

# **The Impact of The European Enlargement and CAP Reforms On Agricultural Markets. Much Ado about Nothing?**

by

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## **Much Ado about Nothing?**

### **I. Introduction**

Following a historical agreement on the EU enlargement, ten New member States (NMS) (Poland, Hungary, the Czech Republic, Slovakia, Slovenia, Estonia, Latvia, Lithuania, Cyprus and Malta) acceded to the European Union on May 1, 2004. This enlargement is unprecedented in its scope and diversity of countries. The effects of the EU enlargement on current and future member countries and on world commodity markets require careful consideration, as the EU is a major player in these markets. This analysis is complicated by the distorting effects of the Common Agricultural Policy (CAP) and the importance of the agricultural sectors in the NMS. Implementation of the CAP in the NMS will be fully felt after a transition period.

In this paper we analyze the effects of the latest CAP reforms and enlargement on the EU-15, the acceding countries, and world agricultural markets. We compare three ten-year agricultural outlook scenarios (a reference scenario, midterm-review reform in the EU-15, CAP reform and NMS accession). Our analysis contributes to the recent literature analyzing EU integration and CAP reforms (Ackrill 2003; Bouamra-mechemache and Requillart 2004; Fuller et al. 1999 and 2002; Nahuis 2004; Schrader 2000; among others). We implement the actually agreed-upon framework between the EU-15 and all NMS and include the latest CAP reforms. Therefore, we provide an encompassing assesment of these most recent changes with updated estimates of their potential impacts on agricultural markets.

### **II. Policy Changes and Scenario Assumptions**

In order to assess the impacts of CAP reforms and EU enlargement, a reference baseline is constructed by extending the pre-2004 policies in the EU-15, following the Berlin Accord, and by keeping the candidates countries separate from the Union. Given these assumptions, we simulate

EU and world agricultural market outcomes for the 10-year period from 2004 to 2013. Then, our analysis incorporates the major policy changes associated with the 2003 Midterm Review of the CAP. Combining the CAP reforms and the accession of the 10 NMS is our third scenario. We consider the associated policy changes in the NMS during an implementation period, which culminates in convergence to fully vested CAP recipients.

### *CAP reform*

Table 1 summarizes the major CAP changes. Implementation of the reforms began in 2004. The aim in reforming the CAP is to comply with future commitments in the World Trade Organization (WTO) and to induce marginal incentives driven by market forces rather than farm programs. Sugar and dairy are exceptions to this trend. Continuing the process initiated in the 1992 reforms, farm support in the EU is further decoupled from production decisions, and the remaining price incentives linked to production are lowered. Decoupling, when fully implemented in 2007, will take the form of a Single Farm Payment (SFP). The payment should satisfy the WTO's green-box criteria. Since limited coupled elements may be maintained and because the SFP creates wealth effects, we assume that the SFP has a small supply-inducing effect.

The CAP reform also includes commodity-specific measures. There is a reduction of the monthly payment increments in the cereals sector by half, but the current intervention price is maintained, with the exception of rice. The rice intervention price is cut nearly by half. Moreover, rye is removed from the intervention system. The supplement for durum wheat decreases progressively to €285/ha by 2006 and is eventually included in the SFP. Because we use an aggregate EU-15 model for our analysis, we assume decoupling is phased in from 2005 to 2007, mimicking the different decoupling strategies utilized by member countries. Modulation (reduction in direct payments for large farms) rates are set at 3% for 2005, 4% for 2006, and 5% after that. In the EU-15, the set-aside rate is set to 5% for 2004 and 10% for 2005 and onward. In dairy, the intervention

price for butter is reduced by 25% over four years, and the skimmed milk powder price is cut by 15% reduction over three years. Dairy quotas grow marginally in the EU-15 members, rising from 118.953 mmt in 2004 to 120.505 mmt in 2009 and staying at that level for the rest of the simulation period.

**Table 1. Summary Table of EU CAP Reform and Enlargement**

<b>Policy</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
<b>Decoupling (%)*</b>					
Livestock	0	23	47	70	70
Crops and dairy	0	33	67	100	100
<b>Modulation (%)</b>	0	3	4	5	5
<b>Set-aside (%)</b>					
EU-15	5	10	10	10	10
EU NMS	0	0	0	10	10
<b>Dairy Quota (mmt)</b>					
EU-15	118.95	119.04	119.30	119.78	120.26
EU NMS	18.33	18.33	18.37	19.00	19.00
<b>Intervention Price&amp; premium</b>					
Durum Aid (euros/mt)	313	291	285	285	285
Butter (euros/mt)**	316.72	293.84	270.98	252.96	246.39
NFD (euros/mt)**	200.38	190.61	180.33	176.69	174.69
Top-up payments (%)	20	27	22	17	7

\* We assume a modest crop response to the SFP due to wealth effects.

\*\*Calendar-average prices of marketing-year prices.

## *Accession*

In May 2004, the NMS were incorporated officially into the European Union, but agricultural policy changes are phased in over time. CAP policies are extended to the NMS with some accommodations. For example, a single-area payment begins at the time of accession as a simplified area payment, which is then replaced by the SFP in 2007. There is no financial modulation in the NMS until their CAP support reaches 100% of the EU-15 level in 2013. Direct payments are new instruments in many of the NMS. Countries are allowed to provide additional “top-up” payments using national finances or EU rural-development funds until 2006 to bring payments to NMS farmers closer to EU-15 levels. However, we assume that no top-up payments are used after 2008 (see Fabiosa et al., 2005 for details).

We assume set-aside in the NMS starts in 2007 at 10% with the implementation of the SFP and stays at that level. Dairy production quotas in the NMS are set slightly below pre-accession production levels and then increase slightly in 2007. Poland is the largest dairy producer, followed by the Czech Republic, Hungary, and Lithuania. The trade policy regime in the NMS has changed. Tariff rates applied to nonmembers were harmonized with the EU-15 levels, and tariffs on internal trade are eliminated. Price convergence between the EU-15 and EU NMS is assumed to take three to four years, mimicking the gradual decline of transaction costs with greater integration and improvements in NMS product quality. Table 1 also summarizes the important policy parameters for the accession scenario.

The CAP reform and EU enlargement scenarios were conducted using the 2004 baseline models developed by the Food and Agricultural Policy Research Institute at Iowa State University (FAPRI-ISU). To conserve space, we refer interested readers to the online description and documentation of the models (<http://www.fapri.iastate.edu/models/>). In addition, the discussion of the results in the next section is limited to key findings. A more detailed discussion of the scenario outcomes is

available in Fabiosa et al. (2005).

#### **IV. Impacts of the CAP Reform**

The major production, consumption and trade effects for both scenarios are summarized in Tables 2 and 3. The tables report the 10-year average changes and percentage changes for variables experiencing a change of 1% or more from the baseline. The CAP reforms have their greatest production impact on the beef sector. The replacement of commodity-specific payments with the SFP diminishes the attractiveness of beef production, prompting producers to reduce cow numbers by 5% and beef production by 3%. Beef prices rise, causing a secondary shock in pork and poultry through substitution effects in demand. Demand shifts away from beef in favor of pork and poultry, moderately raising the price and production of pork and poultry.

The EU CAP reform deepens previously scheduled reductions in the butter intervention price and retains cuts in NFD intervention. These support price cuts shift the allocation of milk for processed products away from butter and NFD and toward cheese, eventually pulling cheese prices down slightly. The EU butter price declines an average of 3.5% per year, and as much as 5.3% in the first 5 years following the reform. Butter prices remain 1 to 2% below the Agenda 2000 levels in the long run, and butter stocks average 81 tmt lower. In 2013, EU butter stocks are 31 tmt, and NFD stocks are 24 tmt.

The cereals and oilseeds sectors also experience primary supply shocks as a consequence of decoupling and the reduction of some support prices. Grain and oilseed areas decline slightly, reducing production and raising market prices. Rice is impacted most severely, with production decreasing by nearly 10%. At the same time, feed demand declines due to lower beef and dairy cattle numbers. The decrease in feed demand from cattle is moderated by greater feed use in the pork and poultry sectors. Other uses of grains do not decline as much as the feed consumption, and the net reduction in feed use eases some of the upward price pressure created by lower grain

production. Non-feed use of corn is higher in the latter part of the outlook period because of lower corn prices, but the growth in non-feed consumption does not fully offset feed use declines.

Lower crop production causes net exports from the EU-15 to decline in general. Net imports of corn are higher in the first 5 years, but imports decline in the outer years in response to lower feed demand. Non-feed use of barley in the outer years increases slightly as consumers switch to barley from wheat, which experiences a much greater price increase. Consequently, barley net exports decrease. Rice consumption increases by roughly 2%, inducing an increase in net imports of around 250tmt. CAP reforms have virtually no impact on vegetable oil prices and consumption in the EU-15. Despite a decline in domestic beef consumption by 1%, lower production and higher domestic beef prices stimulate an increase in net imports by 5.6%.

The impacts of the CAP reforms on the rest of the world are negligible. For example, U.S. agricultural exports grow by less than 1%. Net U.S. exports of corn are also higher but only in the first half of the outlook period. In the latter half of the scenario, U.S. net corn exports decline because of higher feed demand at home. U.S. exports of wheat fill the void on world markets created by lower EU-15 exports. The higher beef price in the EU is transmitted to international markets, causing secondary effects on pork and poultry markets, but the implications for world pork and poultry markets are insignificant.

World prices for grains and oilseeds and derived products are slightly higher because of the EU-15's decrease in net exports or rise in net imports. All of the average world price effects are 1% or less. The world market prices of sunflower and rapeseed oils increase marginally, but the soybean oil price remains unchanged. World soybean meal prices remains nearly constant until 2007/08; the impacts of falling animal numbers and rising grain and other meal prices on soybean meal demand offset each other. From 2008/09 onward, the growth in the swine and poultry sectors put upward pressure on soybean meal prices. Sunflower and rapeseed meal prices increase for similar reasons

but also because of decreases in production. Vegetable oil prices are the least effected by the CAP reform because of the fixed-proportion technology of producing vegetable oil and the lack of indirect effects on consumption.

Soybean imports increase slightly, as do soybean meal imports, but EU-15 soybean oil trade does not change. EU-15 sunflower seed imports go up because domestic production declines, but sunflower meal imports follow the pattern of feed consumption changes. EU-15 rapeseed imports rise 3.3% as a result of lower in plantings, but meal imports fall. An exportable surplus of rapeseed oil is created by the CAP reform as a consequence of greater demand price responsiveness relative to production.

## **V. Impact of the Enlargement**

As shown in Table 3, production quotas are binding constraints on the supply of milk and sugar in the NMS, causing production to decline relative to the baseline despite increases in domestic prices. World and EU15 prices also increase as a result. Milk production in the NMS declines 12% (2.8 mmt) relative to the baseline by 2013, as new quality standards and limitations on informal marketing drive many small producers out of business. Even at these reduced production levels, total milk output for the NMS remains nearly 12% above the total marketing quota (compared to about 2% for the EU-15), reflecting continued high on-farm use in some countries. The bulk of the change in milk production is accomplished through declines in dairy cow inventories. Changes in Poland accounts for nearly three-quarters of the decrease in NMS milk production, with the Baltic States accounting for the bulk of the remaining change. Sugar production in the NMS declines by an average of 7% due to the introduction of the production quota.

In contrast to milk and sugar, the supply of grains, oilseeds, poultry and pork expands in the NMS, pushing down EU15 prices and eventually putting downward pressure on world prices. Rising domestic prices in the NMS and the introduction of CAP payments for some commodities incite



producers to expand crop production. The introduction of set-aside requirements constrain supply growth starting in 2008. The increases in prices for NMS are large for some commodities. For example, corn prices increase by 37% in Poland and 44% in Hungary, and the wheat price increases by 33% in the Czech Republic. However, substitution effects cause production of some crops to decline, notably wheat and barley in Poland.

In the NMS, the contraction of the dairy herd eventually reduces beef production, despite higher beef prices. The drop in beef production generates additional demand for beef imports. Poultry, and to a lesser extent pork, production expands in the NMS in response to higher domestic prices, but meat consumption declines in most countries, leading to some growth in net exports. The impacts of higher livestock prices are moderated by higher feed crop prices in some countries.

Before enlargement the domestic prices for sunflower seeds, meal and oil in the NMS were 4% below the EU level. Upon accession this difference is phased out over three years. The domestic price of sunflower seeds in the NMS decreases in the first year, along with world prices, because production responds strongly to the new area payments. In the following years, as domestic prices in the NMS approach EU-15 prices, this convergence effect becomes dominant, and NMS prices rise above the baseline. After 2007/08 the domestic price for sunflower seeds in the NMS increases in step with the world price. The magnitude of the NMS price rise is the sum of world price increase and price convergence. Domestic prices of sunflower meal and oils increase throughout the entire outlook period because they rise to the EU level. These price changes in sunflower seed markets are extremely modest. A similar dynamic occurs in the rapeseed complex in the NMS, but with effects of even smaller magnitude.

The crush margins for sunflowers and rapeseed increase during the entire outlook period relative to the baseline, leading to an expansion in sunflower and rapeseed oil and meal production. The production growth is larger in the first three years, driven by price convergence effects. The NMS

produce and use few soybeans compared to the EU-15; consequently, the small changes arising in the NMS are dwarfed by the stable market situation in the EU-15.

Food use of wheat and corn are slightly higher in the outlook period because of lower prices. Despite declining absolute prices, the food use of barley falls in the latter half of the scenario because barley prices rise relative to wheat and corn. Wheat feed use decreases throughout the outlook period, but lower animal inventories do not reduce corn and barley feed consumption until 2008. EU-15 net exports of wheat decrease throughout the outlook period, and corn net imports increase because of lower domestic supplies. Barley net exports mirror feed demand patterns, increasing after 2008 as feed use declines. With higher dairy product prices, EU-15 consumption of all dairy products declines slightly.

The enlargement causes a shift in sourcing consumption, from domestically produced rapeseed and sunflower oil to imported soybean oil. This change is driven by the soybean oil tariff reduction and price convergence for sunflower and rapeseed oil toward EU levels. Trade flows between EU-15 and NMS are more stable than those between NMS and non-member countries. Exports of sunflowers and rapeseed, both important export commodities for the NMS, change in step with production, increasing first and then falling in the outer years. Exports of the respective meals increase after dipping in the early years. Imports of soybean meal and oil expand relative to the baseline. Sunflower oil imports fall and rapeseed oil exports increase. Finally, the consumption of sugar in the NMS decreases by about 1%, because domestic price of sugar increases substantially as a result of the intervention price.

Most world-price changes are either small or negligible. The only significant changes occur in dairy, where increasing world prices are driven by the reduced supplies in the EU-25, and in corn, where a decrease in the world corn price is driven by the excess supply of the EU-25. Dairy product price gaps between the NMS and EU-15 vary widely by product and country, but the biggest

impacts are in fluid milk prices. Fluid milk consumption in the NMS declines by about 8%, accounting for roughly 34% of the total decline in fluid milk use. The reduction in dairy product exports from the NMS reflects the smaller quantities of milk available for processing. The production changes in the NMS have a significant influence on the trade flows of dairy products between the old and new EU members. Before enlargement, the EU-15 was a net importer of all dairy products from the NMS. The changes in the total EU-25 market supplies result in a 1 to 2% increase in domestic prices, with NFD and butter price experiencing the largest changes. Dairy product net exports from the EU-25 decline following enlargement. These lower supplies to international markets boost international cheese and NFD prices by an average of 3% and butter and WMP prices by a bit more than 1%. Australia, New Zealand, and Argentina are the primary beneficiaries from increased export opportunities following Enlargement.

EU-15 net exports of butter, cheese, and NFD increase 4 to 11% relative to the baseline, but the vast majority of that growth in trade is with the NMS. In the aggregate, EU-15 dairy exports to the rest of the world decrease. The impact of EU enlargement is small on the world sugar market. The EU-25, through the NMS, decreases its exports of sugar to the rest of the world and world prices increase by a modest 2%.

## **VI. Conclusions**

We analyzed the effects of the recent CAP reform and enlargement to 10 NMS, on the EU-15, the NMS, and world agricultural markets. A qualified much-ado-about-nothing applies for the two policy reforms depending on where one looks for impacts. Both reforms have little impact on world markets. The reforms are essentially an EU matter. The CAP reform's impact on the EU-15 has a limited impact as well, except in the beef and rice sectors. However, there are big impacts induced by the enlargement within the enlarged EU. This is particularly true in the NMS as a result of policy changes and price convergence, especially in dairy, sugar and corn markets.

The accession and associated policy reforms have a large impact first on NMS for commodities falling under supply control such as dairy and sugar. The supply contraction in these sectors causes corresponding increases in prices. Dairy quotas in the NMS have some important repercussions for the beef market, first increasing supply with the culling of the dairy herd, but then later on by reducing the supply of beef. Second, new policies induce grain prices to increase substantially in most NMS, increasing the cost of meat products and reducing grain use. The Impact on EU-15 agriculture of the enlargement is moderate for most crops.

The new prices faced by consumers and producers in the NMS are the major cause of this reallocation. NMS Consumers pay more their food after accession. Tariff changes were moderate. There were some changes in trade in NMS because of major domestic changes such as in beef trade. However, because the NMS have little influence on world markets, the large effects in their individual trade flows do not translate in significant world market price effects. Argentina is the only country “gaining” significant market share in some dairy markets with the enlargement reforms.

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**TABLE 2. CAP reform & enlargement effects on EU-15 production, consumption, & trade\***

	Baseline (tmt)	CAP reform (tmt)	CAP reform impact (%)	Enlargement & CAP reform (tmt)	Enlargement impact (%)
<b>Production</b>					
Rice	1,741	1,573	-9.64	1,573	0.00
Beef	7,226	7,143	-1.17	7,138	-0.07
<b>Consumption</b>					
Rice	2,498	2,543	1.82	2,543	0.00
<b>Trade</b>					
Rice	-730	-988	43.89	-988	0.00
Rapeseed	-504	-522	3.32	-530	-6.29
Rape meal	-336	-333	-1.06	-326	-2.03
Rape oil	182	183	0.38	180	-1.56
Beef	-227	-241	5.58	-244	1.23
Pork	957	953	-0.42	929	-2.54
Poultry	183	180	-1.24	144	-20.74
Butter	126	115	-9.67	123	7.88
Cheese	319	319	0.11	332	3.98
NFD	84	82	-2.41	88	11.00

\*Results are only reported for commodities experiencing a 1% change or more in one of the scenarios.

**TABLE 3. CAP reform & enlargement effects on NMS production, consumption, & trade\***

	Baseline (tmt)	CAP reform (tmt)	CAP reform impact (%)	Enlargement & CAP reform (tmt)	Enlargement impact (%)
<b>Production</b>					
Corn	8,991	8,991	0.00	11,197	24.65
Rapeseed	2,137	2,138	0.05	2,161	1.14
Sugar	3,651	3,651	0.00	3,378	-7.40
Beef	804	804	0.00	781	-2.73
Pork	3,479	3,475	-0.12	3,514	1.10
Poultry	1,334	1,332	-0.16	1,384	3.91
Butter	313	314	0.15	299	-4.48
Cheese	607	610	0.43	561	-8.11
NFD	288	289	0.22	260	-9.93
WMP	78	79	0.24	74	-5.38
<b>Consumption</b>					
Corn	9,011	9,004	-0.09	8,595	-4.46
Soybeans	91	91	0.00	87	-5.81
Soy meal	3,912	3,911	-0.02	4,035	3.19
Rapeseed	-322	-323	0.40	-331	2.66
Rape meal	562	562	-0.07	571	1.59
Beef	682	682	-0.01	663	-2.75
Butter	278	278	-0.05	275	-1.15
Cheese	568	568	-0.01	558	-1.72
NFD	153	153	0.02	151	-1.28
WMP	45	45	0.03	42	-5.64

**TABLE 3. (continued) CAP reform & enlargement effects on NMS production, consumption, & trade**

	Baseline (tmt)	CAP reform (tmt)	CAP reform impact (%)	Enlargement & CAP reform (tmt)	Enlargement impact (%)
<b>Trade</b>					
Wheat	1,023	1,033	1.00	951	-12.32
Corn	-55	-47	-3.43	2,594	-1,109.39
Soy meal	-3,865	-3,865	-0.02	-3,989	3.24
Rapeseed	322	323	0.40	330	2.68
Rape oil	24	24	0.51	32	36.35
Pork	157	154	-2.82	182	20.46
Poultry	-41	-43	3.43	13	-43.54
Butter	35	36	1.80	23	-36.89
Cheese	40	42	15.10	2	-161.24
NFD	135	136	0.44	109	-20.00
WMP	34	34	0.56	32	-5.48

\*Results are only reported for commodities experiencing a 1% change or more in one of the scenarios.