poland's beef exports double to 112,000 tons. As a result, EU-18 beef exports are 29 percent above those of the EU-15 under Agenda 2000.

Figure 9
**EU Net Beef Surplus: Under Agenda 2000
 and After Enlargement**



Source: Economic Research Service, USDA.

Pork prices rise 23 percent in Hungary, 34 percent in Poland, and 25 percent in the Czech Republic. Hungarian pork production falls due to the rise in feed costs, but Poland and the Czech Republic see pork output increase 10 and 9 percent, respectively. Pork exports rise 54 percent in Poland, while pork exports by the Czech Republic rise 10-fold to 124,000 tons in 2003, doubling to 253,000 in 2009. The impact for the EU-18 is a rise in net pork exports of 264,000 tons. EU-18 pork exports continue to rise throughout the projection period, reaching 1.6 million tons in 2009, against 1.1 million in the base scenario for the same year.

Hungary becomes a much larger exporter of poultry meat, as exports rise from 66,000 tons to 107,000. On the other hand, Poland becomes a larger net importer of poultry, with imports reaching 101,000 tons in 2003. Although poultry prices climb 20 percent, production in Poland rises less than 1 percent because of higher feed costs. On the other hand, consumption rises 3 percent as consumers substitute poultry for beef. The Czech Republic becomes an exporter of 23,000 tons. Poultry exports by the EU-18 reach 641,000 tons in 2003, 10 percent higher than under the base scenario.

Implications for U.S. Exports. For many commodities, EU enlargement has a very small effect on U.S. exports. Net U.S. grain exports, for example, are just half a percent lower in the enlargement scenario than in the Agenda 2000 scenario without enlargement. Soybean and poultry exports hardly change. One might expect beef exports to be affected as the CEE countries adopt the EU ban on imports of hormone-treated beef. But again, according to model results, U.S. beef exports do not change much, principally because the CEE countries constitute a very small share of the U.S. beef market.

There are some changes in exports of corn, soymeal, and pork. Through the entire projection period, U.S. corn exports are displaced by CEE corn and are nearly 2 per-

cent lower under the enlargement scenario than under Agenda 2000 without enlargement. Pork exports are hit harder, falling 6 to 7 percent. In contrast, soymeal exports are 3 percent higher in 2002 and 5 percent higher in 2008 under enlargement.

Other Considerations

Our analysis suggests that enlargement could lead to increased pressures for the EU in the markets for pork, beef, and other coarse grains. Under Agenda 2000, the EU-15 is expected to have problems in these markets even without enlargement, and the addition of the three CEE countries could exacerbate these problems. However, there are three issues, in addition to those considered in our analysis, that may qualify the results. One set of issues has to do with quality differences between CEE and EU products. A second concerns productivity increases that the Structural Funds could bring to the CEE countries. Finally, any analysis needs to consider the impact of changes in the markets for primary factors of production—land, labor, and capital—that will come with enlargement.

Quality issues. It is quite likely that the price differentials underlying the model results are not all policy induced. To some extent the differences are due to quality. Polish wheat, in particular, is generally regarded to be of rather poor quality. Much of it is not of milling quality but is feed wheat, which will not be eligible for intervention in the EU. The Polish wheat price has been kept high due to heavy intervention. But in a single market, the Poles would not be able to keep Hungarian wheat out of the country, and Polish millers might find it more profitable to buy Hungarian instead of domestic wheat. As a result, Poland's wheat output could decline even more than projected by the model.

Quality is a more serious issue for the livestock sectors of Poland and Hungary. Much of the current price differential between EU and CEE countries is due to lower quality and higher transactions costs in the marketing and distribution sector. There is considerable variation in quality, particularly in the hog sector. Hogs slaughtered at the top plants are generally of pretty high quality, often having a lean meat content of 58 percent or more. But the hogs slaughtered at the smaller plants tend to have a higher fat content. The leaner, higher quality carcasses generally command a higher price—both Poland and Hungary have a system of premia for high quality carcasses. However, the live hog prices that were used in the model were an average for all hogs. All hogs marketed in the enlarged EU will have to meet the higher standards. Raising the quality of the meat requires better feeding, which entails higher production costs. In addition, most CEE livestock producers do not now comply with EU regulations on animal welfare; compliance would increase production costs still further. For these reasons, the higher prices that come with accession may not generate the projected output increases.

CEE meat output will also be constrained by the very strict EU sanitary regulations governing meat processing. Slaughterhouses will have to install equipment for measuring back fat and apply the EUROP grading system to all carcasses. They will have to meet a formidable array of requirements that include flooring, equipment, and separation of the "clean" from the "dirty" stages of processing. Of the 700 plants in Hungary, just 24 currently apply those standards. Poland has 7,000 slaughterhouses, but only 20 are licensed for exports. Experts believe another 30 could be upgraded. But half of Poland's meat output and around 40 percent of Hungary's comes from small plants that do not meet EU standards. Many of these operate on the "gray economy," and most will have to close down on accession.

Impact of institutional reforms on CEE commodity markets. To a large extent the problems of high costs and low productivity that plague CEE producers stem from the institutional shortcomings discussed and analyzed above. Polish quality problems arise from the country's fragmented farm structure and low use of chemical inputs. The fragmented farm structure persists because of a poorly functioning land market and high unemployment in non-agricultural sectors. Subsistence agriculture continues to function as a social safety net, so farmers are reluctant to give up their land. High costs are attributable to inadequate transportation and communication systems and continuing bottlenecks in the marketing and distribution system. The investment needed to upgrade production and distribution has not been forthcoming because of high interest rates, the perceived riskiness of agriculture, and poorly functioning credit markets.

These shortcomings will have to be addressed before the EU will accept the CEE countries as new members. Many of the shortcomings are already being addressed through technical assistance and EU pre-accession funds. After accession the CEE countries can expect an even larger injection of cash from the Structural Funds and private investment. According to Agenda 2000, the EU has budgeted 3.1 billion Euros per year of pre-accession aid for the six applicants (the five CEE countries and Cyprus), of which 1.04 billion are for infrastructure development and 1.5 billion are for technical assistance under the PHARE Program. After accession, all five CEE's will be eligible for payments from the Structural Funds (the cutoff is 75 percent of average EU per capita national income). These will be targeted specifically at infrastructure improvement in the poorer regions of the countries.

To receive Structural Funds from the EU, the acceding countries will have to put forward specific proposals for funding and provide 50 percent of the funding. Poland has already come under fire for failing to draft good proposals for PHARE funding, and there are doubts as to whether Poland's officials will be able to make full use of potential assistance from the Structural Funds.

Changes in factor markets. Accession will also bring some significant changes in the markets for land, labor, and capi-

tal, which could significantly affect the structure of CEE agriculture. CEE agriculture is now highly labor intensive because wage rates are low, and capital and other inputs are relatively expensive. Wages could rise significantly after accession. If labor is fully mobile throughout the enlarged EU, there will be a tendency towards convergence of EU and CEE wages. Moreover, the Structural Funds and additional investment that will likely come with accession will generate more employment in the CEE countries, putting upward pressure on wages. Higher wages will draw much of the labor out of agriculture and should lead to consolidation of farms.

On the other hand, CEE exports of live cattle and horticultural products to the EU are possible mainly because of low labor costs.⁴ In addition, many experts, both from the EU and the CEE countries, have suggested that CEE farmers could specialize in organic production, but this too is economically feasible only because of low labor costs. If CEE wages rise significantly after accession, the economic rationale for such specialization could dissipate.

Land prices will also increase. Some CEE officials have expressed the desire to retain some restrictions on land purchases by citizens from other EU countries during a transition period, but eventually, all EU citizens will have to have the right to purchase CEE land. Higher land prices would affect the production of all field crops, leading to more input-intensive production. According to the model results, CEE grain yields remain substantially lower than EU yields after accession, reflecting a continuation of current land-extensive production practices. With higher land prices, these practices will no longer be economically rational. In the livestock sector, cattle would be more affected than hogs or poultry, because they depend more on pasture for their feed.

The impacts of the Structural Funds and changes in relative prices of primary factors of production have not been analyzed in the modeling work done to date at ERS. This remains a subject for further research.

Conclusion

Overall, it appears that pressures on the CAP from the impending enlargement are not as serious as previous analysis indicated. Our analysis suggests that enlargement will bring increased surpluses of other coarse grains, pork, and poultry, but will relieve pressures in other markets.

The pressures on EU-18 markets may be even less than our analysis indicates. Results are misleading to the extent that

⁴ A Polish cattle breeder explained that he raises cattle up to 200 kilograms and then exports them to Italy. According to him, the early stages of cattle rearing require a great deal of personal attention, while the latter stages are less labor intensive. Caring for young cattle is not economical in Italy because of high labor costs, so the Italians prefer to import young cattle from Poland and other CEE countries.

price differentials reflect quality differences. The model also does not measure the impact of the Structural Funds and changes in price of primary factors. A more accurate assessment of possible output increases will require an analysis of the changes in cost structure that will come with accession. Part of the changes in cost structure will come from the new quality standards that will be imposed. Another portion of the change will come from the changes in relative prices of land, labor and capital.

Another caveat is the timetable for accession. For many reasons, most experts agree that accession is impossible until 2006 at the earliest. The CEE's have a long way to go before they meet all the institutional requirements for accession. In addition, there is growing opposition among producers to accession, particularly in Poland. Polish producers are highly suspicious of the CAP and are resisting the changes they will need to make. Czech and Hungarian producers view high support prices as the answer to all their problems. But there is a large degree of ignorance among producers in all the CEE countries about the full implications of accession. In interviews conducted by ERS researchers, Hungarian livestock producers appeared confused by EU animal welfare regulations. Polish dairy producers expressed considerable confusion about EU dairy quotas. A small poultry processor in Poland had heard that the EU will require strict labeling of carcasses, but has no idea how such labeling is to be done. A more comprehensive effort to educate CEE producers on the true costs and benefits of the CAP would better prepare them to continue producing and to thrive in a single market.

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WTO Pressures for Agricultural Policy Change

An impending trade round that further liberalizes trade does not appear to be a threat to the existence of the CAP but could constrict some commodity policies. EU enlargement does not necessarily push the CAP into difficulty with the current WTO restrictions either, although some commodities appear to be problematical for the CAP. The 1992 CAP Reform, Agenda 2000, and CEE market measures have alleviated some of the potential pressures on the CAP and further reforms along the line of the 1992 reforms and Agenda 2000 should put the EU in a good position to defend the CAP. [Todd Morath (dkelch@econ.ag.gov)]

Agenda 2000 reforms and EU enlargement have implications for the EU's ability to meet its Uruguay Round Agreement on Agriculture (URAA) commitments, and will affect EU negotiators' ability to determine the outcome of the next round of multilateral negotiations. The next round of World Trade Organization (WTO) negotiations will attempt to further liberalize agricultural trade by limiting export subsidies and domestic support and increasing market access. This article focuses on WTO pressures on EU agricultural policy through its WTO commitments, particularly the aggravation of internal supply-demand imbalances and pressure on the EU's system of intervention prices (the price at which the EU will accept commodities into storage). The article also looks at whether EU market access commitments will lead to increased imports.

An analysis of the Uruguay Round tariff reductions reveals that such reductions are not expected to create pressure on EU intervention or internal balances. Further tariff reductions for most products in the EU will be needed in the coming WTO trade talks to increase market access to the EU. The EU could also agree to a large reduction in its domestic support ceiling in the upcoming round of trade talks. Analysis shows that the EU would still be under its domestic support ceiling because Agenda 2000 reforms are projected to keep the EU's combined Amber Box (unacceptable payments-see glossary) and Blue Box payments (transitional payments temporarily acceptable-see glossary) below this level.

For export subsidies, it appears that the EU's volume export ceilings (only 79 percent of 1986-90 exports can be subsidized) will continue to be binding for a number of products, but only rye will be in chronic excess supply. The EU will likely be able to agree to substantial reductions in its export subsidy ceilings but only for wheat and other commodities such as pork and poultry that benefit from lower feed prices. However, all commodities are subject to the volume and value ceilings that constrain exports of commodities such as beef, dairy products, and coarse grains.

The prospective EU enlargement to include the Central and East European (CEE) countries of Poland, Hungary, and the Czech Republic does not greatly alter the outcome for the EU as a whole. If the Blue Box is measured against the EU's Aggregate Measure of Support (AMS- see glossary) ceiling, an enlarged EU might have more difficulty meeting its URAA domestic support commitments, although combined EU Amber and Blue Box support is still expected to remain below the final ceiling. Enlargement to include the CEE countries could increase pressure on the EU's export subsidy volume ceiling for beef, dairy products, pork, and poultry, but is expected to give the EU more flexibility in staying below its export subsidy ceilings for coarse grains. Finally, enlargement should have a largely neutral effect in terms of market access opportunities in the region.

Different approaches are used to gauge the relevance of the EU's market access, domestic support, and export subsidy commitments. With respect to EU tariff reductions, projections of price gaps between the EU and world market are compared with final EU over-quota tariffs (see glossary) to assess whether these tariffs will remain too high to increase market access. In the area of domestic support, the EU's price and income supports are compared to the EU's final ceiling (65.1 billion euros), using model projections of EU supply under the Agenda 2000 scenario (see previous article, "An Analysis of Agenda 2000"). It is also estimated that Agenda 2000 price reductions will relieve the current pressure from the EU's WTO export subsidy ceilings. The estimates are based on 1995-97 data for average EU export subsidies per ton and changes in EU prices as projected in the Agenda 2000 modeling scenario.

EU Tariff Reductions Not Expected To Increase Market Access

In the Uruguay Round, countries bound their tariffs at maximum levels and are reducing them over the implementation period (36 percent on average between 1995/96 and 2000/01

for developed countries).⁵ In the EU, increased market access could generate pressures for policy change for those products supported through intervention mechanisms, i.e. grains, beef, butter, and skim milk powder. Increased imports in combination with high production can create pressure on EU balances; the tariff-inclusive import price has to pull the domestic market price below intervention levels to trigger intervention purchasing. If the pressure is sustained, stock accumulation would be chronic, making the intervention price untenable.

To determine whether EU tariff reductions under the Uruguay Round will lead to increased market access and generate pressure for EU policy change, it is necessary to examine the extent to which there is “water” in the EU’s tariffs for agricultural goods. A “watery” tariff is one that is greater than needed to bridge the gap between the domestic and world price (in other words, a tariff is prohibitive to the extent it is watery). This is important because lowering the tariff will not increase market access until the tariff equals the percentage gap between domestic and world price. There are different ways that a tariff may become “watery.” One was the use of 1986-88 prices, which were significantly higher than the prices resulting from the 1992 package of EU CAP reforms, to calculate the base tariffs in the Uruguay Round. So-called “dirty tariffication”—e.g., calculating a base tariff using the lowest import price rather than an average import price—may also have contributed to watery tariffs for some commodities.

Methods

Calculating the margin of water is an empirical issue. Historical domestic and world prices are needed to measure the tariff equivalent (or percentage price gap), which is compared to the over-quota tariff applied during the same period. Representative world *cif* prices (inclusive of insurance and freight costs) were selected from among countries that are large producers and exporters of a given product, of comparable quality to a EU product, and at a level in the marketing chain that did not include direct or hidden subsidies. Where a farm gate, wholesale, or *fob* price was selected, a 10-percent freight/insurance margin was added to approximate the costs involved in shipping the product to Rotterdam.

The EU applies tariffs on grain imports based on a reference price system. The EU adjusts its tariffs so that the duty-paid import price of wheat, barley, rye, corn, and sorghum is maintained at 55 percent above the EU intervention price. However, the EU tariff can never exceed the maximum level stipulated in the URAA (from 2000/01, 93-95 euros per ton for common wheat, corn, barley, and rye, and 148 euros per ton for durum wheat). Because the tariff paid increases as the import price decreases, this regime distorts market prices

most for low-quality grades and least for high-quality grades (the EU also maintains a tariff rebate for high-quality wheat and barley). In 1995-97, the EU imported durum and high-quality wheat, and malting barley in volumes that exceeded reduced-duty tariff-rate quotas because of domestic needs.

EU imports of meats, eggs, and dairy products are subject to specific tariffs (i.e., in euros per unit). EU tariff equivalents for meats, eggs, and dairy products in 1995-97 varied widely by product (see fig.10). EU beef and butter—two commodities subject to EU price support policies—were priced higher relative to world markets than were pork, poultry, and eggs, commodities not subject to EU price support policies, resulting in higher tariff equivalents. The EU intervention price for skim milk powder (SMP)—which is a good approximation of the EU market price—averaged only 10 percent higher than the world *cif* price. The markedly different tariff equivalent calculations for butter and SMP reflect the EU policy of subsidizing returns on milk production mostly through the butter intervention price.

Results

A comparison of EU tariff equivalents with applied tariffs during 1995-97 reveals a substantial margin of water in the EU’s tariffs for meats and dairy products (fig.11). Between 1995 and 1997, the EU’s tariffs were very watery (i.e., much larger than necessary to bridge EU-world price gaps) for SMP, butter, and eggs. For SMP and eggs, this stems from a small price gap (tariff equivalent) and high tariffs. For butter, although the price gap was large, applied tariffs were in excess of 130 percent between 1995 and 1997. There was also some wateriness in the EU’s tariffs for pork and poultry, with over-quota tariffs substantially higher than the tariff equivalents.

The wateriness of the EU’s beef tariffs is perhaps most difficult to gauge, because prices differ substantially between the major exporting countries, particularly the United States and Argentina. The wateriness of the EU tariffs for beef is much lower if only an Argentine price (Argentina is the lowest cost exporter) is used, while it is substantially higher if a composite Argentine/U.S. price is used.

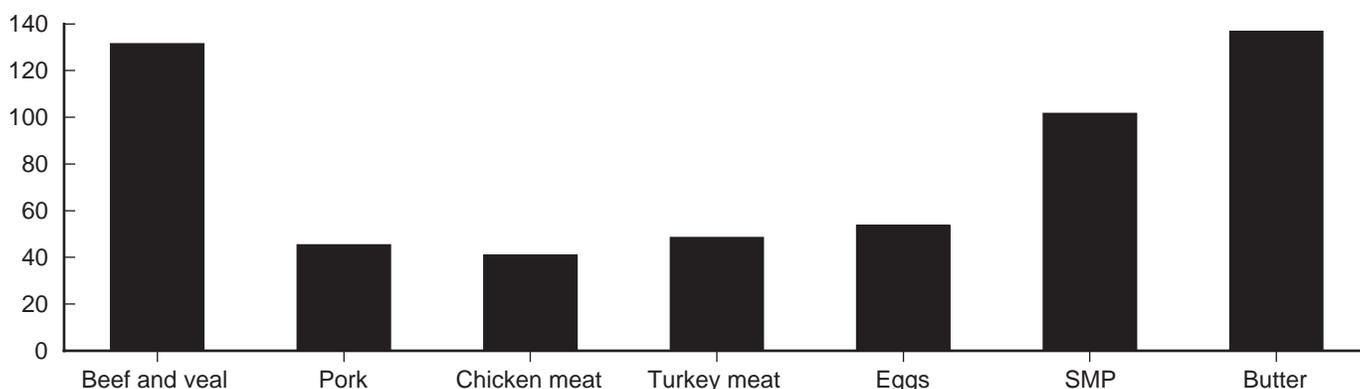
In theory, if an over-quota tariff is watery, imports should take place only within the reduced tariff-rate quota (TRQ—see glossary) volumes. In table 9, the import data relative to the TRQ volumes support the wateriness of tariff calculations for all commodities except chicken meat. The case of chicken meat illustrates why it is important to check any water calculations. While a comparison of wholesale broiler prices suggests there is water in the EU tariffs for chicken meat, the EU actually imported frozen boneless chicken well above TRQ volumes in all 3 years of the study. In 1995-97, the EU imported 46,000, 76,000, and 83,000 tons, respectively, against an annual 15,500-ton TRQ. Since 1995, the EU has twice invoked a safeguard on imports of frozen boneless chicken meat.

⁵ For general information on WTO market access disciplines and changes to EU market access policies as a result of the Uruguay Round, see the WTO Briefing Room on the ERS website (<http://www.econ.ag.gov/briefing/wto/>).

Figure 10

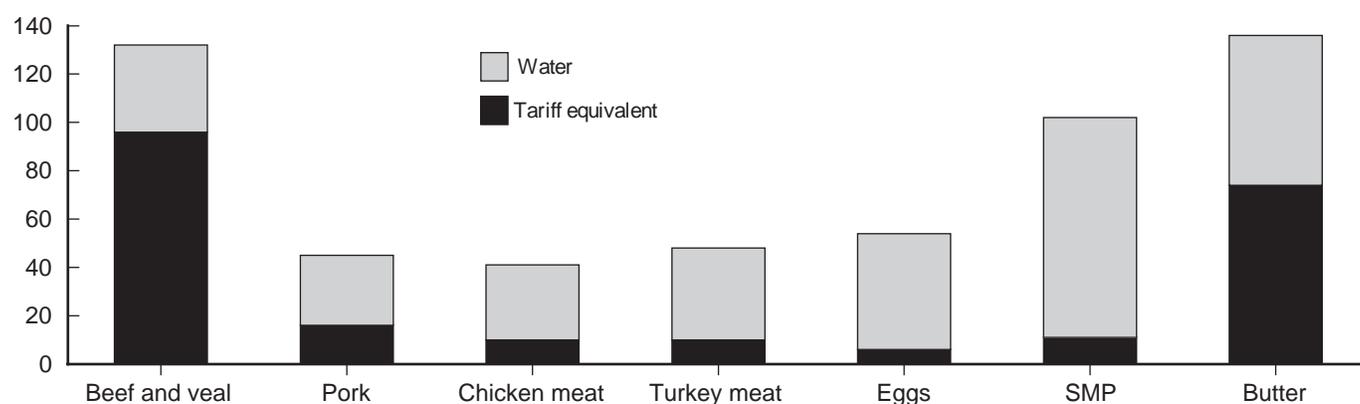
EU tariffs for Meat, Eggs, and Dairy Products: 1995-97 Average

Percent



Source: Economic Research Service, USDA.

Figure 11

Water in EU Tariffs for Selected Commodities, 1995-97Percent *ad valorem*

Source: Economic Research Service, USDA.

Table 9--Comparison of EU imports to TRQ volumes for meats and dairy products, 1995-97

Commodity	1995			1996			1997		
	Value Mil. euros	Volume 1,000 tons	TRQs	Value Mil. euros	Volume 1,000 tons	TRQs	Value Mil. euros	Volume 1,000 tons	TRQs
Beef and veal	694	162	234.4	682	180	235.6	786	200	236.3
Pork	39	14	75.0	89	37	90.7	116	46	102.4
Poultry meats	456	145	119.7	483	187	127.1	572	209	135.5
Chicken meat	220	78	65.4	271	121	70.2	337	140	74.7
Turkey meat	31	11	13.1	32	16	13.8	37	19	15.8
Eggs	3	3	81.7	5	5	95.2	6	7	108.7
Powdered milk	82	51	57.0	95	65	62.9	112	78	69.7
SMP	65	42		85	59		101	72	
Butter	162	72	83.5	167	94	85.8	168	81	88.3
Cheese, of which	393	83		405	95		441	111	
From Switzerland	303	48		280	47		274	49	
Cheddar	39	16	17.3	53	18	19.7	84	27	22.1
Cheese for processing	16	5	8.5	23	9	11.7	26	12	14.9

Source: Import data are from Eurostat; TRQ data are from Schedule CXL, Europe Agreements, and CAP Monitor.

The discrepancy highlights a shortcoming in the price comparisons for meats, namely that carcass prices do not capture certain processing costs, for example the de-boning of meat. Inexpensive labor gives countries such as Brazil and Thailand a cost advantage in labor-intensive processes such as the de-boning of poultry cuts, so that it is profitable to export to the EU even in the presence of a 50-percent over-quota tariff. Based on an inspection of EU import data, it does not appear that over-quota imports are taking place in any other category of chicken meat besides frozen boneless cuts.

How does implementation of Agenda 2000 price cuts and full Uruguay Round tariff reductions affect the wateriness of the EU's tariffs? The margin of water is determined by changes in both the tariff equivalent (percentage price gap) and the over-quota tariff. The price projections forecast a narrowing EU-world price gap for all products except poultry meats. Agenda 2000 price cuts will further narrow the price gap. These factors reduce the tariff equivalent and thus increase the margin of water. On the other hand, full Uruguay Round tariff reductions and projections of a strengthening euro act to decrease the margin of water, because they make imports cheaper.

Agenda 2000 will lower the grains intervention price to 101.3 euros per ton, which effectively reduces the maximum duty-paid import price for grains to 157 euros per ton. While lowering the EU grains intervention price will eliminate the margin of water for grains priced above 157 euros per ton (155 percent of the intervention price), it will reduce but not eliminate the margin of water for grains priced between 101.3 and 157 euros per ton, and will not reduce this margin for grains priced under 101.3 euros per ton (maintaining a 55-percent margin of water).

Figure 12 displays projections of water in EU tariffs for meats, eggs, and dairy products, taking into account the full implementation of Uruguay Round tariff reductions and

Agenda 2000 price cuts. Analysis suggests there will be no or little increase in EU market access for most products. This is partly due to lower intervention prices under Agenda 2000, which will narrow the EU-world price gap not only for beef and dairy, but indirectly for pork, poultry, and eggs by reducing feed grain prices.

The EU-world price gap for beef is projected to fall most relative to 1995-97 levels, from nearly 100 percent to slightly more than 20 percent in 2004. This is due not only to the 20-percent intervention price cut for beef under Agenda 2000, but also to projections of a falling EU market price (OECD price projections). As a result, there is a marked increase in the wateriness of the EU's beef tariffs.

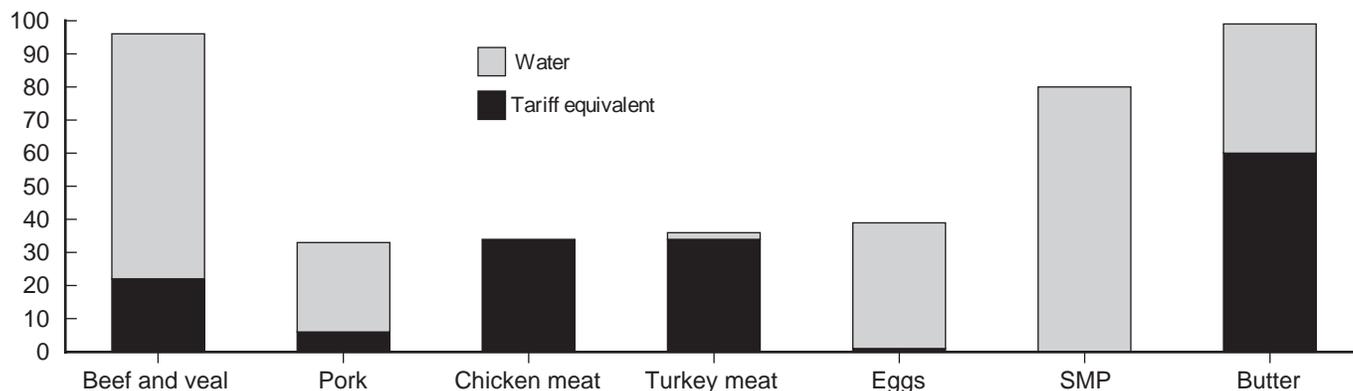
While lower Agenda 2000 grain intervention prices will reduce EU costs for poultry feeds, this only partly offsets the projected widening of the EU-world price gap for broilers. Combined with full Uruguay Round tariff reductions, the water in EU import tariffs for poultry meats is expected to decline substantially relative to the 1995-97 base period.

For SMP, butter, pork, and eggs, the water in the tariff is projected to decrease as a result of the final Uruguay Round tariff cuts, but not disappear. The most water remains in the EU's SMP tariff, which will be much higher than needed to make up the difference between the projected convergence of EU and world prices.

Agenda 2000 alleviates pressure on the CAP in terms of market access within WTO constraints because it increases "water" in the tariffs. To the extent that Agenda 2000 paves the way for CEE enlargement, less pressure on the CAP is evident than without Agenda 2000. With or without enlargement, Agenda 2000 provides the EU with more negotiating room than without Agenda 2000.

Figure 12
Water in EU Tariffs after Agenda 2000

Percent *ad valorem*



Source: Economic Research Service, USDA.

Price Support Reductions Take EU Far Below Domestic Support Ceiling

Under the URAA, developed countries committed to reducing their Aggregate Measurement of Support (AMS) 20 percent from the base period level by 2000/01. The AMS includes all forms of support that distort production or trade, and the reduction commitment relates to the total value of domestic support aggregated across all commodities, rather than to individual commodities or commodity groups.

During the GATT trade negotiations, a traffic light analogy was used to rank policies under “Amber,” “Blue,” and “Green” boxes, according to their potential to distort production and trade. The Amber Box includes production and trade-distorting policies such as market price support, direct payments, and input subsidies, and is subject to the reduction commitment. The primary component of non-exempt EU domestic support is market price support.

The Blue Box includes policies viewed as acceptable, but transitional measures that would help pave the way for further reforms over time. Direct payments to farmers that are based on historically fixed formulas for support, and which are linked to a production-limiting program, are eligible for the Blue Box. This category includes the EU’s direct income support (compensatory) payments.

Finally, the Green Box includes policies that are considered to be minimally distorting to production and trade, and is exempt from the reduction commitment. For more information, see the ERS WTO Briefing Room (www.econ.ag.gov/briefing/wto/), in particular Nelson et al., and Sheffield et al.

How will the Agenda 2000 reforms affect the EU’s level of domestic support, as measured relative to its Uruguay Round commitments? The Agenda 2000 package agreed to in Berlin in March 1999 represents a continuation of the shift away from price support towards income support (compensatory payments), begun by the MacSharry CAP reforms in 1992. As such, the Agenda 2000 reforms will reduce the level of the EU’s Amber Box price supports and increase the level of its Blue Box income supports.

Market price support is calculated as the difference between the intervention price and a fixed reference price, multiplied by the quantity eligible for support. Intervention prices under Agenda 2000 and projections of EU production and area harvested from the European Simulation (ESIM) model are used to estimate EU market price support and direct payments in 2005/06. The products analyzed in this article are grains (including common wheat, durum wheat, barley, corn, rye, oats, sorghum, triticale, and rice), beef, SMP, and butter. These products are selected because they represent the majority of the expenditure on CAP products and because they are of interest to the United States. It is assumed that price support for products not affected by

Agenda 2000— sugar, tomatoes, apples, and wine— remains at the 1995-97 average of 22.3 billion euros.⁶

EU market price (Amber Box) support is projected to fall 29 percent to 35.0 billion euros, due to the cuts in intervention prices for beef, grains, and dairy under Agenda 2000 (table 10). The gap between the EU and the external reference price will fall, although a positive price gap (relative to the URAA-fixed reference price) is projected to remain for all products except durum wheat and oats. Although production of grains under Agenda 2000 is projected to rise, overall market price support for grains falls because of the smaller price gap.

Lower support prices for beef account for much of the drop in EU market price support. The current market support price for beef (2,780 euro/mt) will be reduced by a total of 20 percent over 3 years to 2,224 euro/mt in 2002; this new price being called the basic price.⁷

In contrast to the fall in Amber Box payments, the EU’s Blue Box (partially decoupled direct support—see glossary) payments under Agenda 2000 are projected to rise to 26.3 billion euros by 2008, due to increases in arable crops payments as well as beef premia (table 11). The EU’s set-aside payment under Agenda 2000 will rise because the payment rate per hectare for grains increases from 54 euros to 63 euros per ton. The model results (see Leetmaa and Bernstein in this report) show that EU area harvested to grains increases 3 percent relative to 1995-97 levels. The increase in compensatory payments for grains is expected to be partly offset by declines in payments for oilseeds because: 1) the pay rate per hectare for oilseeds decreases from 94.24 euros to 63 euros per ton, and 2) the pay rate per hectare decreases on EU set-aside land for oilseeds from a current value of 68.83 euros per ton to 63 euros per ton (EU Commission, March 1999).

The best available estimate of the projected increase in EU beef premium payments is based on the EU Commission’s financial impact analysis of October 1998 (EU Commission, 1998), which will be revised later this year to incorporate final changes. According to the Commission analysis, Common Budget outlays for beef will rise 2.0 billion euros due to increased headage payments. It is necessary to add an amount representing the decrease in budgetary outlays as a result of the expected reduction in EU export subsidies for beef as well as intervention storage. These reductions amounted to an estimated 0.5 billion euros, based on recent levels of EU beef export subsidies and intervention stocks.

For a transitional period under the Uruguay Round, the Blue Box is not measured against the domestic support ceiling, so

⁶ Although Agenda 2000 repeals several regulations on wine, it does not significantly alter the system of intervention prices.

⁷ The current EU intervention price for beef is 3,475 euro/mt so the reduction from the intervention price to the basic price represents a decline of 36 percent. However, the EU *intervention* price is the highest administrative price for beef and is not reflective of actual market price support in the EU.

Table 10--Agenda 2000 scenario for AMS in 2005/06

Commodity	Applied admin. price (1)	External refer. price (2)	Eligible production (3)	Assoc. fees/levies (4)	Total AMS, Agenda 2000 = [(1)-(2)]*(3) - (4)	Total AMS, unchanged CAP
	Euros/ton		Mil. Tons		Million euros	
Common wheat	101.3	86.5	99.4		1,473.2	3,070.4
Durum wheat	101.3	148.5	8.9		0.0	0.0
Barley	101.3	67.3	52.7		1,792.9	2,683.2
Maize	101.3	91.9	37.5		353.3	988.3
Rye	101.3	67.3	6.4		218.9	316.7
Oats	97.2	112.5	6.8		0.0	12.3
Sorghum	101.3	85.7	0.6		9.4	19.1
Triticale	101.3	67.3	3.7		124.3	179.8
Rice	373.8	143.3	1.8		414.9	414.9
White sugar	631.9	193.8	14.2	457.5	5,763.6	5,763.6
SMP	1,746.9	684.7	1.3		1,327.8	1,713.1
Butter	2,789.7	943.3	1.8		3,323.5	4,209.7
Beef	2,224.0	1,729.8	7.5		3,706.5	13,263.5
Subtotal					18,508.0	32,634.6
Other AMS					16,539.0	16,539.0
Current Total AMS					35,047.0	49,173.6

Source: ESIM and CAP Monitor.

Table 11--EU Blue Box payments in 2005/06 under unchanged CAP and Agenda 2000 scenarios

Commodity	1995/96	1996/97	Baseline	Agenda 2000
	Million euros			
Maize	973.0	1,222.8	1,097.6	1,359.2
Other cereals	8,638.6	10,001.2	9,004.4	11,103.9
Oilseeds	2,381.0	2,439.4	2,414.9	1,740.1
High protein crops	522.7	525.0	523.9	487.7
Flax seed	72.4	96.5	84.5	98.5
Durum wheat	948.3	1,827.8	1,351.8	1,439.5
Set-aside land:				
Compensation	2,112.1	1,080.6	5,587.2	2,922.3
Beef sector	3,876.6	3,320.9	3,550.8	6,088.8
Suckler cows	2,446.4	2,042.9	2,244.7	
Male bovine	1,407.2	1,238.5	1,274.9	
Deseasonalization	23.0	39.5	31.3	
Ewe/goats	1,320.8	1,006.6	1,163.7	1,163.7
Total Blue Box	20,845.5	21,520.8	24,778.8	26,403.6

Source: ESIM and Eurostat.

that countries are deemed to meet their commitment if their Amber Box price support lies beneath this ceiling. While the EU's ceiling will reach 65.1 billion euros from 2000/01 onwards, the EU's Amber Box is projected to fall to 35.0 billion euros. As long as the transitional provisions apply, there will clearly be no pressure on the EU's ability to support domestic market prices or make compensatory payments to farmers.

Volume Ceilings Expected To Bind EU Export Subsidies for Some Products

How does Agenda 2000 affect the EU's ability to meet its export subsidy commitments, relative to its ability to do so under the current CAP? The analysis is limited to grains and livestock products (including meats, eggs, and dairy products), as Agenda 2000 does not alter the regimes for other

subsidized products including sugar, fruits and vegetables, and olive oil.

Based on EU export subsidy outlays in 1995/96 and 1996/97 (notified to the WTO), a comparison with final commitments (from 2000/01) suggests that under the current CAP policies, the EU's final value commitments would likely exceed the ceiling for beef, rice, and other dairy products, and could also exceed the ceilings for cheese and poultry meat, while the EU's final volume commitments would most likely exceed the limits for coarse grains, cheese, other milk products, beef, and poultry meat.

The ratio of subsidized exports to total exports and the value of the per unit subsidy as a percentage of product price are other important factors that determine how binding the EU's export subsidy ceilings are under the current CAP and may be after implementation of Agenda 2000 reforms. The volume of EU exports subsidized as a percentage of total—i.e., both subsidized and unsubsidized—exports averaged more than 80 percent for coarse grains, rice, butter, SMP, cheese, other milk products, beef, and eggs. From the EU's notifications, average export subsidies per unit indicate that EU-world price gaps in 1995-97 were highest in percentage terms for coarse grains, rice, butter, and beef. Commodities requiring the highest subsidy per unit (as percentage of price) indicate that the volume restriction will be most binding.

Agenda 2000's lowering of intervention prices for grains, beef, SMP, and butter will result in lower EU market prices, and lessen the need for export subsidies to bridge the price gap with world markets. The analysis of Agenda 2000 (see Leetmaa and Bernstein) concludes, however, that the EU will continue to need subsidies to export most of its agricultural products.

One effect of Agenda 2000 on the EU's WTO commitments is that under the lower intervention prices, the URAA volume restrictions will play an increasingly important role in limiting the EU's use of export subsidies. The lower Agenda 2000 prices will reduce the average export subsidy value per unit for those products directly affected under the reform package, as well as pork, poultry, and eggs through lower feed costs. The trend of volume restrictions being most binding compared to value restrictions was already observable in the 1995-97 EU notification data for grains, meats, and dairy products, and this trend will be accentuated under Agenda 2000.⁸

The estimates suggest that for wheat and eggs, the EU will need no or minimal export subsidies because of high world prices for these commodities (table 12). For other products, however, the EU will still require subsidies to export at least a portion of production. The highest dependence on export subsidies, in terms of both volume and value per unit, will be for coarse grains, rice, butter, and beef. In 1995-97, nearly the entire quantity exported of these products relied on export subsidies. After Agenda 2000 reforms are implemented, the estimated average subsidy as percentage of product price ranges from 10 percent for barley to 75 percent for rice. To a lesser extent, the EU will also remain dependent on export subsidies for SMP and cheese, which in 1995-97 were highly subsidized in terms of the percentage of total export volume, but which were given a low average subsidy expressed as a percentage of product price.

Based on calculations of post-Agenda 2000 per unit export subsidies, the volume commitment is estimated to be exceeded first for all products except rice.⁹ In other words, at the lower per unit subsidies required to export under Agenda 2000 prices, the EU is expected to meet its volume ceiling before it can spend the total amount permitted under

its value ceiling. This will happen most quickly for barley, SMP, pork, and cheese, but also for the remaining subsidized products.

EU Enlargement Has Only Marginal Effect on WTO Commitments

Extension of the CAP in its current form to countries of Central and Eastern Europe (CEE) is expected to result in higher production of most commodities compared to the CEE countries outside of the CAP because of higher CAP prices. These production increases may be difficult to absorb internally, placing pressure on EU internal prices and thus the EU's ability to meet its domestic support and export subsidy reduction commitments. How are these issues resolved under Agenda 2000's changes to the CAP? The accession of Poland, Hungary, and the Czech Republic—the largest producers slated for early accession—could allow the EU to export more product without subsidy for some products under the Uruguay Round, but the overall effect is marginal. Although EU domestic support levels will increase as a result of enlargement, the EU is expected to remain far below its AMS ceiling, thanks in part to lower prices under Agenda 2000.

The impact of the membership of Poland, Hungary, and the Czech Republic is calculated vis-a-vis the EU's Amber and Blue Boxes, using ERS enlargement scenario modeling results for 2005/06 for principal commodities (grains, oilseeds, meats, and eggs) and 1996 production data for non-modeled products that are significant to the analysis (butter, SMP, sugar, apples, and tomatoes). One additional assumption required is about the terms of accession, which are still uncertain. It is assumed these CEE countries will benefit from the CAP's arable crop compensatory payments and the various beef sector premia.

Poland, Hungary, and the Czech Republic's membership in a CAP reformed by Agenda 2000 is estimated to result in 4.1 billion euros of additional Amber Box market price sup-

⁸ High world prices for grains in 1996-97 also influenced this result.

⁹ Calculations are available from author upon request.

Table 12--Average export subsidy per unit: Comparison of 1995/96-1996/97 to Agenda 2000

Commodity	Euro per ton			Percent of price		
	1995	1996	Agenda 2000	1995	1996	Agenda 2000
Wheat and flour	43	22	0	29	16	0
Barley	46	33	15	34	27	15
Oats	46	33	15	31	26	16
Rice 1/	342	319	330	77	79	78
Butter/butter oil	1,750	1,999	1,382	53	61	50
Skim milk powder	584	631	299	28	31	17
Cheese	1,036	675	396	29	18	12
Bovine meat	1,478	1,297	874	56	51	42
Pigmeat	266	249	161	19	15	11
Poultry meat	277	182	167	23	13	13
Eggs	136	102	22	14	9	2

1/ As Agenda 2000 does not affect the intervention price for rice, it is assumed that the average export subsidy per unit remains constant.

Intervention prices are used for grains, SMP, and butter. The beef price is estimated to fall 20 percent below the 1995-97 market price. Pork, poultry, and egg prices are estimated to fall 5-8 percent (due to lower feed costs) relative to the 1995-97 base period.

Source: Agenda 2000 scenario results.

port (table 13) and 3.0 billion euros of Blue Box direct payments (table 14). The additional Amber Box support mostly comes from CEE production of grains, butter, apples, and sugar. This results in a projected EU-18 AMS of 38.3 billion euros that falls well below the combined EU-18 ceiling, estimated at 68.5 billion euros (based on exchange rate projections). Therefore, EU enlargement has a negligible effect on the EU's ability to meet its URAA domestic support ceiling. (Effects including the Blue Box are discussed in the following section on "WTO Pressures for EU Policy Change".)

What effect is the prospective enlargement to include the CEE countries expected to have on the EU's ability to meet its export subsidy commitments? For products not subject to intervention, the issue is whether enlargement gives the EU more or less flexibility in using export subsidies. For products subject to intervention, enlargement also has the potential to aggravate intervention stocks. High EU intervention prices could stimulate supply and depress demand in the

CEE countries, creating excess supply on the enlarged EU market in need of disposal.

Except for 1995 when Hungary overshot its export subsidy commitment for corn, WTO notifications indicate that all three countries have applied export subsidies for nearly all products far below their ceilings. Combined CEE export subsidy ceilings are highest for meats, followed by those for fruits and vegetables (table 15). The CEE allowances could more than double an enlarged EU's ceiling for fruits and vegetables, and could significantly increase the EU ceilings for pork and poultry meat. For grains, however, adding the CEE ceilings to the existing EU-15 ceiling has little effect. For dairy products, only the EU's export subsidy ceiling for SMP will increase significantly (roughly 50 percent).

When the EU enlarges to include CEE and other Eastern countries, the EU's export subsidy ceilings will be increased by the amount of the acceding countries' ceilings, net of

Table 13--Amber Box under Agenda 2000 and enlargement for CEE countries

Commodity	Applied	External	Poland	Hungary	Czech	EU-18	Total market price support = [(1)-(2)]*(3)
	admin. price (1)	refer. price (2)					
	Euros/mt.		Million tons			Mil. euros	
Common wheat	101.3	86.5	9.1	5.1	4.0	18.2	269.7
Durum wheat	101.3	148.5				0.0	0.0
Barley	101.3	67.3	3.4	1.4	2.5	7.3	248.3
Maize	101.3	91.9	0.2	5.5	0.2	5.9	55.9
Rye	101.3	67.3	7.0	1.7	0.3	8.9	301.9
Oats	97.2	112.5		1.7	0.3	1.9	0.0
Sorghum	101.3	85.7		1.7		1.7	26.2
Triticale	101.3	67.3	7.0	1.7		8.6	293.4
Rice	373.8	143.3				0.0	0.0
White sugar 1/	631.9	193.8	0.4	0.6	0.7	1.7	735.2
SMP	1,746.9	684.7	?	?	?	0.0	0.0
Butter	2,789.7	943.3	?	?	?	0.0	0.0
Beef	2,224.0	1,729.8	0.4	0.1	0.3	0.9	425.0
Subtotal							2,355.6
Other AMS (assumed 5 percent increase from EU-15)							827.0
Total Current AMS, EU-18							3,182.6

1/ Sugar production data are for 1997, taken from CEE statistical yearbooks. Sugar beet production is multiplied by 16 percent sugar yield and multiplied by 92 percent average extraction rate to arrive at white sugar production.

Source: CAP Monitor and CEE statistical yearbook.

Table 14--Estimated Blue Box payments under Agenda 2000 in the CEE countries

	Arable crops				Beef				
	Arable base area (1)	National compens (2)	EU-15	CEE	CEE slaughter (5)	EU-15 slaughter (6)	EU-15	CEE	CEE Blue Box total = (4)+(8)
			grain yield (3)	comp. payments (4)=(1)*(2)*(3)			comp. payments in 2005 (7)	comp. payments estimate (8)=[(5)/(6)]*(7)	
			Tons/ha.	Mil. euros			Mil. head	Mil. euros	
Poland	9.1	63.0	2.3	1,318.6	2.8	28.3	6,088.8	605.6	1,924.2
Hungary	3.3	63.0	2.3	478.2	1.0	28.3	6,088.8	215.0	693.2
Czech Republic	1.9	63.0	2.3	275.3	0.6	28.3	6,088.8	136.3	411.6
Total CEE				2,072.1				956.9	3,029.0

The 2005/06 projections of production are made under the assumption of no CAP membership. Because CAP membership is expected to result in higher production of most commodities, these projections provide a conservative estimate of the increase to the EU's Blue Box as a result of CEE accession.

Source: Economic Research Service, USDA.

subsidized trade between the EU and CEE.¹⁰ To analyze the impacts for both non-intervention and intervention products, model projections of CEE exports are compared to additional export subsidy ceilings that the EU would acquire as a result of enlargement, net of historically subsidized EU exports to the CEE countries. Given the result (see previous discussion on export subsidies) that the EU's volume ceilings are expected to bind first under Agenda 2000, the analysis focuses on an enlarged EU's volume ceilings. Net exports are used for relatively homogeneous products like grains, SMP, butter, and eggs, while gross exports are used for heterogeneous products like meats. Results are listed in table 16.

Non-intervention products (pork and poultry). EU prices for pork and poultry are not much higher than world market levels and only high-cost EU producers require export subsidies for these products. The question is whether the CEE countries can remain low-cost producers after accession (see Cochrane article). CEE ceilings for pork and poultry, net of historically subsidized trade, are less than projected export levels, with the potential to give the EU less flexibility in meeting its commitment. However, if the CEE countries remain low-cost pork producers and do not require export subsidies (as is presently the case), the ceilings will add a measure of flexibility in meeting the EU's overall commitment.

Intervention products (grains, beef, SMP, butter). It is likely that CEE accession will marginally ease the pressure on an enlarged EU's export subsidy ceilings for coarse grains. The model results show that the CEE countries will remain net

importers of barley and other coarse grains (nearly 1 million tons). While enlargement is estimated to actually reduce the EU's export subsidy ceiling for coarse grains by almost 0.3 million tons (due to the fact that most EU coarse grain exports to the CEE countries are subsidized), the CEE countries are projected to remain net importers of more than 0.8 million tons in 2005/06, so that the EU will have more flexibility meeting its commitment for coarse grains. On the other hand, enlargement is likely to give the EU less flexibility in meeting its beef ceiling: projected gross CEE exports of beef are more than 70,000 tons over the additional EU export subsidy ceiling, net of subsidized trade. Although CEE beef production is restrained through the adoption of EU dairy quotas, large price increases drive down consumption, creating greater CEE surpluses.

For dairy products, the CEE countries will be subject to milk production quotas under the CAP, which effectively limit growth in their production of SMP, butter, and cheese. Although CEE exports were mostly unsubsidized in 1995-97, the high EU price for SMP will increase the reliance of Polish and Czech exports on subsidies. Because CEE surpluses of SMP and butter exceed their volume ceilings (none of the countries has a ceiling for butter), it is expected that CEE accession will increase pressure on an enlarged EU's ability to meet its SMP and butter export subsidy commitments.

Other products (fruits and vegetables). With respect to fruits and vegetables, combined CEE ceilings exceed that of the EU. Because the current EU's ceilings have already become binding, this extra amount should give an enlarged EU an additional measure of flexibility. However, adoption of the CAP system of price supports for fruits and vegetables is expected to result in higher prices for these products

¹⁰ E.g., as was done following the 1995 accession of Austria, Finland, and Sweden.

Table 15--EU-15 and CEE export subsidy volume commitments

Commodity	EU-15	Poland	Hungary	Czech Republic	EU-18	Percent change
						EU-18/EU-15
			1,000 tons			
Wheat and flour 1/	13,826		1,141	66	15,033	9
Coarse grains 2/	9,126		164		9,290	2
Sugar	1,032	104	32	5	1,173	14
Butter/butter oil	324				324	0
Skim milk powder	222	37		67	326	47
Cheese	286				286	0
Other milk products 3/	788	15	2	63	867	10
Bovine meat 4/	728		83	50	860	18
Pigmeat 5/	359	81	126	10	576	60
Poultry meat 6/	297	13	111	23	444	49
Eggs	84				84	0
Wine (1000 liters)	1,895		41	4	1,939	2
Fruit and vegetables	727	494	284	9	1,513	108

1/ Cereals and flour for Czech Republic.

2/ corn for Hungary.

3/ commitment for Poland is casein.

4/ includes cattle for slaughter for Hungary.

5/ includes hogs for slaughter for Hungary; "meat" and "meat products" for Poland.

6/ broilers for Hungary; includes poultry products and eggs for Czech Republic.

Source: EU, Poland, Hungary, and Czech Republic WTO Schedules.

Table 16--Net impact on CEE export subsidy ceilings following enlargement, 2005/06

Commodity	EU-18 exports (1)	EU-15 exports (2)	Difference (3) = (1) - (2)	CEE ceilings (4)	Minus subsidized EU exports to CEE 4/ (5)	Net change in EU-18 export subsidy ceiling (6) = (4) - (5)	Compare (3) to (6)	Ending stocks, 2005/06		
								EU-18	EU-15	Difference
						1,000 tons				
Barley 1/	6,715	7,168.5	-454	82	297	-215	more flexible	7,788	7,052	736
Other coarse grains 1/	607	990.0	-383	82	123	-41	more flexible	14,625	13,848	777
SMP 2/			162	104	0	104	less flexible	0	0	
Butter 3/			41	0	2	-2	less flexible	0	0	
Beef	759	574.0	185	133	18	115	less flexible	310	220	90
Pork	1,527	888.8	638	217	19	197	potentially less flexible	319	239	80
Poultry	1,048	903.2	145	147	10	136	potentially less flexible	305	260	45
Eggs	-223	20.8	-244	***			more flexible	64	35	29

1/ The EU has a combined ceiling for barley and other coarse grains. Thus for accounting purposes, the CEE ceiling is split evenly across the two products.

2/ CEE exports of SMP are averaged for 1995-96 in column (3), using export subsidy notification data (ES:1 Total Exports).

3/ CEE exports of butter are from statistical yearbook data.

4/ Subsidized EU exports to CEE are calculated as total EU exports to CEE (source: UN trade data, average 1995-97) multiplied by the ratio of subsidized to total EU exports of the given product (source: EU export subsidy notifications for 1995-96). Net exports for grains, dairy products, eggs; gross exports for beef, pork, poultry.

*** Czech Republic has 23,000 tons combined for poultry meat and eggs.

Source: Economic Research Service, USDA.

in the CEE countries, so that subsidies may be required for Polish, Hungarian, and Czech exports.

WTO Pressures for EU Policy Change and Implications for the Next Round

The EU's market access and domestic support commitments under URAA are not expected to place pressure on EU intervention prices. EU tariffs will remain sufficiently high to insulate the EU from world markets, allowing it to maintain its intervention prices at Agenda 2000 levels. Additionally, the persistence of water in the EU's tariffs results in no expansion of EU market access as a result of URAA tariff reductions, with the exception of chicken meat. EU domestic support reduction commitments are easily met, given that Blue Box direct payments are not measured against the ceiling.

The EU's export subsidy ceilings are expected to bind for coarse grains, SMP, cheese, beef, and poultry meat. However, WTO export subsidy ceilings create pressure on internal balances only where the EU is faced with the long-term accumulation of intervention stocks. According to Agenda 2000 results from the ESIM model and the analysis, stocks of barley, beef, butter, and SMP will fall or come into balance by 2006. The accumulation of intervention stocks is expected to be a problem for other coarse grains, particularly rye, although barley consumption will lower stocks. However, because Agenda 2000 price cuts in most cases do not go far enough to make the EU competitive on world markets, the EU's export subsidy ceilings for coarse grains, dairy products, and beef will limit its ability to tap into new opportunities associated with growing world food demand. Increasing EU competitiveness is frequently cited as a main goal of Agenda 2000, and it will likely be evoked in following rounds of CAP reform until price supports are sufficiently lowered.

Where do Agenda 2000 and prospective eastward enlargement place the EU in terms of its ability to agree to further agricultural trade liberalization? There is not expected to be significant expansion of EU imports, so that substantial EU tariff reductions from final URAA bindings will be needed for dairy, beef, pork, and eggs before an increase can be expected in EU market access. Except for periods of very high world prices, the EU's reference price import system for grains will continue to prohibit imports of other than high-quality grades, such as premium milling wheat and malting barley. Therefore in the upcoming WTO round, the EU could agree to large reductions in tariffs across the grains, livestock, and dairy sectors.

The EU could also agree to a substantial reduction in its domestic support ceiling in the upcoming round of trade talks. The projections show that this reduction could be 50 percent or greater before the EU would feel any pressure to change its domestic support policies. However, the exempt status of Blue Box payments may change in the upcoming round, as some countries are calling for an end to this transitional arrangement. On the other hand, the EU's augmented use of Blue Box payments under Agenda 2000 is likely to increase its reluctance to eliminate the exempt status of the Blue Box. The EU's compensatory payments do not qualify as minimally production-distorting (Green Box), because they are not fully decoupled from the farmer's decision to produce, and therefore will continue to be classified under the Blue Box.

Removing the exempt status of the Blue Box would increase pressure on the EU's domestic support ceiling. However, if the Blue Box is included in the measurement, it is likely that the EU would still be able to meet its URAA domestic support ceiling, because Agenda 2000 reforms are projected to bring the EU's combined Amber and Blue Box payments

Estimating Water in EU Tariffs For Selected Agricultural Products

The EU's tariffs for meats, eggs, and dairy products are examined to determine whether they are prohibitive; i.e., larger than needed to make up the difference between the EU domestic price and the world import price. The EU-world cif price difference for a product is defined as the "tariff equivalent," or T^e . The extent to which a tariff is prohibitive can be described as the difference between the applied tariff, T^o , and the tariff equivalent, or $T^o - T^e$. This difference is described as the "water" in the tariff, T^w . In other words, an applied tariff is watery to the extent it exceeds the tariff equivalent.

Methodology

The methodology used to calculate the "wateriness" of an EU over-quota MFN tariff for a given year is the following:

1. Calculate the tariff equivalent, T^e , defined as the percentage difference between the EU domestic price and a representative world price inclusive of transport costs (where a cif value is not available, a 10-percent transport margin is added);
2. Calculate the water in the tariff, T^w , by subtracting the tariff equivalent from the *ad valorem* over-quota tariff, T^o , which is aggregated across sub-products as a simple average. EU specific tariffs (per kilogram basis) are converted to *ad valorem* equivalents using Eurostat import unit values.
3. Check the wateriness of the tariff—calculated in (2) above—by comparing Eurostat import data to TRQ volumes. The aim is to verify whether in fact the EU imported only in-quota at the reduced tariff, or over-quota at the higher tariff. In theory, a watery over-quota tariff signifies that the tariff was prohibitively high. Therefore, if the calculation for a product suggests that there was water in the tariff, the import data for that product should show that the EU did not import over-quota. For meats, there is another reason why it is necessary to cross-check a water calculation with import data. Because the price data for meats reflect carcass prices at a wholesale or farm gate equivalent level, some processing costs—such as deboning cuts of meat—are not captured in the tariff equivalent calculation. Another reason it is advisable to take step (3) is related to the high level of product aggregation involved in estimating the tariff equivalent. Because a country may have "tariff peaks" within a given aggregation, the margin of water could vary by sub-product, it could be importing some products over-quota but not others. One implication for the upcoming WTO trade talks: It may be necessary to reduce some tariffs more than others to eliminate any margin of water.

4. For Agenda 2000: The water in EU tariffs under Agenda 2000 is estimated by adjusting EU price projections to reflect Agenda 2000 price cuts. Changes in EU pork, poultry, and egg prices reflect price declines in the ESIM Agenda 2000 scenario relative to ERS baseline projections. Changes in the EU's applied tariffs are the most straightforward part of the analysis, as they are contained in the EU's Uruguay Round commitments. Changes in the tariff equivalent (i.e., the projected EU-world cif price gap) depend on EU and world trends in supply and demand, Agenda 2000 price cuts, and exchange rate projections. Trends in supply and demand are captured by the OECD and ERS price projections through 2004; these prices are then modified by amounts corresponding to Agenda 2000 price cuts.

Average export refund data from the EU's WTO notifications can also be used as a measure of the gap between EU and world market prices (Tangermann, 1999). However, this method is less useful, because it doubly underestimates the water in the tariff. First, because exporters must factor the cost of shipping into their subsidy bids, the export subsidy overestimates the gap between EU and world price. Second, the export subsidy does not account for the world price fob – cif differential. One way these shortcomings could be addressed is to subtract transport costs for the EU fob-cif price differential and for the world fob-cif price differential from the average export subsidy. Average EU export subsidy data are used in this article only as a second check against the results.

Data Sources

Price data are from OECD, the 1999 ERS Baseline, IMF International Financial Statistics, and the EU Commission. Import data and import unit values for 1995-97 are compiled from Eurostat. EU applied and bound tariffs are from UNCTAD. The EU's TRQs come from country schedule CXL, notified to the WTO; additional TRQs were compiled from the EU's preferential agreements with Central and Eastern European countries (Europe Agreements), African Pacific and Caribbean countries (Lome Convention), and Mediterranean countries (Euro-Med Agreements).

OECD-PSE price calculations are less suitable than a carcass price to calculate the wateriness of tariffs for cuts of meat. Producer subsidy equivalent (PSE) prices are weighted averages meant to capture support across an entire sector. The methodology for calculating this weighted average may vary across countries. Therefore, it is more suitable to use a dressed weight market price.

below this level. Because the last two rounds of CAP reform have reduced market price support more than they have increased direct payments, further CAP reform along those lines would have the same effect of reducing the overall level of EU domestic support. If the EU further reduces its applied administered prices for major commodities such as grains and dairy, the EU could agree not only to making the Blue Box non-exempt, but also to a certain reduction in its domestic support ceiling.

In the area of export subsidies, it appears that although the EU's volume ceilings may be binding for a number of products, they will present a real problem of chronic excess supply in grains only for rye. Given the projection of rising rye intervention stocks, this WTO pressure may require further cuts in the EU's grains intervention price, or a departure from a unified grains price by lowering the rye price. On the other hand, the EU will likely be able to agree to substantial reductions in its export subsidy ceilings for wheat, pork, poultry, and eggs. Although the EU will continue to require export subsidies for beef, the projections show a roughly balanced EU market for beef, indicating that the accumulation of unexportable intervention stocks is not on the horizon.

The prospective EU enlargement to Poland, Hungary, and the Czech Republic does not greatly alter the picture. With respect to domestic support, the combined increase in EU Amber and Blue Box support is greater than the CEE combined final AMS ceilings of approximately 3.4 billion euros (based on 1999 USDA Baseline exchange rate projections). If the Blue Box is measured against the EU's AMS ceiling, the CEE accession could make it somewhat more difficult for an enlarged EU to meet its URAA domestic support commitments, as combined EU Amber and Blue Box support, at 68.4 billion euros, is expected to be very close to the final ceiling of 68.5 billion euros.

Enlargement to CEE is expected to give the EU more flexibility in meeting its export subsidy ceilings for coarse grains, but it could increase pressure on the EU's export subsidy ceiling for beef, dairy products, pork, and poultry. For market access, acceding CEE countries will adopt the EU's tariff schedule. The most important implication for the United States and other trading partners will be to negotiate compensation for exports lost to acceding countries as a result of higher tariff bindings. Compensation, if properly calculated, should have a neutral effect on U.S. exports.

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Consumer Concerns Elicit Policy Changes

Issues relating to the safety and quality of food, as well as issues related to the way that food is produced, are leading to policy changes in the EU that have implications for agricultural production and trade. Consumer concerns and the policy changes they are bringing about also promise to complicate the outcome of policy reforms brought about by market pressures.
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EU consumer concerns about the quality and safety of their food have been documented repeatedly in consumer surveys (table 17), and encompass such diverse issues as pathogens, pesticides, biotechnology, and animal welfare. Consumer preferences in this area generally fall into two categories: concerns about food safety and quality, and concerns about the methods of food production. This article does not attempt to determine whether the consumer concerns are valid, but rather looks at the reasons for them and the ways in which they are effecting EU policy changes, which in turn have implications for trade.

Reasons for Consumer Concerns

Product Concerns

Consumer concerns regarding food safety can be traced to recent microbial or disease outbreaks, including of salmonella, listeria,¹¹ and, most importantly, Bovine Spongiform Encephalopathy (BSE), or “Mad Cow Disease.” Whether concerns for the safety of the food supply are justified, EU consumers have changed their consumption behavior in response to these outbreaks. Poultry and egg consumption declined following the early 1990s salmonella outbreak (*Western Europe Agriculture and Trade Report*, 1990). Beef consumption in the EU fell immediately following the BSE scare and has not recovered to the pre-crisis trend level. Consumer surveys have reported that some consumers are responding to the BSE scare by eliminating or reducing beef from their diets, and others found that consumers had low confidence in the safety of fresh meat (Demoskopie Allensbach, 1996; Gallup, 1996; Eurobarometre 49, 1998). Beef’s share of EU consumer expenditures is projected to remain depressed due to concerns about BSE (Burton and Young, 1996). The protracted decline in beef consumption has contributed to beef surpluses that create pressures for beef policy reform.

In addition to disease outbreaks, European consumers worry about external contaminants like pesticide residues (see table 17). Europe uses substantial amounts of pesticides and

¹¹ *Listeria monocytogenes* is a bacterium found mainly in meat and unpasteurized milk and milk products that can cause illness or death in humans (Buzby et al, 1996).

Table 17--Consumer survey results on food safety issues

Issue	Percentage
Consumers who listed food safety as a consumer safety concern	68
Consumers who said absence of pesticides is an indicator of food safety	54
Consumers who said absence of hormones is an indicator of food safety	56
Consumers who said the term "organic" should apply to foods grown without chemical pesticides	81
Consumers who said food from crops produced with biotechnology should be labeled	86
Consumers who would like a "GM-free" label	77

Source: Eurobarometre 49.

other plant protection products in its intensive conventional agriculture. Pesticide application rates (measured by kilograms of active ingredient per hectare) are higher in the EU than in the United States. Consumer concerns regarding pesticide contamination may be contributing to increased sales of organic produce. Growth in sales of organic products in the EU has averaged between 25 and 30 percent per year in the mid-1990s (table 18). This is comparable to the United States, where the average annual growth rate in organic sales has been 24 percent during the 1990s (Thompson, 1998). The EU Consumer Committee¹² and the Transatlantic Consumer Dialogue¹³ have expressed concern about the use of antibiotics in animal feed, as a medical journal has suggested a link between this use and the growing number of antibiotic resistant strains of bacteria (Consumer Committee comments, 12/8/98, *New England Journal of Medicine*, 1999). A recent food quality control scare occurred in Belgium, where an animal feed manufacturer sold feed that was contaminated with dioxin. Almost all animal products had to be removed from the shelves in Belgium, and cabinet-level resignations occurred (London Independent, 6/9/99).

¹² A consultative committee to the European Commission. It comprises representatives of Europe-wide, national and regional consumer organizations.

¹³ The Transatlantic Consumer Dialogue (TACD) is a forum of 60 U.S. and EU consumer groups established in the context of the Transatlantic Economic Partnership to provide a formal mechanism for U.S. and EU consumer representatives to have input to bilateral political negotiations and agreements. The TACD develops joint consumer policy recommendations to the U.S. government and the European Union to promote the consumer interest in EU and U.S. policy making on transatlantic trade issues.

Table 18--Sales of organic products in the EU and selected member countries, various years

Country	Organic products share of total sales	Annual growth in organic sales
		Percent
France	0.3	NA
U.K.	1	40
Austria	2	NA
Denmark	3-4	100
EU	NA	25-30

Sources: New Statesman, 1998; Thompson, 1998; FAS, 1998; London Independent, 3/99; Michelsen, 1996; Lohr, 1998.

Many consumers feel that the “absence of hormones” is an indicator of food safety (table 17), despite the fact that hormones occur naturally in many foods. In the late 1980s, beef consumption declined following discovery of DES (a carcinogenic growth promotant) in German calves and an outbreak of illness among consumers in Spain who ate meat illegally treated with concentrated injections of hormones (*Western Europe Agriculture and Trade Report*, 1990). The EU has responded to these episodes by banning the use of hormones in domestic livestock production and banning the import of meat from cattle treated with hormones in any way, even using controlled applications. The EU position has been that the growth hormones are unproven over the long term, and that more safety studies should be done. The ban has created a lengthy dispute between the EU and the United States, culminating in a recent ruling by a WTO panel that there is no scientific justification for the ban.

Consumers have also expressed concern about food crops that have been genetically engineered. Some have suggested the possibility that placing new genes in plants might result in unforeseen allergens or adverse health effects.¹⁴ Scientists consider genetically engineered foods that are currently on the market to be safe for human consumption. Nonetheless, European consumers fear possible unknown risks. Opinion polls of the public’s reaction to transgenic crops have yielded varying results, but public approval of biotech crops in the EU is on average lower than that indicated by similar polls in the United States (*Milling and Baking News*, 1997, *Washington Post*, 1999). In several EU countries, many supermarket chains and some large food processors have announced that they are eliminating biotech products from their in-house brands.

Some food industry officials have credited the concern over crops produced with biotechnology, in addition to the concern about pesticide residues, with increasing demand for organic food in Britain (London Independent, 3/8/99). Organic food still accounts for a very small percentage of the total food market (ranging from less than 1 percent to 4 percent of total sales for selected EU member countries), but that share is rising rapidly (table 18).

¹⁴ Some consumers’ concerns have centered around the environmental impacts of genetically modified crops, which will be discussed below.

Process Concerns

In addition to concerns related to the (real or perceived) safety and quality of food, some consumers and pressure groups have voiced concern over the methods of food production.

Consumers are concerned with the effect of food production on the environment, animal welfare, and the perceived benefits of the rural way of life and other rural amenities.

Increasingly, purchasers want some assurance that their food is not being produced in ways that create social damage. Europeans express concerns about the effects of high EU pesticide use, fertilizer, and animal waste runoff into water supplies on wildlife and human health and life (EU Consumer Committee comments, 12/98). EU consumers also fear the possibility that genetically engineered plants could result in the spread of herbicide-resistant weeds (*Official Journal of the European Communities*, C 284, 9/14/98).

Consumers in Europe have become increasingly concerned about the conditions under which farm animals are held, and many laws have been enacted to improve animal welfare. Surveys have reported that consumers are willing to pay for the higher costs associated with some of these regulations (Gallup poll). In 1996, 51 percent of British consumers surveyed reported that they had bought free-range eggs or chickens in the previous 12 months (MORI poll). The EU has included addressing the animal welfare issue as one of its objectives in the next round of multilateral agricultural negotiations.

Some research indicates that Europeans are willing to pay to maintain their rural countryside, small farms, and small villages (Hackl and Pruckner, 1997). The persistence of the CAP, despite high budget costs and high food prices, may be a testament to consumers’ acceptance of these burdens as a means of achieving their desired social outcomes.

EU Government Policies Related To Consumer Preferences

The aforementioned concerns have been exacerbated by EU consumers’ lack of trust in government institutions. Public trust in European food safety institutions has been weakened by the UK government’s handling of the BSE crisis, during which it gave unjustified assurances that the beef supply was safe, and the Belgian government’s handling of the dioxin crisis, which involved long delays in informing the public. Because it is difficult to observe the government increasing food safety, the government’s ability to facilitate transactions by providing safety depends on its reputation for being able to do so. Repeated discovery that products the government claimed were safe were actually dangerous will damage the government’s reputation. Consumer polls suggest that many EU consumers lack trust in government authorities to assure them of food safety and have more confidence in consumer associations (Eurobarometre 49). The

demands for safe, high quality foods produced in a socially optimal way are already beginning to manifest themselves in policy changes.

Consumer Information

Many products in the EU are voluntarily labeled. For instance, consumer preferences for foods produced in an environmentally benign way, or that are based on humane treatment of animals, can be targeted through labeling, and many firms have incentives to use this as an advertising feature. In some cases, European governments have attempted to provide information through laws that require labeling. Cases of required labeling in the EU include labeling of foods for additives and labeling for nut content. Because the EU has not yet mandated comprehensive U.S.- style nutrition labeling, the EU Consumer's Committee has recommended nutrition labeling to add to consumer information and choice (Consumer Committee comments 12/98).

Also under the heading of consumer information, the European Commission has undertaken an EU-wide food safety campaign, mostly in the form of consumer education about handling practices (FAS GAIN Report, 1998). The EU is also trying to use consumer associations in designing the campaign and as advisors to the public. The establishment of national food safety agencies has been proposed in the current legislative agendas in Britain and France.

The EU has also mandated labeling for foods that contain crops produced with biotechnology. Genetically engineered varieties must cross three hurdles to be sold in the EU: labeling, acceptance by consumers, and EU Commission approval. As of September 1998, EU firms have been required to label any foods that contain modified DNA or proteins from crops produced with biotechnology (see Council Regulation (EC) 1139/98). Surveys indicate that most EU consumers desire such labeling (table 17).

Although EU labeling law has been in effect for over 1 year, the EU has only recently (October 1999) proposed a minimum threshold for mandatory labeling of 1 percent of the bioengineered content of each ingredient in a product. Even if a product is initially not a genetically engineered variety, intermingling of even small amounts—which could result, for instance, if the conventional product is transported in the same trucks previously used for a bioengineered variety—could cause the product to test positive for the presence of bioengineered crops and to therefore need to be labeled. The lack of standardized testing for bioengineered crop content can also produce inconsistencies in test results. There is also some confusion over which processed products contain modified DNA or proteins and which do not.¹⁵

The extent to which labeling crops produced with biotechnology, and the food products that contain them, and the

adverse consumer reaction to such products affect U.S. trade is uncertain. Crops for which there are currently varieties produced with biotechnology, largely soybeans and corn, are mostly exported to the EU for animal feed, and only a portion of soy and corn byproducts is used in processed foods. Retailers, regulators, and consumer groups have interpreted the regulations to mean that some byproducts probably do not have to be labeled, because they do not contain modified DNA or proteins.¹⁶ However, concern about consumer demand, and the possibility of increasing market share by developing a differentiated product, has prompted retailers to look beyond the legal requirements.¹⁷

Some supermarket chains, food processors and restaurants in the EU are attempting to eliminate biotech ingredients. One processor cited a drop in sales and another noted an increase in calls to consumer helplines as factors influencing their decisions (London Times, 4/28/99; Reuters, 4/20/99). Some food processors are attempting to eliminate from their food products all byproducts from biotech crops (even those that need not be labeled according to retailers' interpretation of the law), suggesting that the EU standards for labeling fail to satisfy some EU consumers.

To accomplish this, some European food processors have either removed soy and corn from their foods, or they have been ordering conventionally grown soybeans from some growers in Canada and the United States and from Brazil. Soybeans, however, are an important source of protein for livestock. If Brazil approves genetically engineered soybeans for commercial production, it will be difficult for the EU to obtain conventional soy in the quantities needed for all uses. In 1997, the EU purchased 94 percent of its soybean imports from the United States, Brazil, and Argentina (also a producer of genetically engineered soybeans), and 98 percent of its soybean meal from these same three countries.¹⁸ EU processors will need to pay premia for soy grown from conventional varieties and identity-preserved throughout the handling, distribution, and shipping process. Some processors have already paid premia for identity-preserved conventional varieties.

In addition to consumer concerns, the problem that the EU has not approved some varieties of crops produced with biotechnology is also worrisome for U.S. exporters. The EU has a lengthy approval process for testing and cultivation of crops produced with biotechnology in the EU and also for sale for import and final consumption (see Regulation 258/97 and Regulation (EC) 90/220). In 1998, a number of varieties of genetically engineered corn approved and grown in the United States had not yet been approved by the EU. The approval process has slowed even more (no new approvals have been made since April 1998), and the EU does not plan on approving any new varieties in the near

¹⁵ Information from discussions with a retail firm.

¹⁶ Discussions with retailers, MAFF official, newspaper articles.

¹⁷ Conversation with Prof. Maury Bredahl.

¹⁸ Source: EU Eurostat trade data.

Table 19--Importance of EU market for U.S. exports of selected crops and products having genetically modified varieties, 1997

Products from crops having transgenic varieties	Value of U.S. exports to EU	Share of total U.S. agricultural exports to EU	Share of U.S. exports of the given product	Share of U.S. total agricultural exports	Share of total EU imports of product1/
	Million \$			Percent	
Soybeans	2,472.7	27.16	33.51	4.32	54.34
Soybean oil	3.7	0.04	0.63	0.01	1.64
Soybean meal	371.8	4.08	19.94	0.65	10.05
Corn	191.0	2.10	3.69	0.33	61.56

1 / EU product categories differ slightly from those used to generate other columns.

Sources: U.S. FATUS Trade data; Eurostat EU Trade data.

future, as it is planning on revising its laws (BBC News, June 25, 1999). Additionally, some EU countries have banned the import of some genetically modified crops, despite EU approval (Reuters, 10/5/98).

Even if imports are allowed, cultivation of genetically engineered crops is very controversial. Trial plots of transgenic crops have been vandalized in Great Britain, and France has declared a partial moratorium on cultivation of genetically engineered crops (Chemical Week, 12/9/98). If EU farmers are denied access to crop varieties produced with biotechnology, production in the EU will be affected, and thereby trade. If genetically engineered seeds turn out to be lower in cost to cultivate, costs of production of conventional crops in the EU could remain higher than they would be with genetically engineered seeds, giving exporters such as the United States an advantage in sales to third countries. The higher relative cost of grain to EU livestock producers could also affect the competitiveness of EU meat exports.

Product Regulation

Another way in which EU governments are regulating products in the food chain is through the development and enforcement of standards. In theory, one purpose of government-imposed standards is to reduce the costs of transactions by ensuring that all firms that are allowed to market a product have met a set of standards, so that consumers no longer need to search, producers no longer need to signal, and uncertainty is reduced (Bredahl 1998). However, in practice, standards can also increase costs as firms and the government must undergo the expense of compliance, verification, and enforcement of the standards.

Regulations aimed at food safety and quality could expose the EU to challenges of those policies that do not meet the conditions set forth in the Agreements on Sanitary and Phytosanitary Measures (SPS) and on Technical Barriers to Trade (TBT),¹⁹ especially if requiring conformity to local product standards has the effect of unfairly excluding foreign

¹⁹ Under the SPS Agreement, WTO members agreed to guidelines governing the use of measures to protect human, animal, and plant life and health from foreign pests, diseases, and contaminants. The TBT Agreement sets forth disciplines on the use of standards (including labeling requirements), testing and certification procedures, and other non-tariff barriers that can create obstacles to trade.

goods. As traditional trade barriers like tariffs decline, these non-tariff barriers take on greater importance in influencing trade flows, and are likely to spawn more trade conflicts.

When trading partners have different product standards, trade conflicts can arise. Trading partners may question whether a product safety standard 1) actually reflects safety concerns, and 2) represents the least trade-distorting method of dealing with the consumer information concerns. In the EU, consumer groups and domestic producers have sometimes joined forces to press for product regulations that will exclude imports that don't have to meet domestic standards, as when German environmental groups and automakers joined together to demand catalytic converter requirements for cars sold in the EU (Vogel, 1995). This phenomenon can make it difficult to discern whether consumer concern, desire to protect the domestic market, or both provide the motivation for the regulation.

The EU's ban on beef from hormone-treated cattle is an example of a product standard policy that has had a significant trade impact. The WTO has ruled that the ban is inconsistent with the EU's obligations under the WTO, and that the EU must allow the import of the beef. The EU has refused to bring its policy into compliance with the ruling, and the United States and Canada have been authorized to withdraw negotiated trade concessions. The EU has also begun to impose severe limits on the use of some antibiotics in raising livestock. If a country imposes costly restrictions on its own producers, costs rise for its firms. The domestic products could be at a disadvantage, giving rise to pressure to enact protectionist legislation.

Process Regulation

Process standards in the EU include, among others, regulations regarding environmental effects of agriculture, production of organic food, and animal welfare. Process standards are sometimes negatively contrasted to standards for the final product, because, while process standards are one way to achieve social goals, they can, in some cases, have the effect of arbitrarily banning equally safe production techniques. Additionally, process standards require enforcement at the site of production, which is costly and difficult to monitor. In contrast, product standards allow any production technique that results in a product of a given quality, but requires inspection of the final product, which also may or

may not occur.

The EU strictly regulates food processing. For example, all livestock producers must use a prescribed set of standardized meat-handling procedures. Under the EU's Third Country Meat Directive, livestock processing plants in non-EU countries must adhere to EU standards in order to ship product to the EU. The EU blocked the import of some meat products because production processes did not conform to EU specifications, even though the goods themselves could be just as safe. A recently-concluded (July 1999) veterinary equivalency agreement between the EU and the United States (similar agreements have been concluded or are being negotiated with other countries) establishes a framework recognizing equivalency between U.S. and EU sanitary measures. Both partners made a commitment to facilitate trade by reviewing the other party's export requirements.

The BSE crisis has led to stricter regulation of livestock production within the EU. Since the theorized route of transmission of the disease was via feeding meat and bone meal to cattle, such feeding practices have been banned. Other steps were taken to reduce the spread of the disease, including banning the sale of all cattle born before June 1996 and selective slaughtering of suspect cattle. The export of British beef was banned for several years, and the ban has only recently been lifted.

Some EU policies that influence production processes fall outside of the regulatory sphere. The CAP previously emphasized payment per unit of output, thereby encouraging intensive agriculture and the use of pesticides and fertilizers (Consumer Committee comments 12/98). The expense of the CAP's per unit payment scheme has put more pressure on the EU to move CAP reform away from emphasis on yields. In 1992, the EU reformed the CAP to rely less on per unit payments and more on direct payments. The CAP reforms adopted under Agenda 2000 would continue this shift toward partially decoupled payments to farmers, some of which might be linked to use of environmentally safer farming practices. If payments to farmers for using more environmentally friendly techniques were fully decoupled, they would meet the objectives of both environmental groups and those reformers who would like to reduce the overproduction associated with the CAP.

The 1992 reform also allowed member state governments to have programs that compensate farmers for "ecologically sound farming." Currently, farms involving 30 percent of Germany's acreage and 100 percent of Austria's acreage participate (Weingarten and Frohberg, 1997). In 1997, the Danish government formulated a plan to reduce pesticide use by 50 percent, and began considering a ban on pesticides (*Chemical Week*, 6/4/97). EU standards for pesticides and fertilizer in water are strict (Weingarten and Frohberg, 1997).

Other environmental policies focus on organic production. While the demand for organic food is increasing, organic

production costs are high. Additionally, farmers must refrain from applying pesticide to the land for 3 years in order for the produce to be considered organic. This requirement gives a farmer 3 years of high-cost, non-chemical farming without being able to cash in on the organic premium. Thus, greater demand for organic produce mostly raises prices, with only some increase in supply. However, Germany, Austria, Sweden, and Denmark intend to have 10 percent of their farmland organic by next year (*London Independent*, 3/8/99). Some EU governments have subsidized conversion to organic production and production itself (Weingarten and Frohberg, 1997, Michelsen, 1996).

Some U.S. producers may benefit from increased European demand for organic produce. Austria, for instance, is importing some organic rice, nuts, fruits and avocados from the United States (FAS). Increased European demand for processed and prepared food could open up opportunities for exports of organic frozen meals based on organic products produced in the United States (see *Frozen Food Age*, 1/96).

During the late 1980s, European countries, including those from outside the EU, signed a small flurry of internal treaties dealing with animal welfare, and regulating transport of animals and pets. Now, the European Union has decided to ban by 2012 the use of hen cages that are less than 750 sq. cm, where the current size is 450 sq. cm. (EU Council Directive 1999/74/EC, July 19, 1999). Such concerns are a possible area of trade conflict, if these production requirements are translated into requirements on imports, and the EU's trading partners lack similar regulations.

The EU has made clear that it intends to pursue a program of agricultural policies based on a recognition of the "roles agriculture plays in the economy, in the environment, in society, and in preserving the countryside," a concept widely referred to as multifunctionality (EU DGVI web site). The EU will seek to maintain farming throughout Europe, to safeguard farmers' incomes to preserve a viable agricultural sector, and to provide compensation where necessary for "natural constraints and disadvantages." Such a program could put the EU's policies in conflict with those of countries seeking greater disciplines on the provision of trade-distorting support to agriculture. The Uruguay Round Agreement encourages these countries to provide support to meet their agricultural objectives using less-distorting, or "green box", policies, where payments are not linked to production quantities or prices.

Implications of Agenda 2000

Food quality and safety regulations will likely have little short-term impact on the outcome of Agenda 2000 reforms for grains. Food quality and safety regulations, by raising costs to domestic producers, have the potential to change competitive conditions. However, if the EU market remains insulated from competition, the net effect of the policies may be small. Currently, the grain support price cuts are

projected to allow only wheat to be exported without subsidies. Food safety policies relating to the import and cultivation of biotech varieties will have little impact on wheat because no transgenic variety is commercially available for wheat. EU corn producers are not likely to be greatly affected by changes in competitive conditions caused by restrictions on biotech varieties, as the EU currently exports little corn, and corn exports are not expected to expand significantly even after support price cuts. Furthermore, EU corn producers will continue to be protected by market access barriers protecting grains.

With respect to nutrition, a number of consumer advocates have pointed out that the CAP contravenes the advice of the latest medical findings, which emphasize the need for increased vegetable and fruit consumption. Import restrictions and encouraged market withdrawals raise the cost of vegetables and fruits to the consumer (Consumer Committee comments 12/98; Lobstein, 1998). These policies are not addressed by Agenda 2000.

The growing influence of consumers in agricultural policy is evidenced by the EU Commission's acknowledgment that one motivation for CAP reform is to address consumer concerns (EU DG-VI web site). The CAP has been criticized for its cost and its large share of the EU budget, for contributing to pollution and the spread of animal diseases by promoting intensive agriculture and overproduction, and for failing to ensure the economic health of small farms. Support price cuts for grains and beef may discourage some of the overuse of chemicals and undesirable practices associated with intensive livestock production. Provisions for promoting less intensive production of livestock and other "agri-environment" measures could help meet environmental objectives. Finally, targeting of structural funds to areas in greatest need is an attempt to direct funds based on development objectives and farm income equality goals.

Conclusions

The EU has undertaken a number of policy reforms in areas of concern to consumers: pathogens, pesticides, livestock production, and crops produced with biotechnology. Farmers are increasingly being required to adapt their production practices in light of growing concerns with animal welfare and the environment. Some of these regulations have led to policy changes that have created trade conflicts and may continue to do so. Trade disputes over beef treated with hormones, crops produced with biotechnology, and a host of other issues have already occurred between the EU and its trading partners. Other policies, particularly those aimed at reducing the intensity of production and encouraging production practices that are less harmful to the environment, could help address the problem of chronic overproduction and thereby contribute to easing trade tensions.

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Glossary of Agricultural Trade, CAP, and WTO Terms

Agenda 2000. A package of reforms finalized in Berlin in March 1999 intended to prepare the EU's Common Agricultural Policy (CAP) for enlargement into Eastern Europe and for the next round of WTO negotiations on agriculture.

Agreement on Agriculture. Part of the Uruguay Round agreement covering three major areas related to agriculture: market access, export subsidies, and internal support. The Agreement on Agriculture is one of the 29 individual legal texts included under an umbrella agreement establishing the WTO. The agreement is implemented over a 6-year period, 1995-2000.

Aggregate Measure of Support. An index that measures the monetary value of the extent of government support to a sector. The AMS, as defined in the Agreement on Agriculture, includes both budgetary outlays as well as revenue transfers from consumers to producers as a result of policies that distort market prices. The AMS includes actual or calculated amounts of direct payments to producers (such as deficiency payments), input subsidies (on irrigation water, for example), the estimated value of revenue transferred from consumers to producers as a result of policies that distort market prices (market price supports), and interest subsidies on commodity loan programs.

Amber Box Policies. An expression that developed during the GATT trade negotiations using a traffic light analogy to rank policies. The traffic light analogy was that an amber policy be subject to careful review and reduction over time. Amber box policies include policies such as market price support, production-based direct payments, and input subsidies.

Blue Box Policies. A popular expression to represent the set of provisions in the Agreement on Agriculture that exempts from reduction commitments those payments from production-limiting programs that are not wholly decoupled, such as U.S. deficiency payments before 1996 and EU compensatory payments after 1992.

Bound tariff rates, Tariff "binding". Tariff rates resulting from GATT/WTO negotiations or accessions that are incorporated as part of a country's schedule of concessions. Bound rates are enforceable under Article II of GATT. If a WTO member raises a tariff above the bound rate, the affected countries have the right to retaliate against an equivalent value of the offending country's exports or receive compensation, usually in the form of reduced tariffs on other products they export to the offending country.

Commission. The EU's official executive body that proposes legislation and stands for 6 years. The members are nominated by member countries and approved by the European Parliament. Each Commissioner is responsible for preparation of legislative proposals for consideration by the Council of ministers.

Compensatory payments. Instituted by the MacSharry reforms of 1992, these direct payments were intended to compensate farmers completely for the price reductions of the reforms. Their importance lies in the fact that the transparency of farm support was greatly enhanced because such support was hidden in high prices and not exposed to budget scrutiny.

Country schedules. The official schedule of each country's commitments agreed under the URAA.

Decoupled. Payments to farmers that are not linked to current production decisions. When payments are decoupled, farmers make production decisions based on expected market returns.

De minimis provision. The total AMS includes a specific commodity support only if it equals more than 5 percent of its value of production, and noncommodity-specific support only if it exceeds 5 percent of the value of total agricultural output.

Dispute Settlement Body (DSB). The General Council of the WTO, composed of representatives of all member countries, convenes as the Dispute Settlement Body to administer rules and procedures agreed to in various agreements. The DSB has authority to establish panels, adopt panel and Appellate Body reports, maintain surveillance of implementation of rulings and recommendations, and authorize suspension of concession or other obligations under the various agreements.

European Community. The European Community (EC) is comprised of the European Atomic Energy Community, the Coal and Steel Community, and the European Economic Community of which the CAP is the principal component.

European Union. The EU is the EC with the additional responsibilities conferred upon it by the treaty of Maastricht which encompasses a common currency and a common foreign policy.

Export subsidies. Under the WTO, payments made on the condition that goods are exported.

GMO. A genetically modified organism is a living plant or animal that has undergone an alteration in some part of its gene structure in order to modify in a beneficial way a specified characteristic or trait.

GATT (General Agreement on Tariffs and Trade). An agreement originally negotiated in Geneva, Switzerland, in 1947 among 23 countries, including the United States, to increase international trade by reducing tariffs and other trade barriers. The agreement provided a code of conduct for international commerce and a framework for periodic multilateral negotiations on trade liberalization and expansion until superseded by the WTO in 1995.

Green Box Policies. A popular term that describes domestic support policies that are not subject to reduction commitments under the Uruguay Round Agreement on Agriculture. These policies are assumed to affect trade minimally, and include policies related to such activities as research, extension, food security stocks, disaster payments, the environment, and structural adjustment programs.

In-quota (TRQ) tariff. The lower tariff applying to imports within the limited tariff-rate quota (TRQ) quantity.

Intervention. An EU method of supporting farm prices through market manipulation by guaranteeing a price at which all quantities of a commodity will be purchased.

Market access. The extent to which a country permits imports. A variety of tariff and non-tariff trade barriers can be used to limit the entry of foreign products.

Most Favored Nation (MFN) Status. An agreement between countries to extend the same trading privileges to each other that they extend to any other country. Under a most-favored-nation agreement, for example, a country will extend to another country the lowest tariff rates it applies to any third country. A country is under no obligation to extend MFN treatment to another country, unless both are members of the WTO, or unless MFN is specified in an agreement between them.

Non-tariff trade barriers. Government measures other than tariffs that restrict trade flows. Examples of non-tariff barriers include quantitative restrictions, import licensing, variable levies, import quotas, and technical barriers to trade.

Most-Favored Nation (MFN) tariff. A tariff applied to all countries that are signatories to the Uruguay Round. The *in-quota MFN tariff* is that for which all countries are eligible within a fixed TRQ quantity. The *over-quota MFN tariff* is the higher tariff applicable to all countries above the fixed TRQ quantity.

Notification process. The process by which member countries report to the WTO information on commitments,

changes in policies, and other related matters as required by the various agreements.

Over-quota tariff. The higher tariff applying to imports outside a tariff-rate quota (TRQ) quantity (i.e., once a TRQ has been fully utilized).

Preferential tariff. A tariff from which one or more, but not all, countries benefit within the scope of the bilateral, regional, or preferential trade agreements (e.g., the Europe Agreements, the European Economic Area, the Lome Convention, the Generalized System of Preferences). These tariff preferences have created numerous departures from the MFN principle, namely that WTO members should apply the same tariff to imports from other WTO members. The *in-quota preferential tariff* is that which the EU grants to specific countries for a limited quantity. Additionally, under some trade agreements (including the Europe Agreements) specific countries benefit from tariff preferences outside their allocated TRQ quantities or from tariff preferences with no quantitative restriction: These are *over-quota preferential tariffs*.

“Round”. Refers to one of a series of multilateral trade negotiations held under the auspices of the GATT for the purposes of reducing tariffs or other trade barriers. There have been eight trade negotiating rounds since the adoption of the GATT in 1947.

Sanitary and Phytosanitary (SPS) Measures. Technical barriers designed for the protection of human health or the control of animal and plant pests and diseases. Under the Uruguay Round Agreement on the Application of Sanitary and Phytosanitary (SPS) Measures, WTO member countries agreed to base any SPS measures on an assessment of risks posed by the import in question and to use scientific methods in assessing the risk.

Tariff. A tax imposed on imports by a government. A tariff may be either a fixed charge per unit of product imported (specific tariff) or a fixed percentage of value (*ad valorem* tariff).

Tariffication. The process of converting nontariff trade barriers to bound tariffs in order to improve the transparency of existing agricultural trade barriers and facilitate their proposed reduction.

Tariff-rate quota (TRQ). A limited quantity of imports on which the levy charged is less than the bound tariff rate.

Technical Barriers to Trade (TBT). Refers to regulations, standards (including packaging, marking, and labeling requirements), testing and certification procedures, and other non-tariff barriers that can create obstacles to trade. Under the Uruguay Round Agreement on Technical Barriers to Trade (TBT Agreement), WTO members agreed to disci-

plines on the use of these measures as they apply to both industrial and agricultural products.

URAA. Uruguay Round Agreement on Agriculture (see Agreement on Agriculture).

Uruguay Round. The Uruguay Round of multilateral trade negotiations, under the auspices of the GATT. The Agreement on Agriculture is one of the 29 individual legal texts under an umbrella agreement establishing the WTO. The negotiation began at Punta del Este, Uruguay, in September 1986 and concluded in Marrakesh, Morocco, in April 1994.

Variable levy. A tax on most agricultural imports imposed by the EU before completion of the URAA. It was the dif-

ference between an internal commodity price and a world price over a specified period of time to insure that imports of commodities not bound do not enter the EU at lower than EU prices.

World Trade Organization (WTO). Established on January 1, 1995, as a result of the Uruguay Round, the WTO replaces GATT as the legal and institutional foundation of the multilateral trading system of member countries. It provides the principal contractual obligations determining how governments frame and implement domestic trade legislation and regulations. And it is the platform on which trade relations among countries evolve through collective debate, negotiation, and adjudication.

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