The challenge of integrating EU and Turkish agricultural markets and policies

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Abstract: This paper addresses the potential consequences of a political and economic integration of EU and Turkish agriculture and evaluates the resulting challenges. Simulation models reveal declining agricultural prices for Turkey in the case of market integration with the EU. This would lead to less production, more consumption and Turkey becoming a net importer of agricultural products. Resulting comparative static net welfare gains may amount €0.5 billion. More important, however, are the productivity effects which may be generated by the prospect of EU membership. A realistic range of outlays for implementing the CAP in Turkey is between €3.5 and 6.3 billion. The main challenge for Turkey in the years to come is to increase agricultural productivity. In order to channel EU funds into productivity-enhancing policies, the second pillar of the CAP is a more suitable instrument than direct payments which are based on area endowment and tend to capitalise into land prices.

Keywords: Turkey; EU enlargement; market integration; simulation model; EU budget; EU accession; partial equilibrium model; common agricultural policy; CAP.

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1   Introduction

Turkey and the EU have travelled a long and bumpy road towards integration since the Association Agreement in 1963. With respect to market integration, the establishment of a Customs Union (CU) in January 1996 was a major step. The CU, however, is limited to industrial products; agricultural products are not included. Still, a significant part of agricultural trade between Turkey and the EU is subject to preferential trade rules which have been extended in various negotiation rounds since the Association Agreement. In 1987 Turkey applied for EU membership and the perspective of integration of the agricultural sector in the process towards full membership stimulated some impact analyses (Akder et al., 1990; Manegold, 1988). At that time, however, the prospect of full membership was still very distant. Furthermore, the EU market was highly protected and subject to a high degree of domestic intervention. Adjusting to EU policies at the end of the 1980s without a realistic perspective for full membership did not seem sensible from Turkey's point of view. What was discussed, after the implementation of the CU, however, was extending coverage to agricultural products without full EU membership thus triggering no financing of Turkish agricultural policy from the EU budget (Cakmak and Kasnakoglu 2001; Grethe 2004a; McClatchy, 1997). Such an exercise would have been a challenge of integrating EU and Turkish agricultural markets.

Meanwhile, the prospect of Turkish EU membership has come closer, thus making the inclusion of 'Policies' in the title of this paper legitimate. At the EU Council in December 2004, European heads of governments decided to start EU accession negotiations with Turkey which were opened in October 2005. Nonetheless, in the EU, discussion of Turkish membership is controversial for its geopolitical aspects, security policies, the compatibility of political institutions, income divergence and potential labour mobility and the budgetary consequences for current EU member states which would mainly result from EU structural and cohesion policies. The conflict between depth and breadth of the European integration process often dominates the discussion and the assessment of consequences arising from this conflict differs widely, as do positions with respect to Turkish EU membership (see e.g. CEPS, 2006; Flam, 2003; Griffiths and Özdemir, 2004; Jäger and Stewart, 2004; Quaisser and Reppegather, 2004; Quaisser and Wood, 2004; Togan and Hoekman, 2005). Compared to these aspects, the consequences of applying the Common Agricultural Policy (CAP) of the EU to Turkey is not at the forefront of the discussion.

Still, the time has come to discuss aspects of agricultural market integration, budgetary consequences of applying the CAP to Turkey and necessary adjustments of the CAP as well as Turkish agricultural policies in case of accession. A number of recent studies have focused on the agricultural sector (Burrell and Oskam, 2005; European Commission, 2004a; Eruygur and Cakmak, 2006; Grethe, 2005a; Togan et al., 2005). Even if a realistic time horizon for accession is probably beyond 2015, the huge structural differences between the agricultural sectors of Turkey and the EU, the different policies, and the sheer size of the Turkish agricultural sector and its importance in the Turkish economy all call for a timely analysis and discussion. Further, EU agricultural policy looks different today than in 1987 when Turkey applied for membership. The domestic price level in the EU has come closer to the world market for most products, domestic policies are less interventionist and direct income transfers have been introduced and to a large extent, been decoupled from production decisions. Turkey's recent agricultural policy involves a higher level of price protection and market

intervention than that of the EU. Therefore, envisaging compatibility with an EU type and level of agricultural market policy may be beneficial for Turkey, even independently from its membership perspective.

The aim of this paper is to present an overview of the challenges of the integration of Turkey's agricultural sector in the EU. The emphasis is on markets and policies rather than on institutions. To this purpose, Section 2 gives a short overview of agricultural policies, markets and trade in Turkey and the EU. In Section 3, effects of integration are assessed, partly in a qualitative manner, partly based on the discussion of various simulation model results. Chapter 4 formulates challenges for Turkey and the EU and Section 5 draws some conclusions.

2   Agricultural policies, markets and trade in Turkey and the EU

2.1   General overview

Table 1 gives an overview of the Turkish economy and the importance of its agricultural sector compared to the EU as well as Bulgaria and Romania, who are likely to accede to the EU in 2007. Turkey is a large country in terms of population and has a large agricultural sector, measured by production value as well as agricultural GDP. In terms of population size and agricultural production value Turkey is comparable to the ten New Member States (NMS-10). With regard to the role of the agricultural sector in the economy and of per capita income, Turkey equals Bulgaria and Romania in shares of agriculture in employment and GDP and per capita GDP in purchasing power standard (GDP_{PPS}). The high share of employment in agriculture reflects the low level of technological development of agriculture in Turkey and the fragmented farm structure: the average size of agricultural holdings was about 6 ha in 2001 and more than 50% of the parcels were cultivated by holdings consisting of more than five parcels (SIS, 2004). Compared to the EU-25, the Turkish economy is small; total Turkish GDP is less than 3% of that of the EU-25.
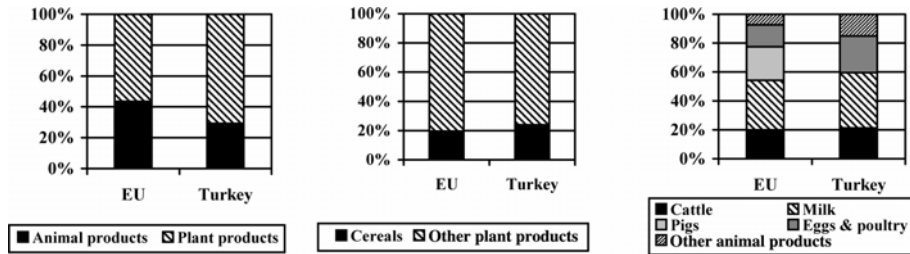
Table 1   Basic economic indicators in Turkey and the EU-25

	EU-25	NMS-10	Bulgaria and Romania	Turkey	Turkey/ EU-25
Population (mill.) (2005)[a]	461.3	74.1	29.4	71.6	15.5%
GDP (2005, bill. €)[a]	10,841.9	557.0	100.8	290.5	2.8%
GDP_{PPS} per capita (2005, €/year)[a,b]	23,503.0	13,796.0	8109.0	7286.0	31.0%
GDP of the agricultural sector (2005, bill. €)	205.3	22.7	10.1	30.4	14.8%
As a share in total GDP[a]	1.9%	4.1%	9.9%	10.5%	
Agricultural production value (2004, bill. €)	291.7[a]	27.6[a]	15.9[a]	30.8[c]	10.6%
Share of employment in agriculture (Bulgaria and Romania 2002; EU 2005; Turkey 2003)	4.9%[a]	12.1%[a]	32.3%[d]	33.9%[e]	

Source: [a]Eurostat (2006a), [b]Eurostat (2006b), [c]SIS (2005), OECD (2006), [d]European Commission (2004b), [e]SIS (2006a), own calculations.

A comparison of the composition of agricultural production between the EU and Turkey (Figure 1) reveals some interesting differences. The share of plant products in total agricultural production is much higher in Turkey than it is in the EU. Furthermore, sheep and goat meat as well as milk, poultry and eggs have a much higher value share in Turkish animal production than in the EU while pork plays no role for cultural reasons.
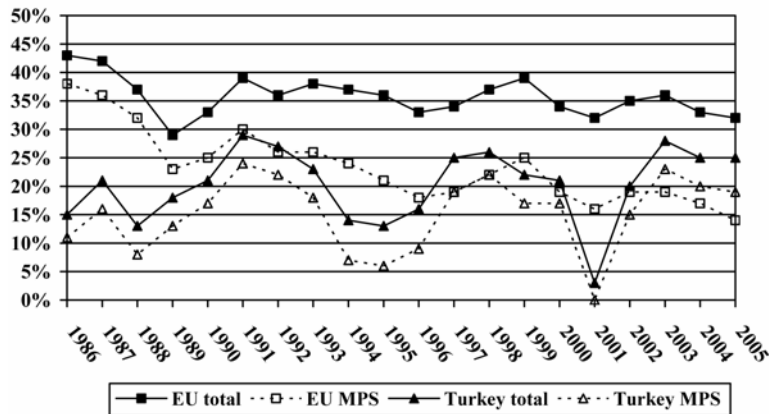
Figure 1   An EU-Turkey comparison of agricultural production

Source: European Commission (2005), SIS (2005), OECD (2006), own calculations.

To give a general overview of the level of agricultural policies in Turkey and the EU, Figure 2 presents an overview of the percentage PSE for the period 1986–2005.

Figure 2   Percentage PSE and MPS in Turkey and the EU 1986–2005

Source: OECD (2006).

The PSE in the EU was between 29% and 44% of agricultural production value between 1986 and 2005. During the same period, the PSE was much more volatile in Turkey and at a significantly lower level, between 12% and 29% of production value, in all years except 2001.[1] The higher volatility of the PSE in Turkey results from a higher volatility of the real exchange rate as well as more pronounced changes in agricultural policy.
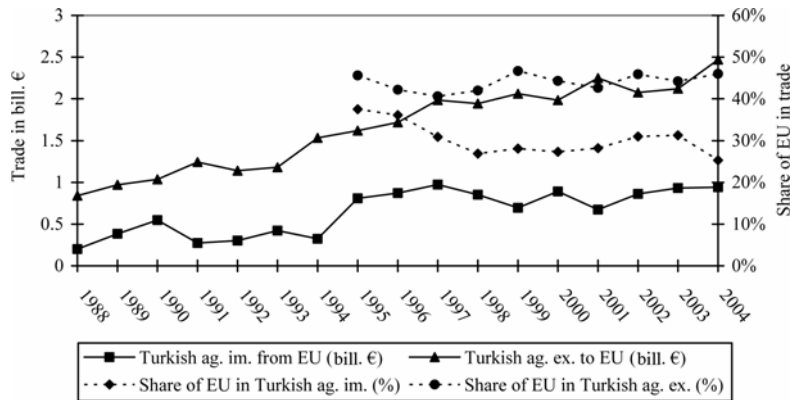
The composition of the total PSE varies strongly between Turkey and the EU. In the EU, the Market Price Support (MPS) component has declined significantly since the McSharry reform in 1992 and is now below 50%, with much of this support component having been replaced by direct payments. In Turkey, the MPS component was about 50–80% in this period and since 2003 it has exceeded the percentage MPS in the EU.

Before 2002, non-MPS was mainly concentrated on input and credit subsidies. In recent years, input subsidies were reduced and an increasing share of support is granted in the form of direct payments to producers under a World Bank supported agricultural policy reform programme (Lundell et al., 2004; World Bank, 2005).

Turkish agricultural exports to the EU are subject to substantial tariff preferences. Since 1987, almost all ad valorem tariffs have been abolished. In some cases reduced rates are also granted for specific duties. In 2001, about 7% of Turkish agricultural exports to the EU were not subject to tariffs or the entry price system because the EU generally does not apply any import barriers to these products on a Most Favoured Nation (MFN) basis (e.g. cotton and oilseeds). More than 54% of Turkish agricultural exports to the EU were tariff/entry price system free due to trade preferences. Most of fresh as well as processed fruit and vegetables fall into this group. Furthermore, about 36% of Turkish agricultural exports to the EU were subject to a partial preferential tariff reduction, but they were still subject to a reduced tariff rate (olive oil) and/or the entry price system (some fruit and vegetables). Turkey paid the MFN tariff rate for only the 2% of its remaining exports. Turkey also grants preferential access for imports of cereals, oilseeds, meat and dairy from the EU, which are all limited in the form of Tariff Rate Quotas (TRQ).[2]

Figure 3 depicts Turkish agricultural trade with the EU for the period 1988–2004. Both, agricultural imports from and exports to the EU have risen substantially over this period and Turkey always had a positive trade balance for agricultural products with the EU. Turkish agricultural exports to the EU have risen faster than imports, which have stagnated since 1995 and the share of agricultural exports which goes to the EU has remained rather constant at about 40–46% over the last decade. Over the same period, the share of agricultural imports originating from the EU has declined from about 37% to 25%.

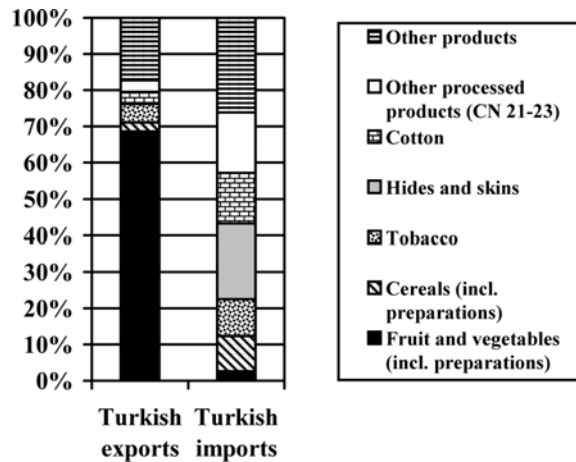**Figure 3**   Turkish agricultural trade with the EU (1988–2004)

Source: Eurostat (2006a), ITC (various issues), own calculations.

The composition of Turkish agricultural exports to and imports from the EU differs considerably, as shown in Figure 4. Fruit and vegetables, in fresh and processed form, dominate Turkish agricultural exports with a share of almost 70%. Imports from the EU are much more diversified. Hides and skins as well as cotton, which are important inputs

for the Turkish textile and leather sectors, together account for almost 35%. Other important product groups are tobacco and cereals. Also processed agricultural products play a much more important role in Turkish imports from the EU than in its exports.

Figure 4 Composition of Turkish agricultural trade with the EU (2003/2004 average)

Source: Eurostat (2006a), own calculations.

2.2   Specific markets

Turkey's membership in the EU would imply a complete abolishment of political trade barriers still in force between Turkey and the EU and the application of the EU tariff schedule in Turkey for imports from third countries. This would lead to an alignment of prices for agricultural products in Turkey and the EU, which are currently still subject to trade barriers. Remaining price differences would be due to transportation costs, quality differences and different transaction costs in the marketing chain. In order to get a first impression of the price changes which can be expected in case of market integration, price and protection levels for selected products are compared in the following.

Table 2 presents and compares producer prices for selected crops in Turkey and the EU for the two most recent years available. It is shown that the Turkish price level is significantly above the EU level on average.

Table 2   Farmgate prices for crops in Turkey and the EU (€/t) (2004–2005)

Product	Turkey	EU	Turkey/EU%
Cereals			
Wheat	199	118	169
Barley	149	104	143
Corn	168	127	132
Other Crops			
Sunflower seed	295	252	117
Sugar (wholesale prices)	894	731	122

Source: OECD (2006), SIS (2006b), European Commission (2006a), own calculations.

In recent years, cereal prices in Turkey were significantly above those in the EU. This reflects the different level of intervention prices: in the EU the intervention price is at €101.31/t for all cereals. This is below current world market price levels and medium-term projections and the intervention price will therefore probably be of little importance for market price formation in most regions in the EU in the future, at least for wheat and corn. In 2006, cereal intervention prices in Turkey range from $150 to 250/t (USDA, 2006). This indicates that Turkey would have to lower its support prices with market integration with the EU and cereal producers would receive much lower prices under a normal world market situation.

For oilseeds, the EU applies no tariffs. Prices are, therefore, at world market level. In contrast, Turkey applies significant tariffs for oilseeds thus Table 2 shows that sunflower seed prices in Turkey are above the EU level. Both the EU and Turkey provide high protection for sugar through an intervention price system, high tariffs and export subsidies which are implicit in the case of Turkey in the budgetary losses of state trading enterprises (Grethe, 2004a, p.83). Both countries apply a supply control system with production quotas at the farm level. Under the current EU reform of the sugar market regime, the administered minimum price of the EU will be reduced to €404.4/t, which is about half the current price level in Turkey.

For fruit and vegetables, farmgate prices are generally below average EU level in Turkey, but a comparison is not reported here as the difference mainly reflects transportation costs and different product qualities rather than agricultural policies. Most fruits and vegetables can currently be exported from Turkey to the EU without any tariffs or other political market barriers. Exemptions are some seasonal ad valorem tariffs at a level between 10 and 20% and high specific tariffs for olive oil. For all of these products Turkey is a net exporter and abolition of remaining market barriers would probably result in slightly increasing prices in Turkey. Effects of the entry price system, which the EU fully applies to Turkey for imports of some fruits and vegetables, are difficult to assess.[3] Yet Turkish exporters report that the EU entry price system usually does not act as a trade barrier due to the high domestic prices for those products of a quality which can be exported to the EU.

Table 3 presents and compares prices for animal products in Turkey and the EU for the most recent years available. For all animal products except for sheep meat, prices in Turkey are above EU level.

Table 3   Prices for animal products in Turkey and the EU (€/t)

Product and year	Turkey	EU	Turkey/EU%
Meat (farmgate prices, 2004–2005)			
Beef	3932	2583	152
Sheep meat	3713	4094	91
Poultry	1246	1023	122
Dairy Products			
Farmgate price milk (2004–2005)	299	284	105
Butter (wholesale/intervention price, 2004)	3522	3052	115
Eggs (2004–2005)	1547	923	168

Source: OECD (2006), SIS (2006b), Agra Europe (2006), own calculations.

In Turkey and the EU, meat markets are largely protected by prohibitive tariffs. In addition, Turkey applies an import ban on red meat and live animal imports; a ban officially stated to be due to the danger of a potential outbreak of foot and mouth disease, but widely considered to be primarily motivated by protectionist aims. Prices for beef and poultry, as well as eggs, are significantly higher in Turkey than in the EU. For poultry and eggs the high protection level for cereals and other feed components compensates and in some years even overcompensates, for the higher protection on the output (Grethe and Uzmay, 2000). Sheep meat prices are slightly lower in Turkey than in the EU.

For cow's milk, the Turkish farmgate price is slightly above the EU level, but prices for processed dairy products are much higher in Turkey.[4] This raises the interesting question of whether this price difference can be explained by higher collection and processing costs in Turkey or is due to some kind of cartel-like behaviour of dairy processing companies in an oligopolistic market for highly processed milk products which is generally isolated from international competition (Grethe, 2005b). Should the markets be integrated, competition would not take place at the level of raw milk, but rather for processed products like cheese, butter and skimmed milk powder, thus Turkish prices for milk products are likely to fall in case of EU membership of Turkey.[5]

3 Potential effects of EU integration

3.1 General considerations

Turkey's accession to the EU would affect its agricultural sector in many ways. First, market integration would lead to multiple producer and consumer price changes because of the abolishment of trade barriers between Turkey and the EU as well as the implementation of EU market and price policies in Turkey. The most important price policy of the EU is its import tariff system, which is complemented by export subsidies and some domestic administered prices such as intervention and reference prices. The resulting alignment of prices would mainly imply an adjustment of Turkish prices to the EU level because the EU is the much larger market for most products than the Turkish market and because Turkey would have to adopt the CAP. Production and consumption in Turkey would adjust to these new prices resulting in changes in Turkey's external trade. This would have effects on total welfare for Turkey as well as on real income distribution among consumers and producers and within these groups.

Furthermore, Turkey would become eligible to the EU system of direct payments to producers, which would potentially involve a significant transfer from the EU budget to Turkey. Also, Turkey would become eligible for the co-financing of rural development measures under the so-called second pillar of the CAP. Both, direct payments and rural development measures are likely to affect resource allocation in the agricultural sector and thus add to price effects stemming from market integration. The Turkish agricultural sector is also likely to be affected by other EU policies in case of accession, especially the transfers resulting from the EU structural policy and by developments in other sectors of the economy which may come about due to EU membership. And finally, the agriculture and food sector may be more successful in attracting foreign direct investments in case of EU membership, especially from other EU countries.

Several studies have tried to assess the effects of EU accession on the agricultural sector quantitatively. Generally, they apply simulation models and focus on the effect of market integration, especially on prices and production in Turkey. Core results of these studies with a focus on Grethe (2004a) are presented in Section 3.2 of this paper. Also, the budgetary transfers from the EU to Turkey which would potentially result from the CAP are analysed and discussed in Section 3.3.
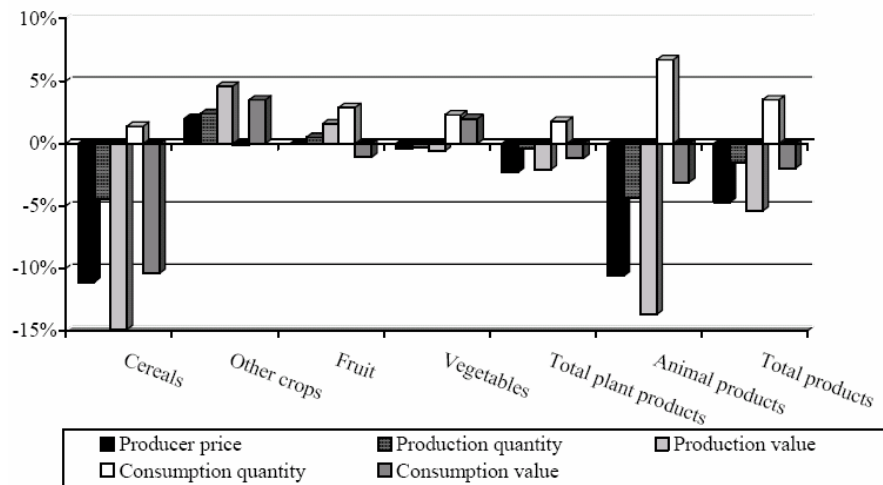
3.2   Simulation model analyses

Recent simulation model analyses of Turkish market integration in the EU include Eruygur and Cakmak (2006), Grethe (2004a,b) and Togan et al. (2005). All of the models used are partial models of the Turkish agricultural sector. Generally, the production impact of price changes is depicted. Togan et al. use independent supply and demand systems which are fed with exogenous price assumptions whereas the more complex models used in Eruygur and Cakmak as well as Grethe solve supply and demand systems simultaneously and allow for endogenous price formation. Direct payments are depicted in Togan et al. as well as in Eruygur and Cakmak, although only as a distributive policy and without regard for their potential production effects. The exclusion of the allocation effects of direct payments may be acceptable, as EU direct payments are already decoupled from production to a large extent and will be more so in the future. All models are none-dynamic and imply a competitive market structure. Demand systems are behavioural in all models; the supply system is a calibrated programming model in Eruygur and Cakmak and formulated in a behavioural form in the others. The models used in Eruygur and Cakmak as well as Grethe have a regionalised supply structure which allows for the analysis of regional effects. In addition, Grethe depicts consumption by income quintiles and Togan et al. differentiate consumption by rural/urban household type. As a result, some conclusions with respect to the distributive effects among consumer groups can be drawn.

Results cannot be compared directly due to different model base periods, projection horizon and scenario formulation. In the following, core results are presented in a summarising manner with a few examples from Grethe (2004a). Generally, all studies find a declining agricultural price level for Turkey in case of market integration. In the light of recent protection levels (see above) this is within expectations. Along with lower prices come lower agricultural production, higher consumption and Turkey turning from a net exporter of agricultural and food products to a net importer. This effect is found to be much more pronounced for animal products than for plant products in Eruygur and Cakmak as well as Grethe which is in line with the much higher protection level for animal products reported above. Figure 5 presents simulation results for full agricultural market integration between Turkey and the EU in 2006, compared to a situation without such market integration and a continuation of Turkish agricultural policy at its base period level ('Status Quo Scenario').[6]

The decline in producer prices is most pronounced with more than 10% for cereals and for animal products. The rise of the price for the product group 'other crops' stems from the high EU sugar price, for which the current reform is not yet implemented. After implementing sugar market reform, 'other crops' would also experience a decline of prices in case of market integration. What may seem surprising is the low effect of agricultural market integration on the price level for fruits and vegetables and thus on production, as one may expect Turkey to have a comparative advantage in the production

of these products attributable to labour costs and to climate.[7] This, however, is currently not the case. With very few exemptions such as olive oil as well as tomato paste and table grape exports exceeding the tariff free TRQ, no tariffs are charged on exports of fruit and vegetables from Turkey to the EU and the entry price systems seems not to be of any effect (see above). Therefore, the abolition of these barriers in any simulation model context should be of little effect for the product groups fruit and vegetables as a whole.

Figure 5 Price and production changes at farm level and consumption changes with market integration compared to the status quo scenario (2006, %)
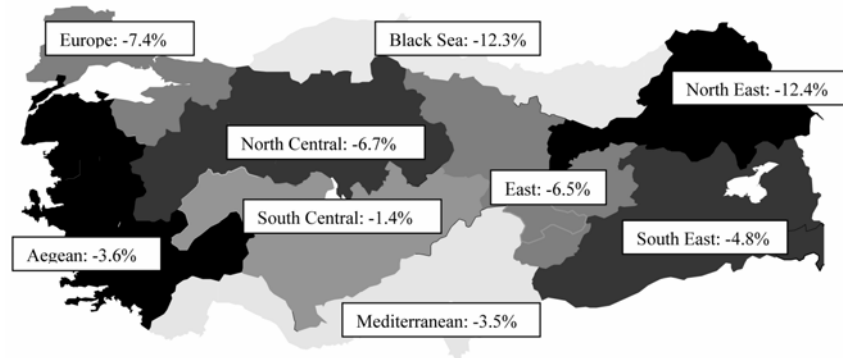

Source: Own calculations.

In the group of animal products, the largest decline in price is simulated for beef, as the current price stems from a situation in which the Turkish market is isolated from international competition and domestic prices are very high. Total agricultural production quantity (base price weighted) declines by 1.5%, reflecting the low price elasticity of aggregate agricultural supply and total consumption quantity increases by 3.5%.

Turkey is a large country with tremendous heterogeneity of climate and agricultural production systems. Therefore, it is interesting to look at the effects of EU market integration on regional production. Figure 6 depicts the simulated change in production value resulting from market integration in nine agricultural regions of Turkey. As price formation is modelled to take place on the national level and thus all changes in relative prices are equal throughout Turkey, differences stem purely from the different composition of agricultural production in different regions.

For Turkey as a whole the decline in production value is 5.4% (Figure 5). Figure 6 shows that the change in production value varies significantly among regions. It is the lowest in the South central region which is due to high production shares of table grapes and potatoes for which prices increase with market integration compared to the status quo scenario. The decline of production value is also low in the Aegean and the Mediterranean region, where fruit and vegetables, for which price changes are small, have a large share in total production and the share of animal products is relatively low.

In the Northeast region, on the other hand, the decline is almost four times as high as in the western and southern coastal regions. This is due to the high share of cereals in plant production and a high share of animal products in total production.

Figure 6   Regional changes in production value, with market integration with the EU

Source: Own calculations.

The overall welfare results calculated based on the comparative static analysis presented above are moderate. Producers are estimated to lose slightly more than €1 billion producer surplus, 3.7% of their production value and consumers are estimated to gain about €1.5 billion (measured as compensating variation), which is 4.9% of their expenditure for food products. Taking into account changes in the government budget the resulting net welfare gain is about €480 million, which is about 1.7% of agricultural production value or 0.3% of GDP in Turkey.

To what extent agricultural producers would lose or win from EU integration also depends on other policies. Although farmers would face declining prices, they would potentially receive direct payments under the CAP, which could amount to €0.9–3.8 billion (see below). The current level of direct payments is about €1.5 billion (OECD, 2006) and it is thus not yet clear, whether payments under the EU system would be below or above the current level of national payments. Additionally, EU funding for rural development measures may amount to €1.5–2 billion. To what extent these payments will contribute to farmers' incomes, however, depends on the design of second pillar policies for Turkey, which include a very heterogeneous package of policy options.

Results presented here are subject to some qualifications. First, results are based on the assumption of a 100% transmission of the duty-paid import price to the domestic price with the exemption of animal products in Grethe (2004a), for which price transmission elasticities are estimated and set between 0.66 and 0.8. For a large country like Turkey with poorly developed infrastructure in many regions, spatial market integration may be imperfect for some plant products, which could reduce the effects of changes in border policies. For wheat, however, Weitzel (2006) comes to the conclusion that Turkish markets are spatially integrated. Several factors may contribute to spatial market integration for wheat: the Turkish government pursues a national support price policy and wheat can be stored and transported easily, thus making price formation quite transparent. For other products which are more perishable such as fruits and vegetables, the outcome of a price transmission analysis may reveal less spatially integrated markets.

Another limitation of the analyses presented here is that they do not include any production effects which may result from direct payments, second pillar policies or general structural policy. For direct payments, recent analyses suggest that they may have an effect on production even if they are fully decoupled as they lead to increasing wealth levels and thus to higher production by risk-averse producers and because of the better position of farmers on credit markets. But this effect would be much less than that of a comparable transfer granted in the form of price support (Burfisher and Hopkins, 2003; OECD, 2003, 2004).

In addition, although very limited productivity enhancement is included in the analyses, second pillar policies could contribute to long term increased productivity. Next to second pillar policies, improved productivity in agricultural production as well as food processing may result from increased flows of foreign direct investment into the Turkish agricultural and food sector, general EU structural policies which are partially financed by the EU budget, a more efficient agricultural administration including education and extension for farmers, and better conditions in other sectors of the economy, which would allow for a reduction of the agricultural labour force.

Eruygur and Cakmak (2006, p.14, 16) show that the difference between a conservative and a 'more optimistic, but plausible' assumption regarding the rates of technical progress in agricultural production has an as important positive effect on production quantities in 2015, as the reduction of the Turkish price level in case of EU accession has a negative effect. Grethe (2004a, p.220) shows that a reduction of 10% of the price margin between farmgate and wholesale level, which would result from increased efficiency of the marketing chain, would have a more relevant effect on net welfare than the comparative static gains resulting from market integration reported above.

3.3   Effects of Turkey's accession on the CAP budget of the EU

Due to the large agricultural sector in Turkey, the implementation of the CAP is expected to be costly to the EU budget. Main budgetary items are the direct payments to producers under the first pillar of the CAP and payments under the second pillar of the CAP for rural development measures. An analysis of budgetary outlays for applying the CAP to Turkey is subject to considerable uncertainties and due to the long period expected before accession, the time component is extremely important. Four areas of interest play a major role, not least, the state of the CAP itself. Many reforms of the CAP have already been determined but are not yet fully implemented, such as the sugar market reform. At the same time, major decisions on the level of future outlays for direct payments and rural development policies are yet to be made.

Secondly, the state of the Turkish agricultural sector will determine the budgetary cost and net transfers to Turkey resulting from the CAP at the time of accession. As a result of changes in world market prices, technological progress, increasing incomes and population and many other factors, the Turkish agricultural sector will be different in 2015. In addition, accession itself will affect the allocation of resources in Turkish agriculture.

Thirdly, Turkey's contribution to the EU budget in case of accession will determine the resulting budgetary net transfers. As the contribution of member states to the EU budget is mainly determined by the size of their GDP, shares in GDP are a good indicator for shares in the EU budget. But Turkey's share in the total GDP

of a potential EU-29 (including Romania, Bulgaria, Turkey and Croatia) in 2015 may be different from that today, as economic growth in the EU-28 may be different from that in Turkey.

And finally, the conditions of Turkish accession to be negotiated between the EU and Turkey will significantly determine budgetary flows. Negotiating factors include transition periods for fully applying direct payments, the level of payments under the second pillar of the CAP and the base ceilings for arable and livestock payments.

Table 4 displays potential outlays for applying the CAP to Turkey under various assumptions with regard to the level of direct payments. The first columns 'current policies' display direct payments under the assumption that rates are kept constant in nominal terms between 2004 and 2015. Direct payments are calculated as product-specific EU rates for cereals, oilseeds and protein crops; tobacco, olive oil, cotton, milk, beef, sheep and goat meat applied to Turkish areas, yield and production quantities from a partial equilibrium model analysis of full integration of Turkish and EU agricultural markets.[8] As a result, direct payments for Turkey could amount to about €5.3 billion in 2015.

Table 4   EU budgetary outlays for applying the CAP to Turkey

	Budgetary outlays (bill. 2004 €)					
	Current policies			Reduction of DP		
	2015		2025	2015		2025
	Full	25% of DP		Full	25% of DP	
CAP						
Direct payments	5.3	1.3	4.5	3.8	0.9	2.4
Second pillar	1.5	1.5	2.0	1.5	1.5	2.0
Other policies	1.0	1.0	1.0	1.0	1.0	1.0
Total CAP	7.8	3.8	7.5	6.3	3.5	5.4
Structural policy	7.7	7.7	Up to 25.6	7.7	7.7	Up to 25.6

Source: Grethe (2005a).

More realistically, however, the last three columns of Table 4 show direct payments under the assumption that they are reduced annually by 3% in nominal terms due to the budget ceiling in the first pillar of the CAP, which was set by the European Council in October 2002. This is likely to result in significant reductions of EU direct payments from 2007 on when Bulgaria and Romania are scheduled to become EU members and budgetary outlays for direct payments for the NMS increase in the course of being phased in. Under this assumption, direct payments in 2015 would amount to €3.8 billion if granted fully from the first year on. Aggregate estimates for direct payments are roughly in line with other studies (Oskam et al., 2005; Togan, 2004) but significantly below those presented by the European Commission (2004a).

Alternatively, if direct payments may be phased in for Turkey as applied for the NMS-10 (columns '25% of DP' in Table 4), which has already been mentioned by the European Commission (2004a), budgetary outlays for the CAP in Turkey would be much lower. Although consistent with the approach applied to the Central European countries, a phasing in of direct payments seems less than convincing for Turkey for two reasons.

First, in contrast to the Central European countries average Turkish price levels for agricultural products would decline significantly due to market integration with the EU. Second, Turkey currently applies a system of direct payments at a level of €1.5 billion annually (OECD, 2006).

Generally, it is an open question as to whether negotiations about direct payments for Turkey in five years or more will still be based on these indicators. The implementation of the Simplified Area Payments Scheme (SAPS) for eight of the NMS-10 has set precedents for uniform per ha premiums. Fixing direct payments per ha based on the level of the SAPS for Latvia at about €80/ha and applying it to Turkish agricultural area leads to a somewhat lower level of direct payments of about €3 billion.

About €1.5 billion of EU budgetary outlays for Turkey in 2015 would be for the second pillar of the CAP. This estimate is based on the EU budgetary outlays for rural development policies in the first years of membership for Bulgaria and Romania and on the criteria specified by the EU Commission for the distribution of modulation funds: agricultural area, employment in agriculture and GDP$_{PPS}$ per capita.[9] The category 'other policies' in Table 4 includes outlays for market policies and other policies which are not included under the direct payments and second pillar categories and is estimated at €1 billion based on the current composition of the CAP budget.

In summary, Table 4 shows that the implementation of the CAP in Turkey without any phasing in of direct payments but with an annual decline in nominal terms by 3% would result in EU budgetary outlays of about €6.3 billion. Should direct payments be phased in as for the Central European Countries, this would reduce to €3.5 billion. In 2025, after further reduction of direct payments but full phasing in of second pillar policies, total outlays for the CAP in Turkey are projected at €5.4 billion, which would be about 12% of Turkish agricultural production value. So for the agricultural sector, transfers resulting from the CAP are substantial. On the other hand, applying the CAP in Turkey would go along with significant price reductions leading to an estimated loss in producer income of about €1 billion and probably also an abolition of transfers to agricultural producers under the current Turkish system of direct payments.

4   Challenges for agricultural policy in Turkey and the EU

4.1   Turkey

As shown above, current agricultural prices in Turkey are significantly above EU levels for most products. In order to avoid a sudden decrease of agricultural prices in case of accession, a timely, gradual, transparent and reliable path of lowering prices should be pursued. Such a strategy would generally bring the Turkish agricultural sector closer to world market price ratios and levels which would enhance the efficiency of Turkish agriculture even without accession to the EU.

The second important challenge is to make Turkish agriculture more competitive and thus increase agricultural incomes. Policies needed include the training of farmers and investments in education of the rural population in general in order to increase their productivity in agriculture or to enable them to leave the sector (Burrell, 2005a). This would allow the reduction in the size of the agricultural labour force and thus enhancing agricultural incomes and general economic growth and employment. Furthermore, public investment in rural infrastructure, modernisation of the food processing industry

(van Berkum, 2005), especially in those sectors which have been largely isolated from international competition (e.g. the meat and dairy sectors), as well as measures to improve the distribution of land among farms (e.g. reparcelling) are essential for increasing productivity. Also the enhancement of the national food safety as well as animal and plant health systems (Burrell, 2005b) is of importance in order to increase competitiveness of Turkish products on the EU market. Finally there is an enormous challenge in adapting Turkish institutions so that they can apply the CAP.

EU funding for all such measures will be available prior to accession under the Instrument for PreAccession Assistance (IPA), which is available for all candidate and potential candidate countries to the EU. For the period 2007–2013 the IPA financial envelope amounts to €11.5 billion (European Commission, 2006b) and the share of Turkey in this envelope is estimated at about 70% (ESI, 2005; Schultz, 2005), which would be about €1.2 billion annually. After accession, such policies can be cofinanced under the EU's general structural policy and under the rural development policy portion of the CAP. It is a challenge for Turkish agricultural policy to target these funds at education, innovation and productivity enhancement in the agricultural sector instead of distributing them as windfall gains mainly contributing to the preservation of existing structures.

4.2   EU

Assimilating Turkey financially is often mentioned as an enormous challenge for the EU. The analysis presented above shows that Turkey would be a significant recipient of CAP funds, while receipts would not be exorbitant. The above projections estimate Turkey would receive about 5.7–10.2% of the future CAP budget. This is not especially high compared to other large EU countries. For example in 2002 France received about €9.9 billion, which was 21% of the CAP budget of the EU-15 (European Commission, 2003). Rather than the CAP, it is the future development of EU structural policy and the results with respect to any phasing in period for this policy that will largely determine the level of total budgetary outlays and net transfers from the EU-28 to Turkey. Based on the examples of Bulgaria and Romania as well as the 4% of GDP limit after full phasing in, payments under the EU structural policy to Turkey could amount to about €8 billion in 2015 and increase to more than €20 billion in 2025 (Table 4). In 2025, with fully phased in direct payments, the contribution of the CAP to the total net transfers to Turkey may therefore be below 20% (Grethe, 2005a).

Depending on the future development of the CAP, it is likely that direct payments may constitute the most important budgetary transfer under the CAP to Turkey. Direct payments, however, tend to capitalise in land prices as long as payments are linked to area. Such transfers may even inhibit the necessary process of improvement of the Turkish agricultural structure which currently displays an average farm size of about 6 ha. Therefore it may be of more interest for Turkey to transfer money under the second pillar of the CAP where it can be targeted at productivity enhancing measures discussed above. From an EU perspective, Turkey's accession could be an additional argument, among many others, to phase out direct payments for which the justification has become unclear.

Finally, the EU still applies production quotas for sugar and milk. In light of the ongoing alignment of EU prices in the direction of the world market level such quotas will become redundant in the future. For sugar, the currently implemented reform may be

sufficient to abolish the quota system, for milk a further reduction of intervention prices is necessary. The abolishment of quota systems should be finalised before accession of Turkey, in order to avoid the costly implementation and maintenance of a system which will disappear a short time later.

5 Conclusion

With the start of accession negotiations the perspective for Turkey to become a full EU member has become more tangible than before and the integration of agricultural policies and markets has become a topic of interest for policy makers as well as researchers. The level of price support has been significantly higher in Turkey than in the EU for most products in recent years and the EU is proceeding to further liberalise agricultural markets and implement direct payments to producers which are increasingly decoupled. Therefore, aligning agricultural prices in Turkey with those in the EU brings Turkish prices more towards world market price ratios and levels – a policy which enhances the efficient distribution of resources in Turkey even without accession to the EU.

Quantitative studies find a declining agricultural price level for Turkey in the case of market integration, especially for cereals and animal products. This would lead to less production, more consumption and Turkey becoming a net importer instead of a net exporter of agricultural products. Effects differ significantly among regions due to very different production programmes. On aggregate, resulting welfare gains for consumers exceed the losses for producers and a comparative static net welfare gain of about €0.5 billion arises. More important, however, are potential positive productivity effects which may be generated by the prospect of EU membership.

The analysis of effects of Turkish accession on the EU budget is subject to many uncertainties and can therefore only provide a rough range of potential results under different assumptions. It is argued in this paper that a realistic range of outlays for implementing the CAP in Turkey is between €3.5 and €6.3 billion, which is in line with other large EU members. The strongest uncertainty lies in the level of direct payments, which may be reduced significantly by the time of Turkey's accession and may vary depending on how they are phased in for Turkey.

The accession of Turkey to the EU should be an additional incentive to reconsider the motivation of direct payments and begin gradually phasing them out in a transparent and reliable way. Among other reasons, they mainly capitalise into land prices and therefore threaten to inhibit the process of structural change in agriculture which is necessary in order to enhance agricultural productivity and incomes in Turkey.

The main challenge for Turkey in the years to come is to increase agricultural productivity. Probably the most important ingredient in doing so is the establishment of a sound macroeconomic environment which allows agricultural labour to move to other sectors of the economy. Other policies which would enhance agricultural productivity are the training of farmers and the rural population in general in order to increase their productivity in agriculture or to enable them to leave the sector, public investment in rural infrastructure, modernisation of the food processing industry and measures to improve the distribution of land among farms such as reparcelling. In order to channel EU funds into such productivity-enhancing policies, the second pillar of the CAP is the more suitable instrument than direct payments which are based on area endowment.

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Notes

[1]The low level in 2001 mainly stems from the macroeconomic crisis and sudden devaluation of the Turkish Lira. This devaluation resulted in low market prices in Turkey expressed in foreign currency and thus a low market price component, which is calculated by the OECD as the difference between the domestic and the international price.

[2]For a detailed description of preferential trade rules between Turkey and the EU see Grethe (2004a, pp.57–68).

[3]For a comprehensive analysis of the effects of the EU entry price system see Grethe and Tangermann (1999).

[4]Based on a survey among dairy processors Uzmay et al. (forthcoming) show that especially selling prices of high quality products from modern dairy processors are significantly above EU level. For butter they report a price of 4515 €/t in 2004.

[5]In addition, dairy intervention prices in the EU will be further reduced to 2463.9 €/t for butter from July 2007 on and have currently been reduced to 1746.9 €/t for skimmed milk powder.

[6]A detailed description of the model specification, base data and scenario formulation can be found in Grethe (2004a).

[7]For example Togan et al. (2005, p.64) assume the Turkish domestic price for grapes to increase by about 35% in case of market integration. To derive such assumptions, however, from current price differences is misleading, as they may be due to factors other than tariffs. The highest tariff charged on exports of grapes from Turkey to the EU is 16.7% in certain calendar periods. This would thus be the upper bound for a potential increase in the Turkish price under the assumption that the abolition of the tariff would fully transmit to the Turkish domestic price.

[8]A full documentation of the underlying assumptions can be found in Grethe (2005a).

[9]EC Directive 1782/2003, Official *Journal of the European Communities* (OJ) L 270, 21.10.2003. The same criteria were used by the European Commission, along with the somewhat nebulous '…specific territorial situation in each country' (European Commission, 2002, p.5) for the allocation of SAPARD funds to the Central European accession candidates and in the allocation of rural development funds for the NMS-10 as well as Bulgaria and Romania.