Distortions to Agricultural Incentives in Eastern Europe and Central Asia

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In a recent survey of European economic growth since 1950, Crafts and Toniolo (2008) conclude that incentive structures are a crucial explanator of comparative growth rates of the economies of east and west Europe. Pre-empting that, a 2006 report on trade performance and policies in Eastern Europe and Central Asia included as one of its key recommendations the need to reduce the mean and variance of the tariff equivalents of trade barriers, and in particular to reduce unilaterally the policy regimes' anti-export bias, especially in countries exporting primary products (Broadman 2006). To progress such reform in Europe's transition economies efficiently and effectively – and to see how recent policies line up with those of the European Union (EU) – requires better information on the extent of reform during the past two decades and of current policy influences on incentives within and between sectors. Immediately prior to their transition to market economies, policies in the region greatly distorted producer and consumer incentives, especially for agricultural products. Those distortions have been reduced substantially in several countries, but large variations remain across the region and distortions appear to be growing again in some countries. Now is thus an opportune time to examine how policies affecting agriculture are evolving in this region, including as part of the adjustment to EU accession for ten of the transition economies in the region.

To assist that process, the present study assesses the changing landscape of agricultural protection or taxation patterns in the ECA region. It is based on a sample of eleven Central and Eastern European (CEE) countries (the ten new EU members (Bulgaria and Romania joined on 1 January 2007, following eight that joined in May 2004, namely the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovenia, Slovakia) plus

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[1] This chapter draws on the introductory and country chapters in Anderson and Swinnen (2008), with data updated using Anderson and Valenzuela (2008). Much of the historical data and nominal protection estimates can be found in the Appendix.

Turkey), and seven Commonwealth of Independent States (CIS) countries (Russia, Kazakhstan, Ukraine, Turkmenistan, Uzbekistan, Kyrgyz Republic and Tajikistan). Together these countries in 2000-04 accounted for 89 percent of the region's agricultural value added, 91 percent of its population and 95 percent of total GDP. Some key characteristics of those economies are shown in Table 1, drawn from the detailed compendium of indicators provided in the Appendix. Analyses of politically feasible agricultural subsidy and trade policy reforms, or of policy options for coping with structural changes such as the current boom in energy raw material prices that has intersectoral Dutch-disease effects, need to be based on a clear understanding of the recent and current extent of policy interventions and the politico-economic forces behind their evolution. This study thus also seeks to understand better the political economy of distortions to agricultural incentives in ECA countries. With that better understanding, the study's third purpose is to explore prospects for further reducing distortions to agricultural incentives and their implications for agricultural competitiveness and trade of the different ECA countries, including those that have recently joined the EU.

The great diversity within the group of ECA countries – in terms of relative resource endowments and comparative advantages, stages of development and transition, agricultural and trade policy regimes, and memberships of the EU, WTO, OECD and regional trading agreements – make the set of countries chosen a rich sample for comparative study. Turkey and the central and eastern European countries that are now EU members differ substantially from the rest of the former Union of Soviet Socialist Republics (USSR) that are now members of the Commonwealth of Independent States (CIS), having a higher per capita income (three-quarters of the global average, compared with one-third for the CIS) and a higher population density (half the global land per worker and 70 percent of the global agricultural land per capita, compared with 3.4 and 2.5 times, respectively, for the CIS).

Growth and Structural Changes During Transition

Before examining policy changes, it is helpful to review the economic growth and intersectoral changes that have taken place in Europe's various transition economies over the past two decades. The initial years of transition from central planning to a more market-based economy saw production fall in the majority of sectors, before it recovered at varying rates

from the mid-1990s. Real GDP for the region as a whole fell by almost 6 percent per year during 1990-94. The decline for the central and eastern European (CEE) sample was only 0.6 percent, while for the CIS sample it was 11 percent and for the residual non-studies countries of the CIS 12 percent. By contrast, annual GDP growth in the 1995-2004 period averaged 2.7 percent: the CIS sample was slowest (2.2 percent), the CEE countries somewhat higher at 3.2 percent, and the residual enjoyed 5.1 percent.

Within those economies, agricultural value added measured at constant prices appears to have declined less rapidly than non-agricultural GDP in the early years of transition, but also to have grown less rapidly in the subsequent decade. The domestic terms of trade (the prices of their outputs relative to the prices of purchased inputs) apparently fell even more for farmers than for non-farmers, however, because agriculture's share of GDP measured in current prices declined even in the early transition period. Unlike in the central planning period, this did not allow faster industrialization but rather an expansion in the services sector, which increased from less than half the economy prior to 1993 to two-thirds by 2004.

The halving of agriculture's share of GDP in the ECA region between 1992 and 2004 was accompanied by only a one-quarter decline in agriculture's share of employment, according to FAO statistics (which are not always consistent with national data because of definitional differences). In all three sub-groups of countries the latter share by 2004 averaged three times the former, or five times in the case of the CEE-8 countries that joined the EU in 2004. This suggests much lower labor productivity on farms than in other employment.

The share of farm and food products in total merchandise exports also has fallen, by as much as half in some ECA countries. When expressed as a ratio of that share for the world as a whole (an agricultural revealed comparative advantage index), most countries of the region are shown to have lost comparative advantage in farm products over the transition period. That index varies greatly across the region though, from a low of less than 0.5 for mineral-rich Russia and densely populated Slovenia to more than 3 for Latvia and the Kyrgyz Republic.

The region as a whole has become more open as a consequence of moving from plan to market, notwithstanding the continuation of numerous barriers to trade. A common indicator is the value of goods and services expressed as a percentage of GDP. For most

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countries of the region that percentage is now above the average for Western Europe (37 percent in 2004), with several countries approaching 60 percent by 2004.[2]

With this as background, we now turn to review briefly the evolution of policy under communism and then to examine how sectoral and trade policies have changed in the ECA region in response to, or as contributors to, the above macroeconomic and structural changes.

Quantifying the distortions to agricultural incentives

The main focus of the present study's methodology is on government-imposed distortions that create a gap between domestic prices and what they would be under free markets. Since it is not possible to understand the characteristics of agricultural development with a sectoral view alone, the project's methodology not only estimates the effects of direct agricultural policy measures (including distortions in the foreign exchange market), but it also generates estimates of distortions in non-agricultural sectors for comparative evaluation. Specifically, we compute Nominal Rates of Assistance (NRAs) for farmers including any input subsidies and non-product-specific forms of assistance or taxation. It also generates a production-weighted average NRA for nonagricultural tradables, for comparison with that for agricultural tradables via the calculation of a Relative Rate of Assistance (RRA – see Anderson et al. 2008). This approach is not well suited to analysis of policies of planned economies prior to their reform era, because prices then played only an accounting function and currency exchange rates were enormously distorted. During their reform era from 1992, however, the price comparison approach provides as valuable a set of indicators for them as for other market economies of distortions to incentives for farm production, consumption and trade, and of the income transfers associated with interventions.

While most of the focus is on agricultural producers, we also consider the extent to which consumers are taxed or subsidized. To do so, we calculate a Consumer Tax Equivalent (CTE) by comparing the price that consumers pay for their food and the international price of each food product at the border. Differences between the NRA and the CTE arise from distortions in the domestic economy that are caused by transfer policies and taxes/subsidies

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[2] This is a strong feature of Asia's economies in transition as well. For a comparison of the Asian and European transition experiences, see Swinnen and Rozelle (2006).

that cause the prices paid by consumers (adjusted to the farmgate level) to differ from those received by producers.

To obtain dollar values of farmer assistance and consumer taxation, we have taken the estimates of *NRA* and multiplied them by the gross value of production at undistorted prices to obtain an estimate in current US dollars of the direct gross subsidy equivalent of assistance to farmers (*GSE*). These *GSE* values are calculated in constant dollars, and are also expressed on per-farm-worker basis. They (and their equivalent on the consumption side) can be added up across products for a country, and across countries for any or all products, to get regional aggregate transfer estimates for the studied economies.

To keep the task manageable, the sample of countries for which empirical estimates are provided below is limited to the ten Central and Eastern European countries that joined the EU in 2004 or 2007 plus Turkey and the three biggest CIS economies (Russia, Ukraine and Kazakhstan).[3] However, non-quantitative policy assessments were also undertaken for the other economies of Central Asia. Reliable price data are available only from 1992 to 2005 or 2007 or, in the case of Kazakhstan, for just 2000-04.

The Communist era

Incentives for agricultural producers and food consumers were massively distorted under Communist central planning, which was imposed from the 1920s in the former Soviet Union (FSU) and from the 1950s in Central and Eastern Europe until the fall of the Berlin Wall in 1989 and the dismantling of the Soviet Union in 1991. The distortions resulted from a combination of collective farm property rights, centrally controlled organization of production allocation, processing, input provision and marketing, as well as the setting of prices unrelated to demand-supply conditions (leading to rationing), and state controlled trading and exchange rate systems. Land and farms were put under central planning and in most countries (with the exception of Poland and former Yugoslavia) farming was forcefully organized in collective and state farms. This collectivization process and the associated forced migration (and worse) of many landowners and farmers contributed to massive hunger and death before the Second World War in the Soviet Union. From Lenin to Stalin and

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[3] The only country from this region that was part of the Krueger, Schiff and Valdés (1991) study was Turkey, for the period 1961 to 1983. However, a follow-up study subsequently undertaken for a few economies in transition has been made available in a World Bank technical report (Valdés 2000).

through most of Khrushchev's regime, agriculture was heavily taxed, and capital was drained from an impoverished countryside to finance urban industrial growth (Ellman 1988).[4]

This all changed at the end of the Khruschev regime and especially under Brezhnev. The leadership of the USSR decided to increase agricultural production, with a strong emphasis on livestock, and this was a policy also followed by many of the Eastern European countries of the Soviet Bloc (Liefert and Swinnen 2002). From the mid-1950s onwards, and especially in the 1970s and 1980s, large amounts of support and investment were directed to agriculture. By 1980, almost 30 percent of total Soviet investment was going into agriculture (Gray 1990). At the same time, consumer prices were set low and producer prices high, with the gap covered by direct subsidies to processing and trading companies or by soft budget constraints. Consequently, from 1970 to 1990 livestock herds and output in these countries grew by between 40 and 60 percent. The rise in feed requirements for the growing herds stimulated the crop sector. In the late 1980s, the average annual output of feed grain in Poland and Hungary was up by half and one-quarter, respectively, compared with output in the late 1960s. In the USSR the feed requirements were so great that the country also became a substantial importer of feed commodities.

By 1990, per capita consumption of livestock products and foodstuffs in general compared favorably with many OECD countries, even though per capita incomes in Central and East Europe were much lower than the OECD average. This "achievement" came at a cost: large state subsidies, to both producers and consumers, were necessary to maintain the high levels of production and consumption. For example, by the end of the 1980s, direct budgetary subsidies to the agriculture and food economy were about 10 percent of GDP in the USSR and between 5 and 10 percent of GDP in most CEE countries. The bulk of these subsidies went to the livestock sector.[5]

Calculating the net transfers to farmers and to consumers under the Communist regime is very difficult because of the large number of distortions caused by the state regulations of prices, production and consumption, exchange rates, marketing organizations, the indirect nature of some of the subsidies, and so forth. While it is generally true that producers of farm products were strongly subsidized by price settings towards the end of the Communist regime (in sharp contrast to the 1930s when farmers were highly discriminated against), the complexity of the distortions led sometimes to offsetting effects. For example,

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[4] The dramatic implications – including millions of peasants dying of starvation – are documented in sobering detail in Conquest (1986).

[5] For an assessment of the support to farmers in the 1980s, see Cook, Liefert and Koopman (1991).

while agricultural producers in the latter 1980s were supported through high output prices and low input prices, at the same time overvalued exchange rates effectively taxed agricultural (and other) exporters. Correcting for this overvaluation leads to significantly lower protection indicators. As well, agriculture was not alone in being subsidized, as most (heavy) industry was also subsidized or at least protected from import competition. The available fragments of empirical evidence indicate that, on aggregate and in real terms, there was substantial net subsidization of agriculture relative to all other sectors as a group, although much more so for livestock producers than for grain and oilseed farmers. This might suggest food consumers were taxed substantially, but under the central planning system wholesalers were told to sell their food to retailers below their production costs, for which they received state subsidies. As well, with overvalued exchange rates effectively taxing exports and subsidizing imports, they too lowered domestic consumer prices of tradable products. However, by restricting foreign imports and regulating trade, the Communist regime prevented its consumers from accessing higher-quality food products. Kostova, Huffman and Johnson (2004) estimate that these welfare losses were equivalent to 50 percent to 75 percent of the direct subsidy benefits of consumers under the communist regime.

The reform era

After 1989, the CEE-8 countries moved first and most rapidly towards market-based systems. The reforms in the Balkan countries, such as Romania and Bulgaria, were initially half-hearted and involved many inconsistencies during most of the 1990s, with government interventions continuing to heavily distort incentives. In the large CIS countries (Russia, Kazakhstan and Ukraine), governments continued important controls of the agricultural economy through a variety of interventions such as regional trade controls, input supply controls, and the continuation of soft budget constraints. While the Kyrgyz Republic liberalized relatively quickly, the other Central Asian countries moved slower and some have undertaken far less reform and liberalization. In particular, major controls still remain in place in such countries as Uzbekistan and Turkmenistan.

International trade had been strongly regulated under the centrally planned system. The Communist countries were integrated in the Council of Mutual Economic Assistance (CMEA) system, which was a planned inter-country trading regime, trading mainly with other communist countries. (One could think of the CMEA as the international version of the domestic central planner.) The CEE countries were less integrated than the Soviet republics,

but still a large part of their trade volume went through the CMEA system. When the CMEA system collapsed in the early 1990s with the liberalization of the macro-economy and of trade policies, important changes in trade and financial flows resulted. Trade liberalization reinforced the reallocation of production activities caused by the abolishment of central planning. Traditional international production allocations were no longer possible when trade had to be financed by hard currencies and when inputs were accounted for at real costs. It also allowed the importation of high-quality Western produce which had earlier been restricted. At the same time, the liberalization of the exchange rates removed discrimination against the sectors producing tradables.

Trade liberalization led to a major international reorganization of production activities. Initially this had a very negative impact on the region's producers, as the traditional export markets dwindled due to a lack of hard currency and because Western countries remained closed to the region's agricultural exports. At the same time the reduction of import constraints opened regional markets to imports from the West. In combination, this caused a worsening of the region's agricultural trade balance in the first half of the 1990s. Later on, however, agri-food trade intensified and growing exports (also to Western markets) contributed to the region's recovery. An important development was the shift from centrally imposed extreme specialization (e.g., dairy production in the Baltics and cotton production in Central Asia) to more-diversified production systems and less dependence on single commodities in those countries.

Trade effects were only part of the international effects in the agri-food systems. Possibly even more important was the massive inflow of foreign direct investment to food processing industries, which contributed to a major restructuring and to improvements in food quality and productivity enhancements and investments in agriculture (Dries and Swinnen 2004). Most recently, the wave of foreign investments in the retail sector caused further restructurings of the agri-food system, with important implications for both producers and consumers (Dries, Reardon and Swinnen 2004).

The progress in market reforms is not always correlated with the extent of distortions. On the one hand Slovenia, which was a front runner in liberalization and developing a market economy, has a very high level of farm producer support that in 2004 was well above the average EU15 rate. On the other hand, much-slower reformers such as Bulgaria, Ukraine and Kazakhstan have much lower – even negative – NRAs. Turkey, which has not been under Communist rule but nonetheless had a highly state-controlled food system (including price regulations and state processing companies) especially prior to the 1990s, had one of the

higher level of support within ECA during 2004-05 despite the fact that there was a major policy reform after 2000, including a shift in assistance from market price support towards direct payments.

Nominal rates of assistance to agriculture during transition

When domestic markets, trade and currency exchange regimes were liberalized in the early 1990s, farm output declined dramatically, as a result of nominal input prices increasing much more strongly than output prices. Industrial output also declined, and by a similar order of magnitude, while the services sector – which had been severely constrained under the Communist system (at least as a stand-alone set of activities as distinct from being part of state-owned farm and industrial enterprises) – grew rapidly after transition began.

Beginning in the early 1990s, many trade and price distortions were removed throughout the region. Price, exchange rate and trade policies were all liberalized, subsidies were cut, hard budget constraints were introduced, property rights were privatized, and production decisions were shifted to companies and households. One consequence was that, on average, support to agriculture fell to very low levels in the early 1990s (as it did also for industrial production). Between 1992 and 1995, nominal assistance to agriculture averaged just 12 percent in the CEEC-10 and was below zero in Bulgaria and the three Baltic nations – as it was in Russia and Ukraine. By contrast, in Turkey, where nominal assistance averaged just 5 percent during 1986-89, its NRA rose to an average of 15 percent during 1992-95 and 25 percent in 1996-99 (Figure 1 and Table 2).

The changes in policies and hence in rates of agricultural assistance have not been smooth, but rather characterized by stop-go phases and sometimes even reversals of previous reforms, as is apparent from Figure 1. Despite that heterogeneity of experiences, one can identify a couple of general phases in the policy changes.

Following its initial collapse, support to agriculture increased during the mid-1990s in some of the region's countries. In the CEE this was driven by the explicit introduction of new support policies, while in Russia it reflected primarily exchange rate developments which, in the presence of institutional constraints which constrained the pass-through of border prices to farm-gate prices, pushed assistance rates up to high levels.

The increase in support started first in Central Europe where, after the radical liberalization in the early 1990s, political pressures induced governments to re-introduce a series of measures. The nominal rates of assistance increased from close to zero in 1992 to

around 20 to 30+ percent in the second half of the 1990s, but then they stabilized in the lead-up to EU accession in 2004. Between 2000 and 2003, the average rate of assistance to agriculture in the CEEC-10 was just under 25 percent (Figure 1), which is slightly less than half the rate of assistance (including from programs somewhat decoupled from production) provided to farmers in the EU-15 at that time (see Josling 2008).

Further East, two economic changes in the late 1990s had major impacts on agricultural incentives. First, the Russian crisis and the associated devaluation of the Ruble (and some other currencies in the region) in the presence of imperfect pass-through, caused a strong decline in the estimated rates of assistance to agriculture. This macro-economic correction brought estimated assistance rates down to much lower. Second, the hike in world energy and mineral prices, and general economic growth in the 2000s, improved many CIS governments' budgetary situations. The latter induced an increase in budgetary support to agriculture. For example, in Russia the government announced that agriculture would be one of the priority areas for more funding in 2005. Not all the additional funding is to go to subsidies, as some governments have plans to spend considerably on infrastructure and quality upgrading in agriculture. Also, rural incomes have improved because of better (and timely) payments of farm workers' wages and pensions to farm and rural workers, and because of improved rural services.

The combination of all these developments led to a somewhat lower weighted average NRA for agriculture in the region as a whole for the four-year period since 2000 than in the period immediately before: 16 percent during 2000-03 compared with 22 percent in 1996-99 (Table 2). In Russia the average support level fell even more (from 25 to 13 per cent). However, during 2004 and 2005 supports rose again, including in those countries that have since joined the EU (before they dropped again as international food prices rose in 2007). Meanwhile, the NRA moved closer to zero in Ukraine in 2005, but is probably still very negative in the rest of Central Asia. There is thus a very wide dispersion in average NRAs across countries in the region, from very high levels in the highest-income country (Slovenia) to negative leves still in the poorest countries of Bulgaria, Kazakhstan and Ukraine (Figure 2).

There are major differences in distortions across commodities too. In the 1980s virtually all commodities were supported, albeit some more than others. With transition the variation has remained, but in the CIS some commodities are now taxed (Table 3). For example, by 2000-03, sugar, poultry and milk were the most highly protected commodities in the CEEC-10 and grains, beef and pork were the least assisted. Meanwhile, in Russia and

Ukraine the range is even more extreme, from high positive assistance to livestock and sugar to high negative assistance to the production of the key feed inputs into livestock (coarse grains and oilseeds). It happens that sunflower seed is Russia's dominantly produced and traded oilseed and the only consistently exported commodity through the transition period. The case of Kazakhstan in 2004 was even starker, where import-competing producers were highly assisted while exporting industries had to endure negative assistance such that, even though the average NRA was close to zero, a strong anti-agricultural trade bias prevailed.

Government intervention and controls are especially important in a few key commodities within each country, often because of (real or imagined) food security concerns or the need to raise government revenue to meet other priorities. This is, for example, the case for grains and oilseeds in Ukraine, Bulgaria and Russia, both for human consumption and to support (via low feed input prices) the production of livestock products. It has been true also for cotton in Uzbekistan, Tajikistan and Turkmenistan, where heavy taxation is distorting incentives for producers – although open or porous borders make the taxing of cotton exports difficult while tax rates vary across countries in that sub-region.

The trade bias index reported in Table 4 is one way of capturing the diversity of assistance rates across farm commodities. The more negative is that index, the greater the gap between assistance to import-competing farm industries and assistance (or in some cases effective taxation) of export industries. Table 4 suggests that the anti-trade bias has been a persistent feature of agricultural policies in the region throughout the transition period – indeed it has been worse in recent years than it was a decade earlier.

An even more comprehensive way to measure the extent of variance of rates across time is to calculate the standard deviation of NRAs for the covered products. These too have remained persistently high and on average have been higher in recent years than in the early stages of transition (Table 5).

The total amount of support is an imperfect indicator of distortions to incentives, since different trade, price and subsidy instruments have different distortion effects. Most support to agriculture in the region was and, despite the reforms, still is provided via highly distortive and hence inefficient policy instruments. Under the Communist regime, output price distortions were complemented with heavy distortions in input prices, in particular low fertilizer and energy prices and subsidized irrigation, while in the 1990s the majority of farm support in the CEE countries was provided by output prices being kept above border prices (see near bottom of Table 3). However, the share of support from those measures has declined over the past decade, consistent with developments within the EU15. These policy

changes are reflected in the composition of the assistance that farms have received. Under the Communist system, price support and output subsidies were the main component in the CEECs, accounting for more than 80 percent of their NRA. After the reforms in the early 1990s, the share of market support and output subsidies declined substantially, falling below half. Since then it has grown again to around half of the NRA. The other important components of the NRAs of CEE countries and Turkey were input subsidies, direct payments and other non-product-specific subsidies, plus some decoupled payments in the most-recent years (Table 6).[6] In the CIS countries, those payments include soft loans and debt forgiveness which continue to play an important role. While fiscal constraints for most of the 1990s limited the government's ability to support farms by this means, the budgetary situation has changed in the 2000s as earnings from mineral and energy exports grew and this has become a more important source of government assistance to farmers.

The gross subsidy equivalent of the assistance to farmers, when expressed in constant (2000) dollar terms, shows Turkey to have been the largest supporter throughout the past 15 years. But Russia is rapidly catching Turkey, and Romania and Poland are the next biggest aggregate supporters. For the region as a whole, the supports are the equivalent of more than $24 billion per year, compared with just $3 billion in the early years of transition (Table 7(a)). When expressed on a per farmer basis, the range is huge. In 2000-03, for example, it ranged from negative amounts (-$300) in Ukraine and Kazakhstan to an average of $980 in the CEECs, $430 in Russia, more than $2200 in Hungary and Romania, and a huge $22,100 per farmer in high-income Slovenia (Table 7(b)). This compares with $8400 per farmer in the EU-15 in 2000-04 (Josling 2008). Slovenia's support has already come down significantly since its accession to the EU (average of just under $14.000 per farmer in 2005-07).. For the EU accedents per farmer assistance over the next few years is likely to move closer to the EU average.

Since most of the support for farmers came through price-support measures, most notably import restrictions, these have the effect of raising consumer prices by a similar degree when calculated at the farmgate. That means that prior to the mid-1990s, policies in all but Turkey and Slovenia imposed the equivalent of low or negative taxes on food consumers (CTEs), but thereafter the CTEs have become positive. The region's weighted average CTE in 2000-03 was 17 percent (Table 8), compared with nearly twice that in the

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[6] Water price regulations and subsidies are important policy instruments in the irrigated regions of Central Asia, but it was not possible in this study to estimate their impact on NRAs. Energy policies are still used to assist various sectors, for example in Russia, but since they do not favor agriculture in particular, and are becoming less important, they too have been omitted from our NRA estimates.

EU-15. The high CTEs in Romania and Slovenia have been well above that EU average this decade and so presumably will fall during those countries' transition to the EU's Common Agricultural Policy, especially given the EU's policy re-instrumentation towards more direct farm income supports that do not raise consumer prices of food.

Assistance to agriculture relative to other tradable sectors

The region's import tariffs on primary agricultural commodities are on average twice as high as average tariffs in industry, but only half as high as tariffs on processed food. This is true both for the CEECs and for CIS countries. It suggests that while the region's farmers receive more tariff protection from competition abroad than do non-agricultural producers, food processors may be effectively protected despite having to pay above world prices for primary farm products.

The import-competing producers are only part of each sector, however. When account also is taken of support for producers of exports in each sector, an overall NRA for all non-agricultural tradable industries can be used, together with the average NRA for agricultural tradable industries, to calculate the relative rate of assistance (RRA). In so far as the NRAs for non-farm industries are positive, the RRA is lower than the NRA for agriculture. But in most cases the nonagricultural NRA is very low. Thus the overall NRA for tradable primary agriculture in the region during 2000-03 is estimated to have averaged more than three times higher than for producers of non-agricultural tradables (15 as compared with 5 percent), so the RRA averaged 10 percent. Only in three countries – Bulgaria, Kazakhstan and Ukraine – has agricultural production assisted less than nonagricultural tradables (RRA<0) during the present decade. And in virtually all countries for which there is a time series, the RRA is higher at the end of our sample period than in the first few years of transition (Figure 3).

Forces Behind Transitional Policy Choices

Several political economy stylized facts that are widely observed in market economies – for reasons explained in, for example, Anderson and Hayami (1986), Anderson (1995), Swinnen (1994) and de Gorter and Swinnen (2002) – are also found in Europe's transition economies.

Specifically, for this region as elsewhere, farmer assistance tends to be higher in higher-income countries, and in countries with weaker comparative advantage in agriculture. Hence it is likely that similar political-economic interactions and mechanisms are at work in this region as in other parts of the world. However, those correlations are becoming weaker over time among the CEECs. Taking on the EU's Common Agricultural Policy is part of the explanation, but there are also other forces, both domestic and international, that underlay the political economy of agricultural policies in the CEE and CIS countries. Several key ones are discussed in the following sub-sections.

Causes of rent extraction

Traditionally, heavy negative government intervention in the form of depressed incentives tends to be concentrated on commodities that have the potential to provide export tax revenue for the government. This is especially the case in the cotton sectors of Uzbekistan, Turkmenistan and Tajikistan. There, as in a number of African countries (see Anderson and Masters 2009), the government controls the cotton chain so as to extract rents, thereby depressing farmers' prices and production incentives. There is a clear division in Central Asia between the roughly neutral policy towards cotton in Kazakhstan and the Kyrgyz Republic (where cotton exports used to be a relatively modest share of exports) on the one hand, and on the other the extensive taxation and extraction of rents from cotton in Turkmenistan, Uzbekistan, and Tajikistan (countries where cotton traditionally was a very important export tax resource).[7] In Turkmenistan and Uzbekistan governments use state monopoly powers over marketing to transfer substantial resources out of agriculture. Most of the transfers in Uzbekistan appear to go to general government revenue, whereas in Turkmenistan much is wasted (e.g., in inefficient cotton mills with negative value added) or accrues to secret accounts under the President's personal control. Moreover, recently some potentially important reforms have been introduced in Uzbekistan to reduce some of the distortions to farm incentives, while almost none have taken place in Turkmenistan. In Tajikistan the rent distribution is more opaque, but equally detrimental to farms, as a coalition between the government and a monopolistic private trading company has caused depressed prices and incentives for farmers. Not surprisingly, cotton farmers have responded sharply to these

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[7] Price and trade data were not sufficiently reliable to allow NRA calculations, but Pomfret (2007a,b) and Christensen and Pomfret (2007) provide considerable informal information supporting the claims above.

incentive distortions, both in area and output: with rapid growth in Kazakhstan and the Kyrgyz Republic, and with declines or stagnation in the other countries.

The grain (and oilseed) export sectors of Ukraine, Bulgaria, and the grain-surplus regions of Russia are similarly characterized by heavy government regulation and interventions. In traditional grain-exporting countries such as Ukraine and Bulgaria, the grain sector has disproportionate political significance – for historic and psychological reasons. For example, in the mid-1990s in Bulgaria, ministers of agriculture had to resign regularly following reports of grain shortfalls or unregulated exports threatening the local grain supply. In Ukraine, ad hoc grain market interventions continued in recent years.

Opportunities for rent seeking from distorted policies inhibit policy reform, as the few who benefit disproportionately from the existing distortions lobby strongly for their continuation. This applies to various policies, such as cotton regulations in Central Asia, grain trade regulations in Bulgaria, Ukraine, and Russia, and water policies in Central Asia. But it also applies to several policies in countries in which benefits go a specific group of farms. For example, the continuation of soft budget constraints in the large CIS countries, and the failure of governments to enforce bankruptcies and enforce strong land rights all disproportionately benefit large farming companies, while smaller family farms are often hurt by these policies. In Turkey, agricultural para-statal companies and marketing cooperatives benefit from "farm support" and are major lobbyists in favor of market regulations and assistance packages.

Sometimes specific political, regional, or ethnic coalitions play a role. For example, in Kazakhstan many residents of the rich northern grain regions were Russian and German. After independence, power shifted to Kazakh nationals, limiting the Russian and German groups' influence in government and causing many to emigrate. Another recent example is Bulgaria, where the resistance of the government to privatize the tobacco processing companies and its decision to allocate a disproportionate amount of subsidies to tobacco growers is due to the fact that the Turkish minority in Bulgaria is strongly active in the tobacco sector, and held key positions in the Ministry of Agriculture.

Causes of increases in support during transition

The increases in agricultural support in the CEECs in the second half of the 1990s and more recently in the CIS are the result of the interaction of domestic political forces with international events. The increase in farmer assistance in CEE countries was likely caused by

the 'normal' domestic internal pressures that are brought to bear in a contestable political environment which result in rises in agricultural protectionism as per capita income increases and as agricultural comparative advantage declines. In this period it was a case of reversing somewhat the overshooting in reform during the first few years of transition.

Overlaying that is the EU accession process, which encouraged CEE governments to target the levels of support expected in the EU by the end of the phase-in period of accession, so as to maximize the transfer of benefits from Brussels. However, it appears that in the years before accession the EU accession process had more impact on the introduction of new support instruments than on the overall level of support, probably because all the cost of that support had to be borne within the national economy prior to EU accession (Swinnen 2002).

Another contributing factor was the improvements in the government's budgetary situation, which allowed more subsidies to be given to farmers than was possible in the early years of transition. This factor has played a role throughout the ECA region, but in particular in Russia and some of its neighbors where recovery from the post-1998 fiscal crisis has been aided by windfall gains from the dramatic rise in the prices of their exports of energy raw materials. This factor was stronger in those countries where governments have more access to mineral resources, such as in Russia (oil and gas), Kazakhstan (oil), Turkmenistan (gas).

Crises and political change

General political and economic crises have played an important role in inducing changes in agricultural distortions. The most obvious example is the fall of the Communist regime and the disintegration of the Soviet Union – and of the central directives coming from Moscow. However, even later there are several examples where more general crises have triggered changes. Most often the policy reforms came only after new elections induced a change in government, reflecting changed electoral preferences.

For example, in Romania and Bulgaria, important progress in the removal of distortions and market reforms only occurred in the late 1990s after electoral change brought reform-minded governments to power. In Bulgaria that was caused by the financial crises in 1996. Important reform progress was made in Ukraine in the years after the 1999 election in which the large farm lobby fell out with President Kuchma, who consequently introduced a series of important reforms which the farms had successfully opposed previously.

However, democratic political change is not a sufficient condition in itself for better agricultural policies. For example, in both Ukraine and the Kyrgyz Republic, their political

changes (the "Orange Revolution" and the "Tulip Revolution", respectively) have not contributed to better agricultural policy. In fact the Ukraine government seems to have reversed, while in the Kyrgyz Republic change has mostly resulted in more instability, while relatively little distortions remain in agriculture.

Impact of international agreements

EU accession, both prospective and then actual, has had obvious and profound influences on policy choices. The CEE countries that joined in May 2004 and January 2007 have raised domestic agricultural and food prices up towards EU-15 levels (on average, since for some prices came down). An important part of the EU farm subsidies are now under the form of direct payments. CEE farms receive considerably less of these subsidies than those received by EU-15 farmers, but they will gradually increase to reach EU-15 levels by 2010. Another important difference is that these subsidies in the EU-15 will be given on a per farm basis (single farm payments) earlier than will be the case for the CEECs.

The CEE countries have been induced also to undertake major regulatory improvements to stimulate their markets, including private investments in the food chain and public rural infrastructure investments. Their trade policies have likewise changed so as to allow free access for all products from other EU-27 member countries and, in most cases, also freer access for non-agricultural products from non-EU countries (the latter because the common external tariff typically was lower than that previously applying in acceding countries).

The EU accession process has not caused a major increase in food prices in the CEE countries. One reason is the increased competition on consumer markets in the CEECs with the full opening of agri-food markets to imports, and with the massive inflow of foreign direct investment in the retail sector.

The impacts of other international agreements (including WTO accessions) have varied. The Czech Republic, Slovakia, Hungary, Poland, Romania, Slovenia and Turkey have been members of the World Trade Organization (WTO) since its creation in 1995. Bulgaria, Estonia, Lithuania, Latvia, Kyrgyz, Armenia, Georgia, Albania and Ukraine joined the WTO later, while Russia and Kazakhstan are still negoting their WTO accession.

WTO accession has not strongly disciplined ECA countries that were founding members in 1995 (Bacchetta and Drabek 2002). For those that had to negotiate their entry in the latter 1990s, the constraints on introducing or maintaining distortions are more serious.

And for those large ECA countries still in the process of negotiating their accession, notably Russia and Kazakhstan, the WTO membership has been even tougher in their demands. Whether that latter stance will prove an agricultural trade-liberalizing force remains to be seen, but at least it will provide a ceiling on the extent to which agricultural protection and subsidies may be raised in the future.

For the CEECs, the most important WTO impact has been indirect: in anticipation of eastward enlargement, the EU was forced to introduce major changes to its Common Agricultural Policy, which in turn has affected post-accession agricultural distortions in the CEECs.

A further and somewhat erratic influence has been the regional trading arrangements among the ECA countries. These include the Eurasian Economic Community (EAEC), the Central European Free Trade Area (CEFTA), and the Baltic Free Trade Area (BFTA). However, the impact of these agreements on reducing agricultural policy distortions has generally been limited since the agreements include many exceptions for agricultural and food products, and especially for so-called "sensitive products" which make up a substantial share of production. Moreover, Central Asian countries such as Kazakhstan and the Kyrgyz Republic have been reluctant to join the EAEC, because it would impose Russia's trade and customs preferences on them.

Influence of international institutions

The role of other international institutions was very important at the start of transition, as it provided policy reform guidance in all these countries. However, in more recent years this advice has been less effective. For those joining the EU, policy advice from Brussels was perceived as more relevant. This is especially, but not only, the case for the EU accession countries. Also for those countries aspiring to join the EU (such as most of the Balkan countries and Ukraine), or those seeing the accession countries as models for their own development strategies, policy advice from Brussels is taken seriously. Another reason is that in many of the countries of southeast Europe and the CIS, their improved fiscal and macroeconomic situations have made them less beholden to those international financial institutions requiring reforms as a condition of providing loans or financial assistance.

Prospects for reducing distortions further

Clearly there have been major reductions in distortions to agricultural incentives in the region over the past two decades, and in many of the countries average protection levels are now relatively low. However, there is still substantial room for further reduction of distortions to agricultural incentives. This could be done through various means: overall reductions in support, shifting support to less-distortive policy instruments, and focusing budgetary expenditures on public good investments (in infrastructure and institutions to reduce trade costs) rather than on farm subsidies, shifting from a quantity-based to a quality-based policy paradigm, and so forth.

In terms of further reductions in policy distortions, some of the most distortive cases concern taxation of agriculture, most notably the control and rent extraction in the cotton sectors in some Central Asian countries. Removing those distortions would allow a substantial improvement in incentives to domestic producers. Some progress has been made in recent years, but much more can be done.

Those countries for which EU accession is unlikely to happen even in the medium future (such as for Turkey, Ukraine and several of the Balkan countries) should focus their policy attention in the near term on efficiency improvements in both their policies and their agricultural economies. This is consistent with the objective of EU accession, since the EU itself has moved in recent years to more decoupled farm support and is demanding that member countries move in that direction and improve the efficiency of their farms and food companies.[8]

The same policy framework should be promoted in countries further east, which include those that are likely to spend more funds on agriculture in the coming years as their fiscal situation further improves. Increased funding should be focused on upgrading infrastructure, on quality and efficiency of the agri-food system, and on the introduction or improvements of a variety of institutions necessary to support rural markets. In several of the poorer and the larger CIS countries, institutional and infrastructure problems, as well as corruption, remain major constraints to trade and thereby distort farm incentives.

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[8] From this perspective, it is important to point to the importance of other reforms, such as macroeconomic and regulatory reforms to stimulate food industry investment, labor market reforms to enhance off-farm employment opportunities, and credit reforms to stimulate access to rural credit.

Competition and anti-trust policy is an important related area for policy attention. In supply chains where farms have to sell their products to trading, processing, and retailing companies, the ability to choose freely between companies is of crucial importance in getting better conditions for farms. This applies across the region where monopoly buyers (state-owned or private) push down prices and contract conditions, although the source of anti-competitive behavior and policy details are likely to differ, e.g. between the increasing dominance of large retail chains in Central Europe versus some of the government controlled cotton chains in Central Asia.

Despite constraining political economy forces, there are prospects for further reducing distortions to agricultural incentives in the foreseeable future. The accession of the CEE countries to the EU has increased their levels of farm assistance, although they now face more competition within the enlarged EU. While reducing CEE farm assistance in the future will not happen without reductions in EU protection levels, some reforms are currently underway in the EU (e.g., the cut in EU sugar price support and the shift from per hectare payments to single farm payments). However, the slow and intermittent progress in the WTO's Doha trade negotiations reduces the pressure for further reforms. Meanwhile, in the mineral- and energy-rich CIS countries, the rise in export earnings reduces budgetary constraints on governments inclined to give assistance to farmers as national incomes grow. And CIS regional trade policies that affect markets are largely ad hoc and nontransparent, and are important distortions. However, eliminating these policy interventions would require fundamental reforms of Russia's political system, including a transformation of attitudes and behaviors involving governance that Russian accession to the WTO is unlikely to alter in the medium term.

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Figure 1: Nominal rates of assistance to agriculture, Eastern European countries, 1992 to 2007
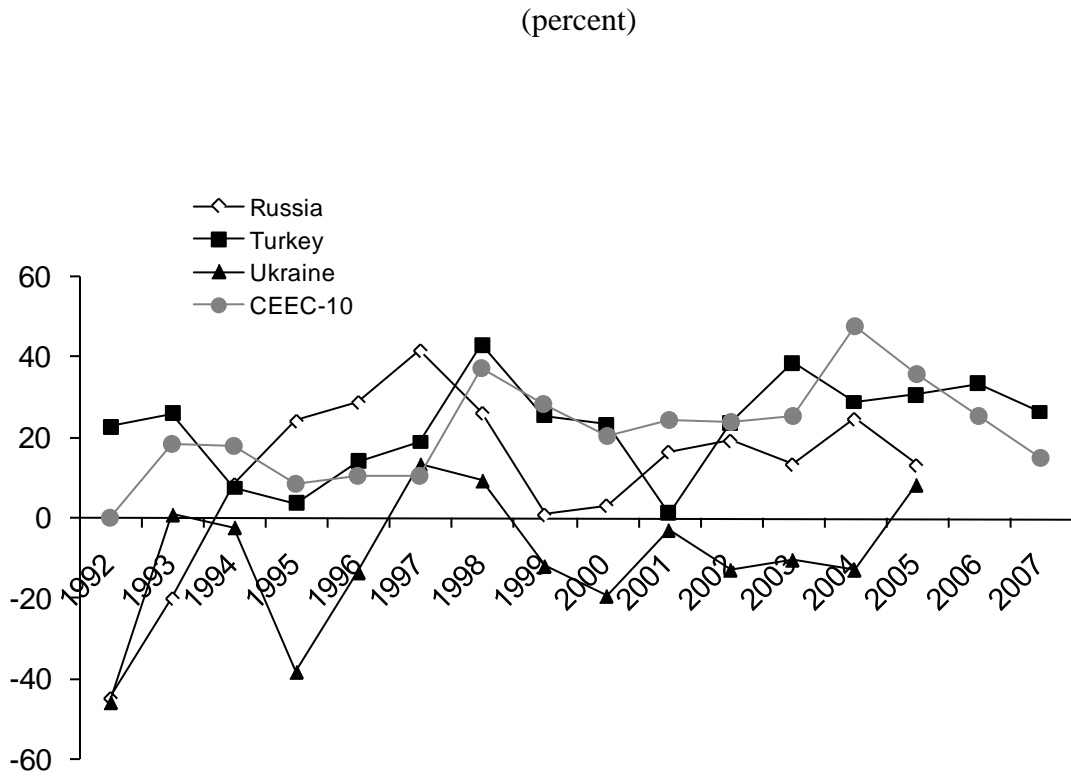
(percent)

Source: Anderson and Valenzuela (2008), updated from estimates reported in Anderson and Swinnen (2008).

Figure 2: Nominal rates of assistance to agriculture, individual Eastern European focus countries, 2000-03
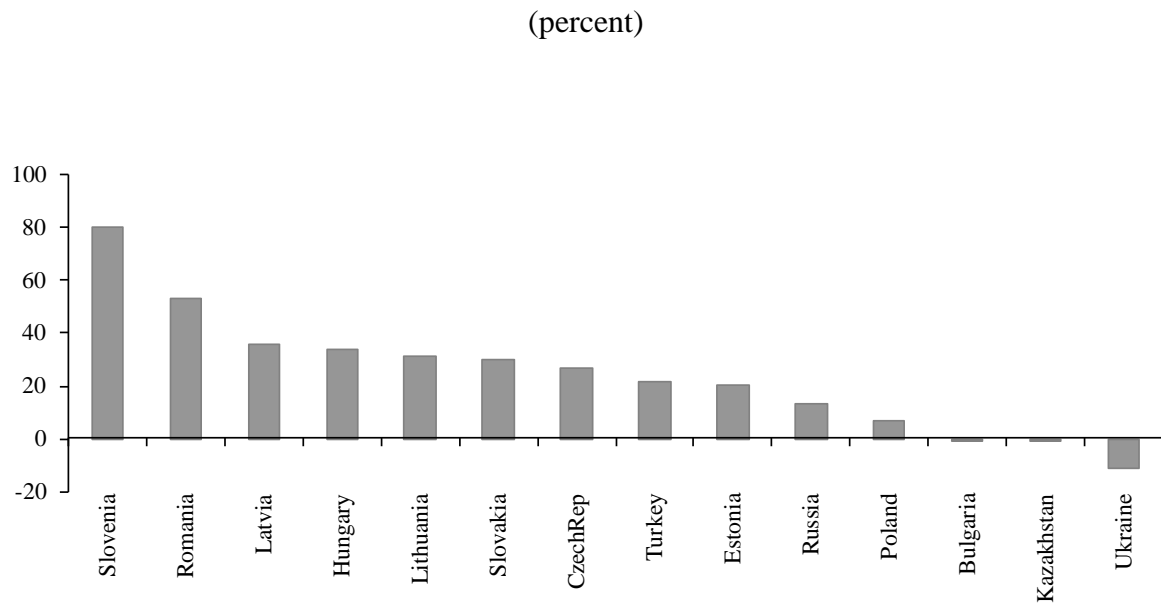
(percent)

Source: Anderson and Valenzuela (2008), updated from estimates reported in Anderson and Swinnen (2008).

Figure 3: Relative rates of assistance to agriculture,[a] Eastern European focus countries, 1992-95 and 2000-03
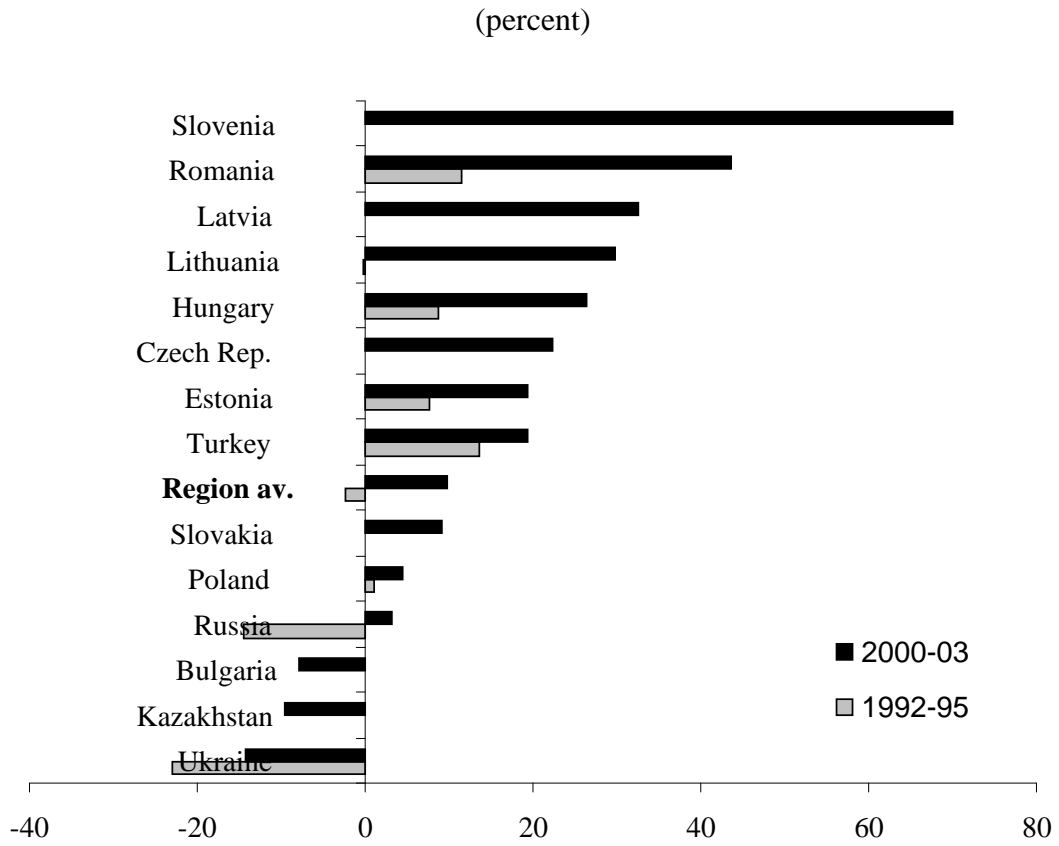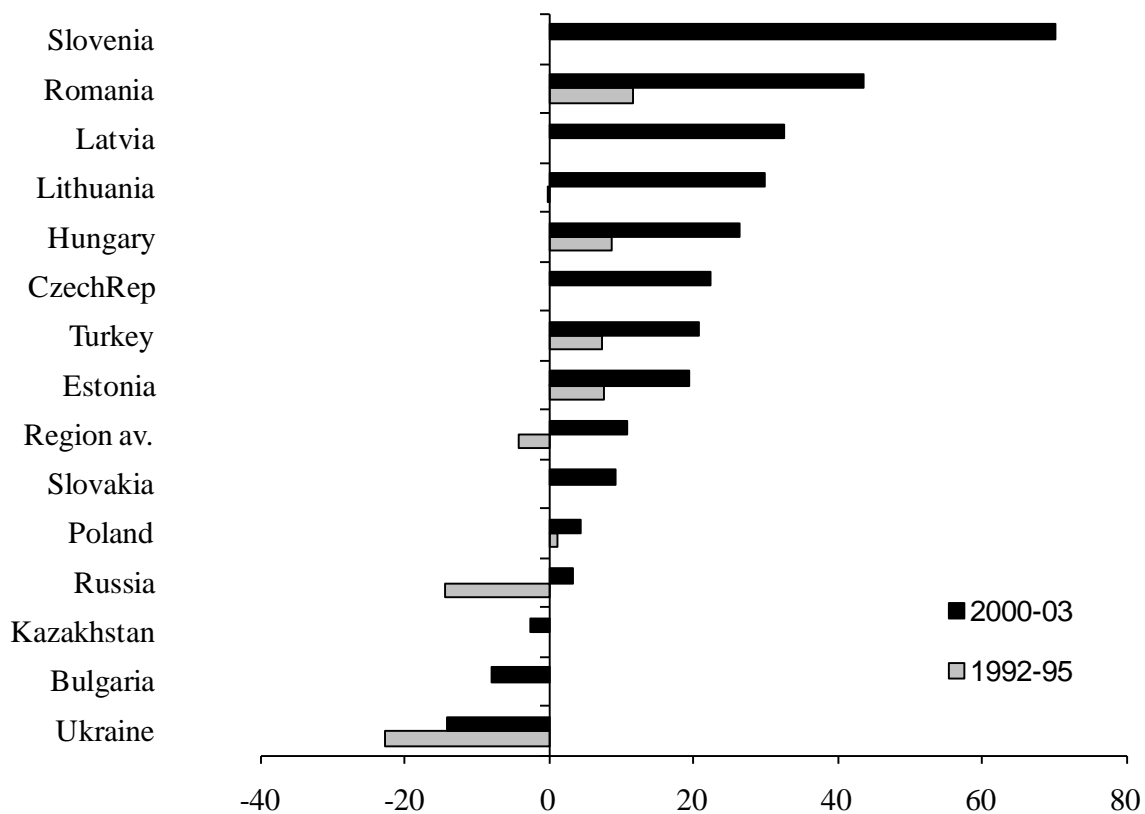
(percent)

Source: Anderson and Valenzuela (2008), updated from estimates reported in Anderson and Swinnen (2008).

a. The RRA is defined as $100*[(100+NRAag^t)/(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural sectors, respectively. No estimates are available for including after Kazakhstan, Russia and Ukraine after 2005.

Table 1: Key economic and trade indicators, Eastern European and CIS countries,[e] 2000-04

	Share (%) of world:			National rel. to world (=100)			TSI[b]	Poverty[c]	Gini[d]
	Pop'n	Total GDP	Agric GDP	GDP per capita	Agric land per capita	RCA ag & food[a]			
Slovenia	0.03	0.07	0.04	216	32	52	-0.68	0	na
Czech Rep.	0.16	0.22	0.19	135	52	61	-0.44	0	26
Hungary	0.16	0.20	0.14	122	72	90	0.40	0	27
Estonia	0.02	0.02	0.03	102	78	199	-0.38	1	36
Poland	0.62	0.57	0.47	93	57	105	-0.39	0	34
Slovak Rep.	0.09	0.07	0.09	92	57	57	-0.50	0	na
Lithuania	0.06	0.04	0.08	80	125	176	-0.21	1	36
Latvia	0.04	0.03	0.03	76	132	364	-0.51	0	38
Turkey	1.12	0.62	1.97	55	70	131	0.09	3	44
Romania	0.35	0.15	0.49	41	84	74	-0.06	1	31
Bulgaria	0.13	0.05	0.15	39	86	143	0.37	0	29
CEE sample	**2.75**	**2.05**	**3.67**	**74**	**70**	**98**	**-0.09**	**1**	**37**
Russia	2.34	1.10	1.58	47	186	53	-0.46	0	40
Kazakhstan	0.24	0.08	0.18	33	1737	76	na	1	34
Ukraine	0.78	0.13	0.46	17	107	112	na	0	28
Turkmenistan	0.07	0.01	0.06	18	881	92	na	5	41
Uzbekistan	0.41	0.03	0.27	8	134	na	na	0	37
Kyrgyz Rep.	0.08	0.00	0.05	6	268	390	na	0	30
Tajikistan	0.10	0.00	0.03	4	85	192	na	7	33
CIS sample	**4.02**	**1.37**	**2.62**	**34**	**270**	**na**	**0.02**	**0**	**37**
Other CEE/CA	0.64	0.19	0.61	29	82	166	0.41	1	na
All CEE/CA	**7.43**	**3.60**	**6.90**	**48**	**179**	**na**	**-0.06**	**0**	**37**

Source: Sandri, Valenzuela and Anderson (2008), compiled from World Bank (2007).
a. Revealed Comparative Advantage = share of agriculture and processed food in national exports as a ratio of that sector's share of global exports
b. Primary Agric Trade Specialization Index = (X-M)/(X+M), 2000-02 (world av =0).
c. Percentage of population living on <US$1/day, from Chen and Ravallion (2007).
d. Gini Indices for the most recent year during 2000-04 , from Chen and Ravallion (2007).
e. CEE=Central and Eastern Europe, CIS=Comm'th of Independent States, CA=Central Asia

Table 2: Nominal rates of assistance to agriculture,[a] Eastern European and CIS focus countries, 1992 to 2007

(percent)

	1992-95	1996-99	2000-03	2004-07[d]
Bulgaria	-19	-11	0	7
Czech Rep	20	19	27	24
Estonia	-14	20	20	23
Hungary	19	18	34	20
Latvia	-15	30	36	28
Lithuania	-19	29	32	29
Poland	10	24	7	32
Romania	22	29	53	50
Slovakia	28	26	30	21
Slovenia	64	79	80	31
CEEC-10	**12**	**22**	**24**	**31**
Turkey	15	25	22	30
Russia	-8	25	13	19
Ukraine	-21	-1	-11	-2
Kazakhstan	na	na	0	-5
All focus countries:				
Unweighted average[b]	6	24	25	22
Wted average[a]	3	22	16	25
Dispersion[c]	26	21	26	14

Source: Anderson and Valenzuela (2008) updated from estimates reported in Anderson and Swinnen (2008).
a. Weighted average for each country, including product-specific output and input distortions and non-product-specific assistance as well as authors' guesstimates for non-covered farm products, with weights based on gross value of agricultural production at undistorted prices.
b. The unweighted average is the simple average across the 14 countries of their national NRA (production-weighted) average NRAs.
c. Dispersion is a simple 4-year average of the annual standard deviation around a weighted mean of the national agricultural sector NRAs.

d. Final column refers just to 2004-05 for Russia and Ukraine and 2004 for Kazakhstan; and the CEEC values assume the NRA for each product is the same as for the EU-25 in 2004-06 and for EU-27 in 2007, such that the differences across CEE countries is due to differing national product weights.

Table 3: Nominal rates of assistance, key covered farm products,[a] Eastern European and CIS focus countries, 1992 to 2005

(percent)

	1992-95	1996-99	2000-03	2004-07
Wheat	-6	13	2	9
Barley	1	16	-5	6
Oats	-11	7	-27	-4
Rye	0	14	-10	-2
Maize	16	3	16	21
Rapeseed	-8	-18	1	0
Sunflower	-13	-13	-13	4
Soybean	45	0	9	-4
Cotton	-45	-47	-31	-29
Sugar	23	80	73	91
Potato	25	25	60	57
Beef	-16	20	36	53
Sheepmeat	10	10	3	15
Pigmeat	-8	16	12	32
Poultry	26	43	52	75
Egg	16	48	2	25
Milk	6	43	25	26
All covered products	**-2**	**19**	**13**	**22**
Domestic market support	1	1	1	2
Border market support	-4	15	11	19
Dispersion of product NRAs	21	29	29	31
Product coverage[b]	62	63	61	62

Source: Anderson and Valenzuela (2008) updated from estimates reported in Anderson and Swinnen (2008).
[a] Region's weighted average for each product and for All covered products, with weights based on gross value of agricultural production at undistorted prices.
[b] Dispersion is the standard deviation shown is the simple 4-year average of the annual standard deviation around the weighted mean.

Table 4: Trade bias index,[a] Eastern European and CIS focus countries, 1992 to 2007

(percent)

	1992-95	1996-99	2000-03	2004-07[b]
Bulgaria	-0.02	-0.17	-0.18	-0.30
Czech Rep	0.05	-0.10	-0.23	-0.16
Estonia	-0.21	-0.16	-0.01	0.24
Hungary	-0.14	0.12	-0.11	0.05
Latvia	-0.35	-0.18	0.15	-0.22
Lithuania	-0.50	-0.32	-0.19	0.07
Poland	-0.19	-0.19	-0.24	0.26
Romania	-0.19	-0.28	-0.40	-0.23
Slovakia	0.03	-0.09	-0.05	0.06
Slovenia	0.26	0.40	0.38	0.18
CEEC-10	**-0.15**	**-0.16**	**-0.23**	**0.02**
Turkey	-0.32	-0.46	-0.32	-0.19
Russia	-0.11	-0.31	-0.34	-0.24
Ukraine	-0.12	-0.25	-0.21	-0.42
Kazakhstan	na	na	0.01	-0.32
All focus countries	**-0.15**	**-0.16**	**-0.23**	**0.02**

Source: Anderson and Valenzuela (2008) updated from estimates reported in Anderson and Swinnen (2008).

[a] The trade bias index, TBI, defined as:

$$TBI = [(1+NRAag_x/100)/(1+NRAag_m/100) - 1]$$

where $NRAag_m$ and $NRAag_x$ are the average percentage NRAs for the import-competing and exportable parts of the agricultural sector.

[b] Final column refers just to 2004-05 for Russia and Ukraine and 2004 for Kazakhstan.

Table 5: Dispersion of nominal rates of assistance across covered agricultural products,[a] Eastern European and CIS focus countries, 1992 to 2007

(percent)

	1992-95	1996-99	2000-03	2004-07[c]
Bulgaria	18	21	25	48
Czech Rep	27	28	23	53
Estonia	24	28	20	45
Hungary	34	41	62	49
Latvia	42	40	44	58
Lithuania	47	47	53	54
Poland	31	28	27	53
Romania	48	52	59	69
Slovakia	25	27	25	49
Slovenia	50	42	39	57
CEEC-10	**35**	**35**	**38**	**54**
Turkey	62	65	53	69
Russia	37	33	40	40
Ukraine	66	48	37	32
				39
Kazakhstan	na	na	28	
				45
All focus countries[b]	**39**	**38**	**38**	

Source: Anderson and Valenzuela (2008) updated from estimates reported in Anderson and Swinnen (2008).
a. Dispersion for each country is a simple 4-year average of the annual standard deviation around a weighted mean of NRAs across covered products.
b. Unweighted average, that is, the simple average across the 14 countries of their 4-year simple average dispersion measures.
c. Final column refers just to 2004-05 for Russia and Ukraine and 2004 for Kazakhstan.

Table 6: Components to nominal rates of assistance to agriculture, Eastern Europe and CIS, 1961 to 2007
(percent)

(a) CEE-10

	1992-94	1995-99	2000-04	2005-07
Covered products	10.4	16.4	25.5	17.7
Non-covered products	10.6	17.3	26.9	24.7
All agriculture (excl NPS)	10.5	16.7	26.1	21.3
All importables	19.1	32.1	45.2	31.7
All exportables	2.4	7.0	10.9	12.0
Non-product-specific (NPS)	1.9	2.5	2.5	4.4
All agriculture (incl NPS)	12.4	19.2	28.6	25.7
Decoupled payments	0.6	0.8	2.9	12.1
All agriculture (incl NPS & decoup.)	13.0	20.1	31.5	37.8
All agric tradables (incl NPS)	12.9	19.5	26.4	15.9
All non-agricultural tradables	5.7	4.9	4.4	4.6
RRA	6.7	14.1	21.1	10.7

Table 6 (continued): Components to nominal rates of assistance to agriculture, and RRAs, Eastern Europe and CIS, 1961 to 2007

(percent)

(b) Russia and Ukraine

	1992-94	1995-99	2000-04	2005
Covered products	-23.7	8.6	4.2	11.0
Non-covered products	-23.9	11.3	6.2	14.1
All agriculture (excl NPS)	-23.7	9.4	4.9	12.0
All importables	-25.4	20.3	24.7	22.9
All exportables	-21.5	-13.4	-15.3	-2.0
Non-product-specific (NPS)	6.3	4.8	2.7	0.0
All agriculture (incl NPS)	-17.4	14.2	7.5	12.0
Decoupled payments	2.6	0.6	0.0	0.0
All agriculture (incl NPS & decoup.)	-14.8	14.8	7.6	12.0
All agric tradables (incl NPS)	-17.4	14.2	5.9	6.3
All non-agricultural tradables	4.9	9.0	8.1	7.3
RRA	-21.5	4.8	-2.0	-0.9

Table 6 (continued): Components to nominal rates of assistance to agriculture, Eastern Europe and CIS, 1961 to 2007

(percent)

(c) Turkey

	1961-64	1965-69	1970-74	1975-79	1980-84	1985-89	1990-94	1995-99	2000-04	2005-07
Covered products	-18.8	-17.7	-6.9	-8.1	-29.5	4.0	19.7	21.2	20.0	29.4
Non-covered products	-18.8	-17.7	-6.9	-8.1	-29.5	4.0	19.7	21.2	20.0	27.8
All agriculture (excl NPS)	-18.8	-17.7	-6.9	-8.1	-29.5	4.0	19.7	21.2	20.0	28.8
All importables	-10.8	-9.6	5.8	19.7	-19.6	28.5	60.2	80.5	54.0	45.0
All exportables	-29.9	-28.4	-18.0	-23.3	-35.5	-8.1	2.5	-1.9	3.5	21.9
Non-product-specific (NPS)	-0.1	-0.3	1.9	0.6	0.3	0.0	0.0	0.0	3.3	1.5
All agriculture (incl NPS)	-18.9	-17.9	-5.0	-7.5	-29.2	4.0	19.7	21.2	23.2	30.3
Decoupled payments	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	3.7	2.9
All agriculture (incl NPS & decoup)	-18.9	-17.9	-5.0	-7.5	-29.1	4.1	19.7	21.2	26.9	33.2
All agric tradables (incl NPS)	-18.9	-17.9	-5.0	-7.5	-29.2	4.0	19.7	21.2	20.4	23.5
All non-agricultural tradables	60.5	140.8	49.6	55.7	32.8	20.5	10.0	2.3	0.9	0.5
RRA	-46.5	-64.0	-35.9	-35.6	-46.6	-13.6	8.8	18.6	19.3	23.0

Source: Anderson and Valenzuela (2008) updated from estimates reported in Anderson and Swinnen (2008).

Table 7: Gross subsidy equivalents of assistance to farmers, total and per farm worker, Eastern European and CIS focus countries,[a] 1992 to 2007

(a) Total (constant 2000 US$ million per year)

	1992-95	1996-99	2000-03	2004-07[b]
Bulgaria	-671	-381	-17	197
Czech Rep	784	632	711	689
Estonia	-73	82	74	90
Hungary	856	768	1205	920
Latvia	-208	167	195	179
Lithuania	-332	414	395	361
Poland	1378	3106	857	4314
Romania	1921	2064	3332	4073
Slovakia	421	338	309	301
Slovenia	431	483	381	143
CEEC-10	**4509**	**7674**	**7441**	11265
Turkey	4671	8033	6070	10525
Russia	-1486	7394	3394	3100
Ukraine	-4461	-70	-1157	-182
Kazakhstan	na	na	-34	69
All focus countries	3234	23032	15715	24778

Table 7 (continued): Gross subsidy equivalents of assistance to farmers, total and per farm worker, Eastern European and CIS focus countries,[a] 1992 to 2007

(b) Per person engaged in agriculture[c] (constant 2000 US$ per year)

	1992-95	1996-99	2000-03	2004-07
Bulgaria	-1429	-1075	-65	1010
Czech Rep	1423	1255	1581	1762
Estonia	-678	898	931	1267
Hungary	1335	1372	2494	2253
Latvia	-1038	993	1333	1393
Lithuania	-1113	1693	1932	2123
Poland	283	683	204	1118
Romania	879	1135	2202	3311
Slovakia	1393	1199	1197	1281
Slovenia	10781	18225	22105	14254
CEEC-10	**466**	**893**	**977**	1682
Turkey	344	566	414	702
Russia	-152	842	431	439
Ukraine	-956	-17	-333	-60
Kazakhstan	na	na	-27	59
All focus countries	86	647	451	752

Source: Anderson and Valenzuela (2008), based on NRA estimates updated from Anderson and Swinnen (2008) and data on the number of farmers from FAOSTAT.
[a] Gross subsidy equivalents including assistance to nontradables and non-product-specific assistance. The number of farmers in these countries is difficult to get on a consistent basis. The FAOSTAT numbers may be subject to error. For example, Slovenia's may be understated in FAOSTAT, in which case its GSE per farmer is overestimated.
[b] Final period refers just to 2004-05 for Russia and Ukraine and 2004 for Kazakhstan.

Table 8: Percentage consumer tax equivalent of policies assisting producers of covered farm products,[a] Eastern European and CIS focus countries, 1992 to 2007
(percent, at primary product level)

	1992-95	1996-99	2000-03	2004-07[e]
Bulgaria	-20	-10	3	7
Czech Rep	23	19	22	20
Estonia	-15	12	9	20
Hungary	18	15	22	16
Latvia	2	28	32	32
Lithuania	-20	21	20	29
Poland	4	2	18	25
Romania	-6	16	39	29
Slovakia	13	15	16	17
Slovenia	48	58	45	24
CEEC-10	**2**	**11**	**24**	**23**
Turkey	10	20	16	9
Russia	-37	13	16	24
Ukraine	-25	0	-3	3
Kazakhstan	na	na	4	16
All focus countries:				
Unweighted average	-1	16	19	20
Weighted average[b]	**-13**	**13**	**16**	**14**
Dispersion of national CTEs[c]	27	17	14	10
Dispersion of region's product CTEs[d]	35	37	47	53

Source: Anderson and Valenzuela (2008) updated from estimates reported in Anderson and Swinnen (2008).
a. Assumes the CTE is the same as the NRA derived from trade measures (that is, not including any input taxes/subsidies or domestic producer price subsidies/taxes).
 b. Weights are consumption valued at undistorted prices, where consumption (from FAO) is production plus imports net of exports plus change in stocks of the covered products.
c. Simple 4-year average of the annual standard deviation around a weighted mean of the regional average CTE across the covered products.
d. Simple 4-year average of the annual standard deviation around a weighted mean of the national average CTE for covered products.
e. Final column refers just to 2004-05 for Russia and Ukraine and 2004 for Kazakhstan; and CEEC values assume the CTE for each product is the same as for the EU-25 in 2004-06 and for EU-27 in 2007, such that the differences across CEE countries is due to differing national consumption weights.

Appendix:

Annual estimates of rates of assistance, Eastern European and Central Asian countries, 1992 to 2007

Appendix Table 1: Growth of real GDP, Eastern European and Central Asian countries, 1990 to 2004

(at constant 2000 prices, percent per year, trend-based)

	Agriculture		Industry		Services		Total GDP	
	1990-94	1995-04	1990-94	1995-04	1990-94	1995-04	1990-94	1995-04
CEE-8	na	1.7	na	3.4	na	3.9	-2.0	3.7
Bulgaria	-11.6	3.4	-6.6	1.8	-1.3	2.7	-4.0	2.5
Romania	-2.3	0.1	-4.6	1.3	-4.5	1.9	-4.2	1.5
Turkey	0.7	0.8	4.3	1.9	3.4	3.4	3.2	2.7
CEE-11	**na**	**1.0**	**na**	**2.8**	**na**	**3.6**	**-0.6**	**3.2**
CIS-7	-6.4	1.7	-16.8	3.0	-6.9	1.9	-10.8	2.2
Other	-10.2	1.7	-12.3	6.9	-4.9	5.0	-12.4	5.1
All ECA	**-3.9**	**1.3**	**-9.5**	**2.9**	**-2.3**	**2.9**	**-5.9**	**2.7**

Source: Sandri, Valenzuela and Anderson (2008), compiled from World Bank's *World Development Indicators.*

Appendix Table 2: Sectoral shares of GDP, Eastern European and Central Asian countries, 1992 to 2004

(percent)

	Agriculture				Industry				Services			
	1992	1996	2000	2004	1992	1996	2000	2004	1992	1996	2000	2004
CEE-8	7	5	3	3	39	32	30	29	55	63	66	68
Bulgaria	12	14	12	9	39	29	27	26	49	57	61	65
Romania	19	19	11	13	43	40	32	33	38	41	57	54
Turkey	14	16	13	11	27	25	22	19	59	59	65	71
CEE-11	**11**	**10**	**8**	**6**	**34**	**30**	**27**	**26**	**55**	**60**	**65**	**68**
CIS-7	11	8	8	6	43	35	33	31	46	57	59	63
Other	25	16	13	11	37	29	28	29	39	55	59	60
All												
ECA	**11**	**9**	**8**	**6**	**39**	**32**	**29**	**28**	**49**	**59**	**63**	**66**

Source: Sandri, Valenzuela and Anderson (2008), compiled from World Bank's *World Development Indicators.*

Appendix Table 3: Agriculture's shares of employment, Eastern European and Central Asian countries, 1992 to 2003

(percent)

	1992	1996	2000	2003
CEE-8	20	18	16	15
Bulgaria	12	9	7	6
Romania	22	18	15	13
Turkey	49	47	44	41
CEE-11	**30**	**28**	**26**	**24**
CIS-7	18	16	15	14
Other	25	22	20	18
All ECA	**23**	**21**	**19**	**18**

Source: Sandri, Valenzuela and Anderson (2008), compiled from FAOSTAT.

Appendix Table 4: Sectoral shares of merchandise exports, Eastern European and Central Asian countries, 1995 and 2004

(percent)

	Agriculture and processed food		Other primary		Other goods	
	1995	2004	1995	2004	1995	2004
CEE-8	14	8	10	7	76	85
Bulgaria	21[a]	13	16[a]	20	63[a]	67
Romania	10	6	11	11	79	83
Turkey	21	10	5	5	74	85
Russia	5[a]	4	53[a]	58	26[a]	21
Kazakhstan	13	5	49	79	38	16
Ukraine	20[a]	13[b]	11[a]	17[b]	69[a]	70[b]
Kyrgyz Rep.	35	31	24	26	41	43

[a] 1996
[b] 2000-02

Source: Sandri, Valenzuela and Anderson (2008), compiled from World Bank's *World Development Indicators.*

Appendix Table 5: Index of revealed comparative advantage in agriculture and processed food,[a] Eastern European and Central Asian countries, 1995 and 2004

(world = 1.0)

	RCA index	
	1995	2004
CEE-8	1.2	0.9
Bulgaria	1.9[b]	1.4
Romania	0.8	0.7
Turkey	1.8	1.2
Russia	0.4[b]	0.5
Kazakhstan	1.1	1.6
Ukraine	1.8[b]	1.6[c]
Kyrgyz Rep.	3.0	3.6

[a] Share of agriculture and processed food in national exports as a ratio of that sector's share of global exports
[b] 1996
[c] 2000-02

Source: Sandri, Valenzuela and Anderson (2008), compiled from World Bank's *World Development Indicators.*

Appendix Table 6: Exports of goods and services as a percentage of GDP, Eastern European and Central Asian countries, 1995 and 2004

(percent)

	1995	2004
CEE-8	36	59
Bulgaria	54	58
Romania	24	37
Turkey	22	29
Russia	19	35
Kazakhstan	28	54
Ukraine	25	60
Kyrgyz Rep.	22	42

Source: Sandri, Valenzuela and Anderson (2008), compiled from World Bank's *World Development Indicators.*

Appendix Table 7: Annual distortion estimates, Bulgaria, 1992 to 2007
(a) Nominal rates of assistance[a] to covered products

(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Potato	Poultry	Rapeseed	Rice	Sheep meat	Soybean	Sugar	Sunflower	Tomato	Wheat	Wine	All covered
1992	-31	-40	1	-21	-32	na	-37	na	-27	na	na	-19	na	-34	-39	na	-38	na	-31
1993	14	-36	2	19	10	na	-7	na	-4	na	na	-14	na	-43	-30	na	-1	na	-3
1994	-19	-37	-5	-20	-11	na	-18	na	-13	na	na	-41	na	-29	-41	na	-32	na	-22
1995	-43	-23	12	-21	25	na	-15	na	-7	na	na	15	na	-26	-40	na	-45	na	-18
1996	-15	-55	-13	-21	-41	na	-48	na	-32	na	na	-51	na	-26	-36	na	-18	na	-36
1997	3	-33	2	-4	-15	na	-15	na	3	na	na	1	na	0	-29	na	0	na	-9
1998	10	-2	18	-6	64	na	7	na	26	na	na	-47	na	18	-20	na	-14	na	4
1999	-15	-26	35	-17	-7	na	16	na	33	na	na	-20	na	41	-24	na	-11	na	-5
2000	-10	2	13	1	15	na	5	na	25	na	na	-29	na	14	-11	na	-2	na	1
2001	-14	30	5	8	-19	na	-14	na	14	na	na	32	na	16	-15	na	-4	na	-5
2002	-20	47	38	-14	-24	na	-1	na	41	na	na	28	na	8	-16	na	-19	na	-9
2003	2	40	23	6	20	na	2	na	90	na	na	29	na	73	-7	na	9	na	15
2004	2	6	10	32	62	na	24	na	135	na	na	43	na	91	-27	na	13	na	20
2005	-23	-6	13	-12	-4	na	34	na	113	na	na	42	na	159	-7	na	-35	na	-2
2006	-22	-6	23	-23	-2	na	11	na	80	na	na	-4	na	76	-13	na	-23	na	-6
2007	0	66	0	21	0	0	18	10	100	0	1	68	0	99	0	0	0	1	9

a. NRA estimates are taken from authors' calculations where available, and are supplemented with estimates based on OECD PSE values.

Appendix Table 7 (continued): Annual distortion estimates, Bulgaria, 1992 to 2007
(b) Nominal and relative rates of assistance to all[a] agricultural products, to exportable[b]
and import-competing [b] agricultural industries, and relative[c] to non-agricultural
industries   (percent)

| | Total ag NRA | | | | Ag tradables NRA | | | | |
| | Covered products | | Non-covered products | All products (incl NPS) | Export-ables | Import-competing | All | Non-ag tradables NRA | RRA |
	Inputs	Outputs							
1992	1	-32	-33	-31	-32	-34	-32	na	na
1993	3	-6	-5	-3	-1	-12	-2	na	na
1994	2	-25	-23	-23	-24	-25	-22	na	na
1995	1	-19	-21	-19	-29	-6	-20	na	na
1996	1	-37	-35	-36	-40	-29	-35	na	na
1997	0	-9	-10	-9	-13	-4	-9	na	na
1998	0	4	7	6	-9	18	8	na	na
1999	1	-5	-4	-4	-11	11	-4	na	na
2000	0	1	4	2	-6	11	5	na	na
2001	0	-5	-7	-6	-9	6	-7	5	-11
2002	1	-10	-12	-10	-14	19	-11	5	-16
2003	2	13	12	13	7	25	13	9	3
2004	2	18	17	18	6	53	13	9	3
2005	0	-2	8	4	-16	40	-5	9	-13
2006	0	-6	7	-3	-16	12	-8	9	-16
2007	0	9	-10	7	4	36	7	9	-1

a. NRAs including assistance to nontradables and non-product specific assistance.
b. NRAs including products specific input subsidies.
c. The Relative Rate of Assistance (RRA) is defined as $100*[(100+NRAag^t)/(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural sectors, respectively.

Appendix Table 7 (continued): Annual distortion estimates, Bulgaria, 1992 to 2007
(c) Value shares of primary production of covered[a] and non-covered products,
(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Potato	Poultry	Rapeseed	Rice	Sheep meat	Soybean	Sugar	Sunflower	Tomato	Wheat	Wine	Non-covered
1992	3	5	2	4	8	na	13	na	3	na	na	4	na	0	3	na	10	na	45
1993	3	7	3	3	9	na	13	na	4	na	na	6	na	0	3	na	13	na	36
1994	3	6	3	5	9	na	10	na	3	na	na	5	na	0	5	na	12	na	38
1995	3	4	3	6	6	na	12	na	3	na	na	3	na	0	5	na	12	na	42
1996	2	5	3	5	9	na	14	na	4	na	na	6	na	0	3	na	8	na	41
1997	2	4	2	5	7	na	13	na	3	na	na	3	na	0	2	na	12	na	46
1998	1	3	2	4	6	na	12	na	3	na	na	3	na	0	5	na	11	na	48
1999	2	3	2	6	9	na	8	na	3	na	na	5	na	0	5	na	9	na	48
2000	3	4	3	5	10	na	12	na	4	na	na	7	na	0	4	na	13	na	36
2001	3	1	3	3	15	na	3	na	4	na	na	2	na	0	3	na	15	na	47
2002	3	1	2	5	10	na	3	na	1	na	na	2	na	0	5	na	13	na	55
2003	2	1	4	5	8	na	4	na	2	na	na	2	na	0	7	na	9	na	54
2004	4	1	2	7	6	na	3	na	1	na	na	2	na	0	9	na	14	na	50
2005	2	2	2	5	7	na	4	na	2	na	na	2	na	0	7	na	11	na	57
2006	2	1	2	6	11	na	4	na	2	na	na	2	na	0	9	na	12	na	48
2007	4	2	3	2	3	0	5	2	2	1	0	3	0	0	10	4	23	12	24

a. At farmgate undistorted prices.

Appendix Table 7 (continued): Annual distortion estimates, Bulgaria, 1992 to 2007
(d) Trade status[a] of covered products

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Potato	Poultry	Rapeseed	Rice	Sheepmeat	Soybean	Sugar	Sunflower	Tomato	Wheat	Wine
1992	X	X	X	X	X	na	X	na	X	na	na	X	na	M	X	na	X	na
1993	X	M	X	M	X	na	M	na	X	na	na	X	na	M	X	na	X	na
1994	X	M	X	X	X	na	M	na	X	na	na	X	na	M	X	na	X	na
1995	X	M	X	X	M	na	M	na	X	na	na	X	na	M	X	na	X	na
1996	X	M	X	M	X	na	X	na	X	na	na	X	na	M	X	na	M	na
1997	M	M	X	X	X	na	X	na	M	na	na	M	na	M	X	na	M	na
1998	X	M	X	X	M	na	M	na	M	na	na	M	na	M	X	na	X	na
1999	X	M	X	X	X	na	M	na	M	na	na	X	na	M	X	na	X	na
2000	X	M	X	X	M	na	M	na	M	na	na	X	na	M	X	na	X	na
2001	X	M	X	M	X	na	M	na	M	na	na	X	na	M	X	na	X	na
2002	X	M	X	X	X	na	M	na	M	na	na	X	na	M	X	na	X	na
2003	X	M	X	X	M	na	M	na	M	na	na	X	na	M	X	na	X	na
2004	X	M	X	X	M	na	M	na	M	na	na	X	na	M	X	na	X	na
2005	X	M	X	X	M	na	M	na	M	na	na	X	na	M	X	na	X	na
2006	X	M	X	X	M	na	M	na	M	na	na	X	na	M	X	na	X	na
2007	X	M	X	X	M	X	M	X	M	X	X	X	X	M	X	X	X	X

Sources: Ciaian and Swinnen (2007) and OECD (2007)
a. Exportable (X), import-competing (M) and nontradables (H).
b. Trade status is endogenously determined where the NRA is based on OECD information

Appendix Table 8: Annual distortion estimates, Czech Republic, 1992 to 2007
(a) Nominal rates of assistance[a] to covered products

(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Potato	Poultry	Rapeseed	Soybean	Sugar	Sunflower	Tomato	Wheat	All covered
1992	4	77	15	na	47	na	-12	na	49	18	na	51	na	na	-2	19
1993	40	32	2	na	61	na	18	na	51	-4	na	32	na	na	15	34
1994	15	26	16	na	48	na	11	na	49	-26	na	2	na	na	-1	20
1995	-29	22	29	na	40	na	4	na	35	-23	na	13	na	na	-34	6
1996	-28	24	15	na	44	na	6	na	33	-20	na	20	na	na	-25	8
1997	-11	6	35	na	52	na	-12	na	33	-20	na	5	na	na	-9	9
1998	18	16	51	na	98	na	32	na	53	-22	na	17	na	na	4	39
1999	-17	26	51	na	52	na	38	na	31	-16	na	13	na	na	-6	29
2000	-25	31	36	na	27	na	16	na	28	-6	na	18	na	na	-11	19
2001	-5	19	26	na	31	na	37	na	36	10	na	21	na	na	4	31
2002	1	26	14	na	71	na	19	na	59	-4	na	30	na	na	-1	34
2003	-7	41	3	na	78	na	18	na	55	8	na	58	na	na	1	39
2004	0	-125	0	na	87	na	36	na	103	0	na	193	na	na	0	30
2005	0	109	0	19	33	24	19	10	69	0	0	168	0	0	0	21
2006	0	81	0	11	25	0	14	10	69	0	0	62	0	0	0	16
2007	0	66	0	21	0	0	18	10	100	0	0	99	0	0	0	11

a. NRA estimates are taken from authors' calculations where available, and are supplemented with estimates based on OECD PSE values.

Appendix Table 8 (continued): Annual distortion estimates, Czech Republic, 1992 to 2007
(b) Nominal and relative rates of assistance to all[a] agricultural products, to exportable[b] and import-competing [b] agricultural industries, and relative[c] to non-agricultural industries   (percent)

	Total ag NRA				Ag tradables NRA				
	Covered products		Non-covered products	All products (incl NPS)	Export-ables	Import-competing	All	Non-ag tradables NRA	RRA
	Inputs	Outputs							
1992	1	18	20	20	32	0	20	na	na
1993	3	31	33	32	31	40	32	na	na
1994	2	18	20	22	20	16	22	na	na
1995	3	3	5	7	1	10	7	na	na
1996	3	5	6	8	3	11	8	6	2
1997	4	5	6	8	6	1	8	6	2
1998	7	31	35	36	29	40	36	6	28
1999	8	21	23	25	3	44	25	3	22
2000	7	12	13	16	1	24	16	3	13
2001	9	21	24	25	8	35	25	3	22
2002	8	26	30	31	7	48	31	4	25
2003	10	29	33	35	11	49	35	4	29
2004	0	30	49	23	21	53	26	5	20
2005	0	21	35	22	18	31	19	5	13
2006	0	16	26	19	12	27	14	5	9
2007	0	11	18	13	6	38	9	5	4

a. NRAs including assistance to nontradables and non-product specific assistance.

b. NRAs including products specific input subsidies.

c. The Relative Rate of Assistance (RRA) is defined as $100*[(100+NRAag^t)/$
$(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural sectors, respectively.

Appendix Table 8 (continued): Annual distortion estimates, Czech Republic, 1992 to 2007
(c) Value shares of primary production of covered[a] and non-covered products,
(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Potato	Poultry	Rapeseed	Soybean	Sugar	Sunflower	Tomato	Wheat	Non-covered
1992	5	6	3	na	13	na	21	na	2	1	na	2	na	na	8	39
1993	5	8	4	na	13	na	16	na	2	2	na	3	na	na	8	39
1994	5	7	4	na	12	na	15	na	3	3	na	2	na	na	10	39
1995	6	7	3	na	11	na	15	na	2	4	na	2	na	na	12	39
1996	7	6	3	na	10	na	16	na	2	3	na	2	na	na	13	38
1997	8	7	3	na	9	na	17	na	3	3	na	2	na	na	12	36
1998	5	7	4	na	10	na	15	na	4	5	na	2	na	na	12	36
1999	6	6	3	na	12	na	11	na	4	5	na	2	na	na	11	39
2000	5	5	4	na	14	na	13	na	4	5	na	2	na	na	12	35
2001	6	4	4	na	13	na	15	na	5	5	na	2	na	na	12	33
2002	6	5	4	na	13	na	14	na	4	5	na	3	na	na	11	35
2003	8	6	5	na	13	na	15	na	5	3	na	2	na	na	9	35
2004	7	6	5	na	15	na	17	na	5	5	na	3	na	na	13	24
2005	9	5	5	2	5	0	15	4	5	7	0	1	1	0	17	24
2006	8	5	4	2	6	1	14	4	4	8	0	2	1	0	16	24
2007	11	3	3	3	8	1	9	3	3	9	0	1	1	0	22	24

a. At farmgate undistorted prices.

Appendix Table 8 (continued): Annual distortion estimates, Czech Republic, 1992 to 2007
(d) Trade status[a] of covered products

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Potato	Poultry	Rapeseed	Soybean	Sugar	Sunflower	Tomato	Wheat
1992	X	X	X	na	X	na	M	na	M	X	na	M	na	na	X
1993	M	X	X	na	X	na	X	na	X	X	na	X	na	na	X
1994	X	M	X	na	X	na	M	na	X	X	na	X	na	na	X
1995	X	X	X	na	X	na	M	na	M	X	na	M	na	na	X
1996	X	X	X	na	X	na	M	na	M	X	na	X	na	na	X
1997	X	X	X	na	X	na	X	na	M	X	na	X	na	na	M
1998	X	X	X	na	X	na	M	na	M	X	na	X	na	na	X
1999	X	X	X	na	M	na	M	na	M	X	na	X	na	na	X
2000	X	X	X	na	M	na	M	na	M	X	na	X	na	na	X
2001	X	X	X	na	M	na	M	na	M	X	na	M	na	na	X
2002	X	X	X	na	M	na	M	na	M	X	na	X	na	na	X
2003	X	X	X	na	M	na	M	na	M	X	na	X	na	na	X
2004	X	X	X	na	X	na	M	na	M	X	na	X	na	na	X
2005	X	X	X	X	X	X	M	X	M	X	X	X	X	X	X
2006	X	X	X	X	X	X	M	X	M	X	X	X	X	X	X
2007	X	X	X	X	X	X	M	X	M	X	X	X	X	X	X

Sources: Ciaian and Swinnen (2007) and OECD (2007)
a. Exportable (X), import-competing (M) and nontradables (H).
b. Trade status is endogenously determined where the NRA is based on OECD information

Appendix Table 9: Annual distortion estimates, Estonia, 1992 to 2007
(a) Nominal rates of assistance[a] to covered products

(percent)

	Barley	Beef	Egg	Milk	Oat	Oilseed	Pigmeat	Potato	Poultry	Rye	Tomato	Wheat	All covered
1992	-28	-57	-41	-41	-46	22	-50	na	-34	22	na	6	-39
1993	-7	-30	-32	-22	-38	-3	-22	na	6	-14	na	-6	-22
1994	-10	-23	-15	-10	-28	-14	15	na	34	10	na	-1	-8
1995	16	-29	14	14	-4	16	0	na	60	36	na	1	4
1996	9	-23	11	29	20	-2	-5	na	60	20	na	1	10
1997	13	-31	26	31	50	-1	-12	na	48	22	na	14	11
1998	70	-8	25	42	29	18	42	na	47	98	na	43	37
1999	33	-21	53	-7	50	36	45	na	29	61	na	35	9
2000	3	-26	23	15	22	25	26	na	34	34	na	13	13
2001	1	16	26	8	6	42	18	na	28	21	na	10	12
2002	18	21	11	23	-14	30	19	na	69	-3	na	17	21
2003	11	0	5	42	-8	22	20	na	78	3	na	9	26
2004	0	-125	0	87	1	0	36	na	103	na	na	0	36
2005	0	109	0	33	24	0	19	10	69	na	0	0	20
2006	0	81	0	25	0	0	14	10	69	na	0	0	15
2007	0	66	0	0	0	0	18	10	100	na	0	0	7

a. NRA estimates are taken from authors' calculations where available, and are supplemented with estimates based on OECD PSE values.

Appendix Table 9 (continued): Annual distortion estimates, Estonia, 1992 to 2007
(b) Nominal and relative rates of assistance to all[a] agricultural products, to exportable[b] and import-competing [b] agricultural industries, and
relative[c] to non-agricultural industries   (percent)

	Total ag NRA				Ag tradables NRA				
	Covered products		Non-covered products	All products (incl NPS)	Export-ables	Import-competing	All	Non-ag tradables NRA	RRA
	Inputs	Outputs							
1992	0	-39	-39	-38	-51	-31	-38	na	na
1993	0	-22	-22	-20	-26	-18	-20	na	na
1994	0	-8	-8	-6	-21	-3	-6	na	na
1995	1	4	4	8	-18	12	8	0	8
1996	2	9	10	13	-2	10	13	0	12
1997	2	10	11	14	-1	11	14	0	13
1998	11	26	37	41	23	38	41	0	40
1999	10	-1	9	13	-5	40	13	0	12
2000	9	4	13	15	25	12	15	1	14
2001	8	4	12	13	10	15	13	1	12
2002	12	9	21	23	21	21	23	1	22
2003	12	14	26	30	14	27	30	1	29
2004	0	36	36	23	87	1	36	0	36
2005	0	20	20	18	24	18	14	0	14
2006	0	15	15	16	19	13	11	0	11
2007	0	7	7	9	3	8	4	0	4

a. NRAs including assistance to nontradables and non-product specific assistance.
b. NRAs including products specific input subsidies.
c. The Relative Rate of Assistance (RRA) is defined as $100*[(100+NRAag^t)/$
$(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural
sectors, respectively.

Appendix Table 9 (continued): Annual distortion estimates, Estonia, 1992 to 2007
(c) Value shares of primary production of covered[a] and non-covered products,
(percent)

	Barley	Beef	Egg	Milk	Oat	Oilseed	Pigmeat	Potato	Poultry	Rye	Tomato	Wheat	Non-covered
1992	5	8	4	24	1	0	11	na	2	3	na	2	41
1993	7	15	3	23	2	0	9	na	1	3	na	2	35
1994	5	11	4	22	1	0	8	na	1	1	na	1	46
1995	6	11	3	23	1	0	11	na	1	1	na	2	41
1996	9	9	4	22	3	0	11	na	1	2	na	3	37
1997	7	8	3	23	2	0	13	na	1	1	na	3	37
1998	5	8	4	26	2	1	12	na	2	1	na	3	37
1999	3	9	3	25	1	1	8	na	2	1	na	2	46
2000	8	6	3	25	2	2	9	na	2	1	na	4	39
2001	6	4	3	31	2	2	12	na	2	1	na	3	35
2002	5	5	3	24	2	3	13	na	2	1	na	3	38
2003	6	4	4	22	1	4	12	na	3	1	na	4	41
2004	6	5	3	25	2	3	11	na	2	na	na	3	39
2005	11	4	3	9	2	5	10	6	2	na	0	8	41
2006	10	4	3	10	2	6	10	7	2	na	0	8	38
2007	14	2	2	12	2	7	6	4	1	na	0	12	38

a. At farmgate undistorted prices.

Appendix Table 9 (continued): Annual distortion estimates, Estonia, 1992 to 2007
(d) Trade status[a] of covered products

	Barley	Beef	egg	Milk	Oat	Oilseed	Pigmeat	Potato	Poultry	Rye	Tomato	Wheat
1992	M	X	X	M	M	X	X	na	M	M	na	M
1993	M	X	X	M	M	X	X	na	M	X	na	M
1994	M	X	X	M	M	X	M	na	M	M	na	M
1995	M	X	X	M	M	X	M	na	M	M	na	M
1996	M	M	M	M	M	X	M	na	M	M	na	M
1997	M	M	M	M	M	X	M	na	M	M	na	M
1998	M	M	X	M	M	X	M	na	M	M	na	M
1999	M	X	X	X	M	X	M	na	M	M	na	M
2000	M	M	M	M	M	X	M	na	M	M	na	M
2001	M	M	M	X	M	X	M	na	M	M	na	M
2002	M	M	M	X	X	M	M	na	M	M	na	M
2003	M	M	M	M	X	X	M	na	M	M	na	M
2004	M	M	M	X	M	M	M	na	M	na	na	M
2005	M	M	M	X	M	M	M	X	M	na	X	M
2006	M	M	M	X	M	M	M	X	M	na	X	M
2007	M	M	M	X	M	M	M	X	M	na	X	M

Sources: Ciaian and Swinnen (2007) and OECD (2007)
a. Exportable (X), import-competing (M) and nontradables (H).
b. Trade status is endogenously determined where the NRA is based on OECD information

Appendix Table 10: Annual distortion estimates, Hungary, 1992 to 2007
(a) Nominal rates of assistance[a] to covered products

(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Potato	Poultry	Rapeseed	Rice	Sheepmeat	Soybean	Sugar	Sunflower	Tomato	Wheat	Wine	All covered
1992	-10	46	63	-4	48	na	17	23	20	na	na	46	na	100	-24	na	-18	na	20
1993	27	18	52	25	72	na	30	15	29	na	na	-7	na	84	-36	na	14	na	33
1994	15	25	59	-3	76	na	44	-7	37	na	na	-12	na	70	-17	na	-3	na	28
1995	-31	15	60	-13	42	na	30	-2	33	na	na	-3	na	65	-11	na	-35	na	11
1996	3	-1	34	-13	28	na	6	17	33	na	na	7	na	75	-7	na	-4	na	11
1997	-10	-13	63	-25	58	na	7	52	32	na	na	-7	na	94	-10	na	-15	na	9
1998	19	-7	81	-23	111	na	46	3	39	na	na	17	na	81	-9	na	-9	na	29
1999	9	5	96	-12	97	na	39	9	28	na	na	-49	na	129	-2	na	16	na	32
2000	-1	4	68	-1	55	na	15	35	37	na	na	-53	na	95	-5	na	13	na	28
2001	-2	6	82	-25	60	na	37	21	48	na	na	-52	na	111	1	na	-11	na	26
2002	7	8	27	-9	116	na	47	83	61	na	na	-48	na	232	15	na	10	na	52
2003	-15	7	-10	32	113	na	23	86	51	na	na	-48	na	287	1	na	28	na	48
2004	0	-125	0	-25	87	na	36	10	103	na	na	47	na	193	0	na	0	na	25
2005	0	109	0	19	33	24	19	10	69	0	2	54	0	168	0	0	0	2	18
2006	0	81	0	11	25	0	14	10	69	0	3	74	0	62	0	0	0	1	14
2007	0	66	0	21	0	0	18	10	100	0	1	68	0	99	0	0	0	1	13

a. NRA estimates are taken from authors' calculations where available, and are supplemented with estimates based on OECD PSE values.

Appendix Table 10 (continued): Annual distortion estimates, Hungary, 1992 to 2007
(b) Nominal and relative rates of assistance to all[a] agricultural products, to exportable[b] and import-competing [b] agricultural industries, and
relative[c] to non-agricultural industries   (percent)

	Total ag NRA				Ag tradables NRA				
	Covered products		Non-covered products	All products (incl NPS)	Export-ables	Import-competing	All	Non-ag tradables NRA	RRA
	Inputs	Outputs							
1992	4	16	16	16	15	23	16	10	5
1993	5	28	28	28	22	50	28	9	17
1994	5	23	23	24	15	42	24	9	13
1995	3	7	7	7	4	21	7	9	-1
1996	4	7	7	7	7	3	7	8	-2
1997	4	5	5	7	5	na	7	4	2
1998	8	21	21	26	22	3	26	4	21
1999	7	25	25	33	25	9	33	4	27
2000	7	22	22	26	22	18	26	4	21
2001	9	17	17	23	13	51	23	4	18
2002	17	35	35	45	34	38	45	8	34
2003	14	34	34	43	32	61	43	8	32
2004	0	25	30	19	26	10	25	8	16
2005	0	18	22	20	19	10	18	8	10
2006	0	14	16	17	14	10	14	8	6
2007	0	13	16	15	14	10	13	8	5

a. NRAs including assistance to nontradables and non-product specific assistance.
b. NRAs including products specific input subsidies.
c. The Relative Rate of Assistance (RRA) is defined as $100*[(100+NRAag^t)/$
$(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural
sectors, respectively.

Appendix Table 10 (continued): Annual distortion estimates, Hungary, 1992 to 2007
(c) Value shares of primary production of covered[a] and non-covered products,
(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Potato	Poultry	Rapeseed	Rice	Sheepmeat	Soybean	Sugar	Sunflower	Tomato	Wheat	Wine	Non-covered
1992	3	3	4	9	7	na	18	3	8	na	na	1	na	1	4	na	8	na	31
1993	2	4	4	10	7	na	17	4	8	na	na	1	na	1	4	na	7	na	32
1994	3	3	4	11	6	na	14	4	7	na	na	1	na	1	4	na	10	na	32
1995	3	2	2	10	6	na	13	5	7	na	na	1	na	1	4	na	11	na	34
1996	2	2	3	14	5	na	14	2	6	na	na	1	na	1	3	na	10	na	37
1997	3	2	3	15	6	na	15	1	8	na	na	1	na	1	2	na	13	na	31
1998	2	2	2	13	6	na	12	3	8	na	na	1	na	1	4	na	10	na	34
1999	2	2	2	17	7	na	12	3	9	na	na	1	na	1	4	na	5	na	34
2000	2	2	3	12	8	na	16	2	10	na	na	1	na	1	2	na	9	na	31
2001	3	2	3	17	8	na	14	2	10	na	na	1	na	1	3	na	11	na	27
2002	3	2	3	15	7	na	13	1	9	na	na	1	na	1	5	na	8	na	32
2003	3	2	4	11	7	na	16	1	9	na	na	1	na	0	5	na	7	na	32
2004	3	2	4	15	8	na	16	2	11	na	na	1	na	1	4	na	10	na	24
2005	3	1	3	16	4	0	10	1	7	1	0	1	0	1	6	2	11	9	24
2006	2	1	3	17	4	0	9	2	6	2	0	1	0	1	6	2	11	8	24
2007	4	1	3	10	7	0	8	2	5	3	0	0	0	0	7	3	15	8	24

a. At farmgate undistorted prices.

Appendix Table 10 (continued): Annual distortion estimates, Hungary, 1992 to 2007
(d) Trade status[a] of covered products

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Potato	Poultry	Rapeseed	Rice	Sheepmeat	Soybean	Sugar	Sunflower	Tomato	Wheat	Wine
1992	X	X	X	X	X	na	X	M	X	na	na	X	na	X	X	na	X	na
1993	M	X	X	X	M	na	X	M	X	na	na	X	na	M	X	na	X	na
1994	M	M	M	X	M	na	X	M	X	na	na	X	na	M	X	na	X	na
1995	X	X	X	X	M	na	X	M	X	na	na	X	na	X	X	na	X	na
1996	M	X	X	X	X	na	X	X	X	na	na	X	na	X	X	na	X	na
1997	X	X	X	X	X	na	X	X	X	na	na	X	na	X	X	na	X	na
1998	X	X	X	X	X	na	X	M	X	na	na	X	na	X	X	na	X	na
1999	X	X	X	X	X	na	X	M	X	na	na	X	na	X	X	na	X	na
2000	X	M	X	X	X	na	X	M	X	na	na	X	na	X	X	na	X	na
2001	X	M	M	X	X	na	X	M	X	na	na	X	na	M	X	na	X	na
2002	X	M	X	X	X	na	X	M	X	na	na	X	na	X	X	na	X	na
2003	X	M	X	X	X	na	X	M	X	na	na	X	na	M	X	na	X	na
2004	X	X	X	X	X	na	X	M	X	na	na	X	na	X	X	na	X	na
2005	X	X	X	X	X	X	X	M	X	X	X	X	X	X	X	X	X	X
2006	X	X	X	X	X	X	X	M	X	X	X	X	X	X	X	X	X	X
2007	X	X	X	X	X	X	X	M	X	X	X	X	X	X	X	X	X	X

Sources: Ciaian and Swinnen (2007) and OECD (2007)
a. Exportable (X), import-competing (M) and nontradables (H).
b. Trade status is endogenously determined where the NRA is based on OECD information

Appendix Table 11: Annual distortion estimates, Kazakhstan, 2000 to 2004
(a) Nominal rates of assistance[a] to covered products

(percent)

	Beef	Milk	Pigmeat	Potato	Sugar	Wheat	All covered
2000	-38	-2	63	8	-5	-1	-13
2001	-3	-3	46	-4	-3	-8	-4
2002	-1	0	39	4	21	4	3
2003	36	-4	82	3	28	2	-18
2004	68	8	59	13	21	-16	-8

a. NRA estimates are taken from authors' calculations where available, and are supplemented with estimates based on OECD PSE values.

Appendix Table 11 (continued): Annual distortion estimates, Kazakhstan, 2000 to 2004
(b) Nominal and relative rates of assistance to all[a] agricultural products, to exportable[b] and import-competing [b] agricultural industries, and
relative[c] to non-agricultural industries   (percent)

	Total ag NRA				Ag tradables NRA				
	Covered products		Non-covered products	All products (incl NPS)	Export-ables	Import-competing	All	Non-ag tradables NRA	RRA
	Inputs	Outputs							
2000	0	-13	-13	na	1	-21	-8	2	-10
2001	0	-4	-4	na	-10	2	-4	2	-6
2002	0	3	3	na	2	5	2	2	0
2003	0	-18	-18	na	-6	-22	-12	2	-14
2004	0	-8	-8	-5	-17	2	-8	2	-10

a. NRAs including assistance to nontradables and non-product specific assistance.
b. NRAs including products specific input subsidies.
c. The Relative Rate of Assistance (RRA) is defined as $100*[(100+NRAag^t)/$
$(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural
sectors, respectively.

Appendix Table 11 (continued): Annual distortion estimates, Kazakhstan, 2000 to 2004
(c) Value shares of primary production of covered[a] and non-covered products,
(percent)

	Beef	Milk	Pigmeat	Potato	Sugar	Wheat	Non-covered
2000	26	10	2	4	2	13	43
2001	7	10	3	5	3	23	49
2002	8	11	4	4	2	16	55
2003	3	7	2	4	1	10	73
2004	3	7	2	3	2	18	65

a. At farmgate undistorted prices.

Appendix Table 11 (continued): Annual distortion estimates, Kazakhstan, 2000 to 2004
(d) Trade status[a] of covered products

	Beef	Milk	Pigmeat	Potato	Sugar	Wheat
2000	M	M	M	X	M	X
2001	M	M	M	M	M	X
2002	M	M	M	M	M	X
2003	M	M	M	M	M	X
2004	M	M	M	X	M	X

Sources: Pomfret (2007a)
a. Exportable (X), import-competing (M) and nontradables (H).
b. Trade status is endogenously determined where the NRA is based on OECD information

Appendix Table 12: Annual distortion estimates, Latvia, 1992 to 2007
(a) Nominal rates of assistance[a] to covered products

(percent)

	Barley	Beef	Egg	Milk	Oat	Oilseed	Pigmeat	Potato	Poultry	Rye	Sugar	Tomato	Wheat	All covered
1992	-30	-78	-44	-69	-44	9	-61	na	-56	-5	65	na	-24	-46
1993	-17	-66	0	-40	-38	-14	14	na	24	-34	78	na	-22	-25
1994	-6	-32	22	-21	-11	-27	79	na	74	-14	78	na	-10	5
1995	-22	-26	58	-19	-12	-22	27	na	70	17	55	na	-4	1
1996	-9	-18	35	-13	0	-22	12	na	50	16	59	na	1	3
1997	-3	-28	51	-7	41	10	6	na	59	18	83	na	5	12
1998	27	-14	57	15	11	144	30	na	76	39	136	na	21	45
1999	29	-2	64	6	61	26	122	na	87	72	126	na	20	46
2000	19	-6	50	0	64	23	78	na	109	60	101	na	12	31
2001	6	58	36	2	21	32	57	na	96	34	101	na	2	33
2002	8	37	4	10	-15	5	35	na	153	-16	109	na	-9	33
2003	-3	-10	-10	6	-6	-2	37	na	55	7	134	na	-6	26
2004	0	-125	0	87	1	0	36	na	103	na	193	na	0	64
2005	0	109	0	33	24	0	19	10	69	na	168	0	0	15
2006	0	81	0	25	0	0	14	10	69	na	62	0	0	11
2007	0	66	0	0	0	0	18	10	100	na	99	0	0	5

a. NRA estimates are taken from authors' calculations where available, and are supplemented with estimates based on OECD PSE values.

Appendix Table 12 (continued): Annual distortion estimates, Latvia, 1992 to 2007
(b) Nominal and relative rates of assistance to all[a] agricultural products, to exportable[b] and import-competing [b] agricultural industries, and
relative[c] to non-agricultural industries   (percent)

	Total ag NRA				Ag tradables NRA				
	Covered products		Non-covered products	All products (incl NPS)	Export-ables	Import-competing	All	Non-ag tradables NRA	RRA
	Inputs	Outputs							
1992	0	-46	-46	-45	-47	-44	-45	na	na
1993	0	-25	-25	-24	-46	27	-24	na	na
1994	2	4	5	7	-22	51	7	na	na
1995	2	-1	1	3	-9	25	3	na	na
1996	1	2	3	5	-7	11	5	2	3
1997	1	11	12	14	-2	27	14	3	10
1998	6	39	45	48	20	62	48	3	44
1999	10	37	46	54	37	48	54	3	50
2000	8	23	31	38	49	30	38	3	34
2001	5	28	33	40	14	37	40	2	37
2002	6	27	33	35	53	18	35	2	32
2003	9	17	26	31	46	10	31	2	28
2004	0	64	64	39	0	82	39	3	36
2005	0	15	15	15	3	35	10	3	7
2006	0	11	11	13	4	25	7	3	5
2007	0	5	5	8	3	9	4	3	1

a. NRAs including assistance to nontradables and non-product specific assistance.

b. NRAs including products specific input subsidies.

c. The Relative Rate of Assistance (RRA) is defined as $100*[(100+NRAag^t)/$
$(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural
sectors, respectively.

Appendix Table 12 (continued): Annual distortion estimates, Latvia, 1992 to 2007
(c) Value shares of primary production of covered[a] and non-covered products, (percent)

	Barley	Beef	Egg	Milk	Oat	Oilseed	Pigmeat	Potato	Poultry	Rye	Sugar	Tomato	Wheat	Non-covered
1992	3	10	2	18	1	0	5	na	1	2	5	na	3	50
1993	3	15	2	19	1	0	7	na	1	3	5	na	3	40
1994	5	13	2	22	1	0	8	na	2	1	6	na	3	36
1995	3	9	2	22	1	0	9	na	1	1	6	na	4	42
1996	7	5	3	23	1	0	7	na	1	2	6	na	8	37
1997	5	5	3	22	1	0	8	na	1	2	9	na	7	37
1998	4	6	3	22	1	0	6	na	1	1	14	na	6	36
1999	4	5	3	25	1	0	5	na	1	1	12	na	7	34
2000	5	5	4	26	1	0	6	na	1	1	10	na	8	32
2001	3	3	4	24	1	0	6	na	1	1	12	na	7	37
2002	3	2	4	19	1	1	6	na	1	2	12	na	8	41
2003	4	3	5	18	1	1	5	na	1	1	9	na	8	43
2004	4	4	4	22	1	1	6	na	1	na	11	na	8	38
2005	8	3	6	2	2	6	5	12	1	na	1	0	14	39
2006	6	3	6	2	2	6	5	15	1	na	1	0	14	39
2007	7	1	5	9	2	7	2	10	1	na	0	0	17	39

a. At farmgate undistorted prices.

Appendix Table 12 (continued): Annual distortion estimates, Latvia, 1992 to 2007

(d) Trade status[a] of covered products

	Barley	Beef	Egg	Milk	Oat	Oilseed	Pigmeat	Potato	Poultry	Rye	Sugar	Tomato	Wheat
1992	M	X	X	X	M	X	M	na	M	X	X	na	M
1993	M	X	X	X	X	M	M	na	M	X	M	na	X
1994	M	X	X	X	X	X	M	na	M	X	M	na	M
1995	M	X	M	X	M	X	X	na	M	X	M	na	M
1996	M	M	X	X	M	X	M	na	M	M	M	na	M
1997	M	M	M	X	X	X	X	na	M	M	M	na	M
1998	M	M	X	X	X	X	M	na	M	M	M	na	M
1999	M	M	X	M	X	M	M	na	M	M	M	na	X
2000	M	M	X	M	M	X	M	na	M	M	M	na	M
2001	M	M	X	M	M	X	M	na	M	M	M	na	X
2002	M	M	X	M	M	X	M	na	M	M	X	na	X
2003	M	M	X	M	M	X	M	na	M	X	X	na	X
2004	M	M	X	M	M	X	M	na	M	na	M	na	X
2005	M	M	X	M	M	X	M	X	M	na	M	X	X
2006	M	M	X	M	M	X	M	X	M	na	M	X	X
2007	M	M	X	M	M	X	M	X	M	na	M	X	X

Sources: Ciaian and Swinnen (2007) and OECD (2007)

a. Exportable (X), import-competing (M) and nontradables (H).

b. Trade status is endogenously determined where the NRA is based on OECD information

Appendix Table 13: Annual distortion estimates, Lithuania, 1992 to 2007
(a) Nominal rates of assistance[a] to covered products

(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Oilseed	Pigmeat	Potato	Poultry	Rye	Sugar	Tomato	Wheat	All covered
1992	-31	-71	-42	na	-74	-53	73	-47	na	-45	-9	107	na	-31	-46
1993	-2	-48	-18	na	-57	-34	-39	14	na	19	-24	74	na	-21	-21
1994	-15	-31	-1	na	-55	-39	-28	60	na	79	-31	35	na	-27	-18
1995	-7	-24	22	na	-35	-16	-9	39	na	88	7	65	na	-6	0
1996	-3	-18	14	na	-30	28	7	27	na	74	9	73	na	-1	3
1997	7	-15	23	na	-20	51	-8	19	na	82	33	97	na	-1	14
1998	24	28	18	na	3	12	-4	60	na	108	56	145	na	6	41
1999	26	10	31	na	-11	36	-9	86	na	111	103	190	na	35	42
2000	5	-10	14	na	-27	4	17	72	na	96	32	172	na	6	23
2001	8	54	11	na	-28	3	20	51	na	86	17	116	na	11	18
2002	31	38	-10	na	-9	-15	16	35	na	93	-5	149	na	26	33
2003	17	-5	-6	na	-1	10	11	41	na	52	4	203	na	17	33
2004	0	-125	0	na	87	1	0	36	na	103	na	193	na	0	55
2005	0	109	0	19	33	24	0	19	10	69	na	168	0	0	18
2006	0	81	0	11	25	0	0	14	10	69	na	62	0	0	15
2007	0	66	0	21	0	0	0	18	10	100	na	99	0	0	7

a. NRA estimates are taken from authors' calculations where available, and are supplemented with estimates based on OECD PSE values.

Appendix Table 13 (continued): Annual distortion estimates, Lithuania, 1992 to 2007
(b) Nominal and relative rates of assistance to all[a] agricultural products, to exportable[b] and import-competing [b] agricultural industries, and relative[c] to non-agricultural industries (percent)

| | Total ag NRA | | | | Ag tradables NRA | | | | |
| | Covered products | | Non-covered products | All products (incl NPS) | Export-ables | Import-competing | All | Non-ag tradables NRA | RRA |
	Inputs	Outputs							
1992	0	-46	-46	-45	-70	-3	-45	na	na
1993	0	-21	-21	-20	-50	20	-20	na	na
1994	1	-20	-18	-15	-27	35	-15	na	na
1995	2	-2	0	2	-11	24	2	3	0
1996	2	1	3	6	-14	24	6	3	3
1997	3	11	14	17	-7	56	17	2	14
1998	4	37	41	45	19	98	45	2	41
1999	2	40	42	47	36	64	47	2	43
2000	2	21	23	27	17	38	27	2	24
2001	3	14	18	22	13	33	22	2	19
2002	6	27	33	38	32	34	38	1	37
2003	8	25	33	39	3	80	39	1	38
2004	0	55	55	35	64	29	53	1	51
2005	0	18	18	17	20	15	17	1	15
2006	0	15	15	16	17	13	14	1	13
2007	0	7	7	9	6	9	6	1	5

a. NRAs including assistance to nontradables and non-product specific assistance.
b. NRAs including products specific input subsidies.
c. The Relative Rate of Assistance (RRA) is defined as $100*[(100+NRAag^t)/$
$(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural sectors, respectively.

Appendix Table 13 (continued): Annual distortion estimates, Lithuania, 1992 to 2007
(c) Value shares of primary production of covered[a] and non-covered products,
(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Oilseed	Pigmeat	Potato	Poultry	Rye	Sugar	Tomato	Wheat	Non-covered
1992	4	15	2	na	26	0	0	8	na	2	2	6	na	5	29
1993	5	14	2	na	21	0	0	6	na	1	2	8	na	5	36
1994	5	12	2	na	22	0	0	6	na	2	2	6	na	4	39
1995	5	7	2	na	19	0	0	7	na	1	1	8	na	5	44
1996	9	7	2	na	18	1	0	6	na	2	2	8	na	8	37
1997	7	7	2	na	18	0	0	8	na	1	2	9	na	8	36
1998	6	6	2	na	18	1	1	7	na	2	2	9	na	7	41
1999	5	7	2	na	21	0	2	6	na	2	1	7	na	6	41
2000	7	6	2	na	22	0	1	6	na	2	2	8	na	9	36
2001	5	3	3	na	25	0	1	6	na	2	1	8	na	8	38
2002	6	3	3	na	23	1	2	7	na	2	1	10	na	9	34
2003	6	4	4	na	19	1	2	7	na	2	1	7	na	9	40
2004	6	4	3	na	23	1	1	7	na	2	na	9	na	9	36
2005	10	4	5	0	6	1	4	7	8	2	na	1	0	14	37
2006	9	5	6	0	8	1	5	7	8	2	na	1	0	11	37
2007	13	2	2	0	8	1	6	4	6	1	na	0	0	18	37

a. At farmgate undistorted prices.

Appendix Table 13 (continued): Annual distortion estimates, Lithuania, 1992 to 2007
(d) Trade status[a] of covered products

	Barley	Beef	Egg	Maize	Milk	Oat	Oilseed	Pigmeat	Potato	Poultry	Rye	Sugar	Tomato	Wheat
1992	M	X	X	na	X	M	M	M	na	X	M	M	na	M
1993	M	X	X	na	X	M	M	M	na	X	M	M	na	M
1994	X	X	X	na	X	M	X	M	na	X	M	X	na	X
1995	M	X	X	na	X	M	X	X	na	X	X	M	na	M
1996	M	X	X	na	X	M	X	X	na	M	M	M	na	M
1997	M	X	X	na	X	M	X	X	na	M	M	M	na	X
1998	M	X	X	na	X	M	X	X	na	M	X	M	na	X
1999	M	X	X	na	X	M	X	M	na	M	X	X	na	X
2000	M	X	M	na	X	M	X	M	na	M	X	X	na	X
2001	M	X	M	na	X	M	X	M	na	M	X	X	na	X
2002	M	X	X	na	X	M	X	M	na	M	M	X	na	X
2003	M	X	X	na	X	M	X	M	na	M	M	M	na	X
2004	M	X	X	na	X	M	X	M	na	M	na	X	na	X
2005	M	X	X	X	X	M	X	M	X	M	na	X	X	X
2006	M	X	X	X	X	M	X	M	X	M	na	X	X	X
2007	M	X	X	X	X	M	X	M	X	M	na	X	X	X

Sources: Ciaian and Swinnen (2007) and OECD (2007)
a. Exportable (X), import-competing (M) and nontradables (H).
b. Trade status is endogenously determined where the NRA is based on OECD information

Appendix Table 14: Annual distortion estimates, Poland, 1992 to 2007
(a) Nominal rates of assistance[a] to covered products

(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Other oilseed	Other grains	Pigmeat	Potato	Poultry	Sheep meat	Soybean	Sugar	Sunflower	Tomato	Wheat	All covered
1992	na	15	73	40	17	na	16	3	-32	na	59	10	na	26	na	na	10	-4
1993	na	5	64	33	19	na	23	26	-7	na	33	4	na	14	na	na	23	14
1994	na	16	92	29	5	na	38	9	9	na	66	22	na	18	na	na	11	19
1995	na	13	94	24	18	na	12	5	-12	na	48	19	na	20	na	na	9	10
1996	na	46	68	23	23	na	25	26	-16	na	54	11	na	35	na	na	28	17
1997	na	29	59	28	34	na	9	25	-14	na	32	11	na	29	na	na	22	17
1998	na	19	109	30	52	na	15	23	13	na	41	9	na	42	na	na	30	33
1999	na	-12	98	0	39	na	11	24	18	na	30	-52	na	43	na	na	15	27
2000	na	-34	55	-4	35	na	26	29	-18	na	12	-48	na	63	na	na	23	13
2001	na	-30	18	7	35	na	11	6	-14	na	9	-12	na	40	na	na	19	10
2002	na	-39	6	13	36	na	7	5	-20	na	10	-12	na	49	na	na	15	7
2003	na	-44	-14	9	28	na	17	15	-29	na	2	-1	na	52	na	na	6	0
2004	na	-125	0	-25	87	na	na	na	36	na	103	47	na	193	na	na	0	39
2005	0	109	0	19	33	24	na	na	19	10	69	54	0	168	0	0	0	22
2006	0	81	0	11	25	0	na	na	14	10	69	74	0	62	0	0	0	17
2007	0	66	0	21	0	0	na	na	18	10	100	68	0	99	0	0	0	12

a. NRA estimates are taken from authors' calculations where available, and are supplemented with estimates based on OECD PSE values.

Appendix Table 14 (continued): Annual distortion estimates, Poland, 1992 to 2007
(b) Nominal and relative rates of assistance to all[a] agricultural products, to exportable[b] and import-competing [b] agricultural industries, and relative[c] to non-agricultural industries   (percent)

	Total ag NRA				Ag tradables NRA				
	Covered products		Non-covered products	All products (incl NPS)	Export-ables	Import-competing	All	Non-ag tradables NRA	RRA
	Inputs	Outputs							
1992	3	-7	-4	-2	-24	23	-2	10	-10
1993	3	11	12	14	na	12	14	10	4
1994	3	16	16	18	20	16	18	10	8
1995	2	8	8	9	-7	19	9	6	3
1996	2	15	16	18	4	36	17	8	8
1997	3	13	14	18	7	28	18	7	10
1998	4	29	30	34	17	43	34	5	27
1999	3	24	25	27	16	38	27	3	23
2000	3	10	11	13	-11	32	13	3	10
2001	2	8	8	10	-8	23	10	2	7
2002	2	5	5	8	4	9	7	3	4
2003	2	-2	-3	0	-16	24	-2	2	-3
2004	0	39	58	21	46	-3	39	3	35
2005	0	22	33	18	26	3	22	3	19
2006	0	17	25	16	19	1	17	3	14
2007	0	12	18	11	14	2	12	3	9

a. NRAs including assistance to nontradables and non-product specific assistance.
b. NRAs including products specific input subsidies.
c. The Relative Rate of Assistance (RRA) is defined as $100*[(100+NRAag^t)/$
$(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural sectors, respectively.

Appendix Table 14 (continued): Annual distortion estimates, Poland, 1992 to 2007
(c) Value shares of primary production of covered[a] and non-covered products,
(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Oilseed	Other grains	Pigmeat	Potato	Poultry	Sheep meat	Soybean	Sugar	Sunflower	Tomato	Wheat	Non-covered
1992	na	5	2	0	13	na	1	5	33	na	3	1	na	1	na	na	7	30
1993	na	5	2	0	12	na	1	6	21	na	2	0	na	2	na	na	8	41
1994	na	5	3	0	13	na	1	5	21	na	3	0	na	2	na	na	7	40
1995	na	5	2	0	11	na	2	6	19	na	2	0	na	2	na	na	7	45
1996	na	5	2	0	11	na	1	7	22	na	3	0	na	2	na	na	9	38
1997	na	6	2	0	12	na	1	7	22	na	3	0	na	1	na	na	8	36
1998	na	7	2	0	12	na	2	7	21	na	3	0	na	1	na	na	8	35
1999	na	5	2	1	14	na	2	6	18	na	4	0	na	1	na	na	8	38
2000	na	3	3	1	13	na	1	5	17	na	3	0	na	1	na	na	7	46
2001	na	2	3	1	13	na	1	6	17	na	4	0	na	1	na	na	7	44
2002	na	3	3	1	12	na	1	6	17	na	4	0	na	1	na	na	7	44
2003	na	3	3	1	12	na	1	5	17	na	4	0	na	1	na	na	6	45
2004	na	3	3	1	14	na	na	na	19	na	4	0	na	1	na	na	7	45
2005	3	2	4	1	6	1	na	na	15	8	3	0	0	1	0	1	7	45
2006	3	2	4	1	6	1	na	na	14	10	3	0	0	1	0	1	6	45
2007	4	1	3	1	8	1	na	na	9	10	2	0	0	1	0	1	9	45

a. At farmgate undistorted prices.

Appendix Table 14 (continued): Annual distortion estimates, Poland, 1992 to 2007
(d) Trade status[a] of covered products

	Barley	Beef	Egg	Maize	Milk	Oat	Other Oilseed	Other grains	Pigmeat	Potato	Poultry	Sheep meat	Soybean	Sugar	Sunflower	Tomato	Wheat
1992	na	M	M	M	M	na	X	X	X	na	M	X	na	X	na	na	M
1993	na	M	M	M	M	na	M	M	M	na	M	M	na	M	na	na	M
1994	na	X	M	M	M	na	X	M	M	na	M	M	na	X	na	na	M
1995	na	X	M	M	M	na	M	M	X	na	M	X	na	M	na	na	M
1996	na	X	M	M	X	na	X	M	X	na	M	X	na	M	na	na	M
1997	na	X	M	M	X	na	M	M	X	na	M	X	na	X	na	na	M
1998	na	X	M	M	M	na	X	M	X	na	X	X	na	M	na	na	M
1999	na	X	M	M	M	na	M	M	X	na	X	X	na	X	na	na	X
2000	na	X	M	M	M	na	X	M	X	na	X	X	na	X	na	na	M
2001	na	X	X	M	M	na	M	M	X	na	X	X	na	M	na	na	M
2002	na	X	X	M	X	na	X	M	X	na	X	M	na	X	na	na	X
2003	na	X	X	M	M	na	M	M	X	na	X	M	na	M	na	na	X
2004	na	X	X	M	X	na	na	na	X	na	X	X	na	X	na	na	M
2005	na	X	X	M	X	X	na	na	X	X	X	X	X	X	X	X	M
2006	X	X	X	M	X	X	na	na	X	X	X	X	X	X	X	X	M
2007	X	X	X	M	X	X	na	na	X	X	X	X	X	X	X	X	M

Sources: Ciaian and Swinnen (2007) and OECD (2007)
a. Exportable (X), import-competing (M) and nontradables (H).
b. Trade status is endogenously determined where the NRA is based on OECD information

Appendix Table 15: Annual distortion estimates, Romania, 1992 to 2007
(a) Nominal rates of assistance[a] to covered products

(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Potato	Poultry	Rapeseed	Rice	Sheepmeat	Soybean	Sugar	Sunflower	Tomato	Wheat	Wine	All covered
1992	-11	33	7	15	-8	-24	-1	na	37	-31	na	-11	24	131	-15	na	33	na	15
1993	100	-15	30	67	35	21	19	na	22	16	na	-58	89	172	-5	na	49	na	34
1994	50	-28	47	15	65	-5	29	na	57	-39	na	-48	45	160	-12	na	56	na	39
1995	-10	-26	71	-8	62	-1	21	na	40	-45	na	-20	20	100	-16	na	-2	na	20
1996	20	-32	40	2	68	14	11	na	31	-45	na	-41	22	125	-5	na	23	na	26
1997	-4	-35	62	6	63	25	-26	na	33	-52	na	-56	0	113	-22	na	-4	na	5
1998	24	52	112	8	147	49	54	na	101	-36	na	19	-15	127	-20	na	16	na	57
1999	16	-3	87	18	75	56	27	na	56	-19	na	-40	-9	181	-22	na	26	na	33
2000	14	-16	17	23	79	102	4	na	45	-4	na	-46	-4	141	-2	na	48	na	33
2001	36	84	74	68	94	124	54	na	130	-4	na	-3	28	90	-16	na	54	na	71
2002	16	93	46	7	88	13	64	na	192	3	na	-11	19	173	-23	na	18	na	49
2003	73	37	22	75	126	124	11	na	146	4	na	-20	-7	228	-29	na	61	na	61
2004	60	7	101	79	143	68	40	na	167	-2	na	-25	-2	293	-5	na	36	na	70
2005	27	60	163	26	49	55	109	na	56	7	na	-75	-9	294	-5	na	16	na	47
2006	14	43	120	4	66	41	99	na	88	1	na	-73	-12	157	-4	na	-10	na	37
2007	0	66	0	21	0	0	18	10	100	0	1	68	0	99	0	0	0	1	11

a. NRA estimates are taken from authors' calculations where available, and are supplemented with estimates based on OECD PSE values.

Appendix Table 15 (continued): Annual distortion estimates, Romania, 1992 to 2007
(b) Nominal and relative rates of assistance to all[a] agricultural products, to exportable[b] and import-competing [b] agricultural industries, and relative[c] to non-agricultural industries   (percent)

	Total ag NRA				Ag tradables NRA				
	Covered products		Non-covered products	All products (incl NPS)	Export-ables	Import-competing	All	Non-ag tradables NRA	RRA
	Inputs	Outputs							
1992	6	9	10	11	7	11	12	11	1
1993	6	29	34	33	9	46	36	11	22
1994	12	26	30	30	4	41	32	11	19
1995	7	13	14	16	2	30	16	11	5
1996	10	16	18	18	7	31	20	11	8
1997	2	2	4	5	-4	22	6	11	-5
1998	2	55	56	58	6	90	59	11	43
1999	2	30	33	34	10	50	35	8	26
2000	4	30	33	34	10	38	36	8	26
2001	4	66	69	68	5	74	70	8	57
2002	1	48	50	50	5	85	51	8	40
2003	3	58	62	61	-26	70	63	8	51
2004	6	63	68	69	56	71	44	3	40
2005	0	47	57	45	13	68	21	3	17
2006	0	37	44	15	-21	46	14	3	11
2007	0	11	13	8	7	14	9	3	6

a. NRAs including assistance to nontradables and non-product specific assistance.
b. NRAs including products specific input subsidies.
c. The Relative Rate of Assistance (RRA) is defined as $100*[(100+NRAag^t)/$
$(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural sectors, respectively.

Appendix Table 15 (continued): Annual distortion estimates, Romania, 1992 to 2007
(c) Value shares of primary production of covered[a] and non-covered products,
(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Potato	Poultry	Rapeseed	Rice	Sheepmeat	Soybean	Sugar	Sunflower	Tomato	Wheat	Wine	Non-covered
1992	2	6	4	10	8	1	18	Na	6	0	na	3	0	0	2	na	4	na	36
1993	2	6	3	11	7	1	12	na	4	0	na	3	0	0	2	na	7	na	41
1994	2	7	3	12	8	1	10	na	3	0	na	3	0	0	2	na	6	na	43
1995	2	5	3	12	8	0	10	na	3	0	na	2	0	0	2	na	9	na	42
1996	2	5	4	16	9	0	11	na	4	0	na	2	0	0	3	na	4	na	40
1997	2	5	3	15	8	0	14	na	3	0	na	2	0	0	2	na	9	na	37
1998	1	4	4	12	10	0	12	na	4	0	na	2	1	0	4	na	7	na	39
1999	1	4	3	14	10	0	8	na	4	0	na	2	0	0	4	na	5	na	44
2000	1	4	4	8	13	0	9	na	3	0	na	3	0	0	2	na	7	na	45
2001	2	3	4	14	13	0	10	na	3	0	na	2	0	0	3	na	11	na	34
2002	2	3	4	14	12	1	8	na	3	0	na	2	0	0	4	na	6	na	41
2003	1	3	5	14	10	0	8	na	3	0	na	3	1	0	5	na	4	na	44
2004	1	4	4	15	8	0	7	na	2	0	na	3	1	0	4	na	9	na	43
2005	1	4	3	8	7	0	6	na	2	0	na	2	1	0	3	na	6	na	58
2006	1	3	3	9	9	0	5	na	1	0	na	2	1	0	3	na	6	na	58
2007	2	2	5	7	13	1	6	8	2	2	0	2	1	0	3	5	9	9	24

a. At farmgate undistorted prices.

Appendix Table 15 (continued): Annual distortion estimates, Romania, 1992 to 2007
(d) Trade status[a] of covered products

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Potato	Poultry	Rapeseed	Rice	Sheep meat	Soybean	Sugar	Sunflower	Tomato	Wheat	Wine
1992	M	X	X	M	M	M	X	na	M	X	na	M	M	M	M	na	M	na
1993	M	X	X	M	M	M	X	na	M	X	na	M	M	M	X	na	M	na
1994	M	X	M	M	M	X	X	na	M	X	na	M	M	M	X	na	M	na
1995	M	M	M	X	M	X	X	na	M	X	na	M	M	M	X	na	X	na
1996	X	M	M	X	M	X	X	na	M	X	na	M	M	M	X	na	X	na
1997	X	M	X	X	M	M	X	na	M	X	na	M	M	M	X	na	X	na
1998	M	M	M	X	M	M	M	na	M	X	na	X	X	M	X	na	X	na
1999	M	M	M	X	M	M	M	na	M	X	na	X	X	M	X	na	X	na
2000	M	M	M	X	M	M	M	na	M	X	na	X	X	M	X	na	M	na
2001	X	M	M	M	M	M	M	na	M	X	na	X	M	M	X	na	M	na
2002	X	M	M	X	M	M	M	na	M	X	na	X	M	M	X	na	X	na
2003	M	M	M	M	M	M	M	na	M	X	na	X	M	M	X	na	M	na
2004	M	M	M	X	M	M	M	na	M	X	na	X	M	M	X	na	M	na
2005	M	M	M	X	M	M	M	na	M	X	na	X	M	M	X	na	M	na
2006	X	M	M	M	M	M	M	na	M	X	na	X	M	M	X	na	M	na
2007	X	M	M	M	M	M	M	X	M	X	X	X	M	M	X	X	M	X

Sources: Ciaian and Swinnen (2007) and OECD (2007)
a. Exportable (X), import-competing (M) and nontradables (H).
b. Trade status is endogenously determined where the NRA is based on OECD information

Appendix Table 16: Annual distortion estimates, Russia, 1992 to 2005
(a) Nominal rates of assistance[a] to covered products

(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Poultry	Rye	Sugar	Sunflower	Wheat	All covered
1992	6	-73	-64	-34	-55	-32	-70	-57	-25	16	-40	-46	-34
1993	-14	-50	-38	-3	-29	-28	-11	-9	-29	96	-51	-20	-8
1994	-12	-42	10	95	-3	-12	20	27	1	65	-17	-11	22
1995	-37	-30	50	47	63	-16	32	49	25	63	-6	-11	35
1996	-2	-8	31	62	63	28	27	55	38	93	-22	5	36
1997	0	51	46	43	79	16	46	71	27	105	-26	7	45
1998	-10	0	29	12	52	-5	46	31	-12	88	-30	-21	26
1999	-41	-19	6	-14	24	-33	39	12	-23	7	-33	-28	3
2000	-16	18	-17	9	11	-7	3	51	30	22	-34	-21	4
2001	-17	48	-1	35	9	-38	46	110	-8	42	2	-10	18
2002	-25	72	-8	-19	40	-66	59	73	-44	71	-22	-21	24
2003	-22	47	-32	-14	43	-57	31	46	-41	85	-22	-8	17
2004	-12	20	5	-24	40	-29	42	79	11	98	9	3	26
2005	-11	9	0	-34	3	-25	61	100	-11	59	na	-10	11

a. NRA estimates are taken from authors' calculations where available, and are supplemented with estimates based on OECD PSE values.

Appendix Table 16 (continued): Annual distortion estimates, Russia, 1992 to 2005
(b) Nominal and relative rates of assistance to all[a] agricultural products, to exportable[b] and import-competing [b] agricultural industries, and
relative[c] to non-agricultural industries   (percent)

	Total ag NRA				Ag tradables NRA				
	Covered products		Non-covered products	All products (incl NPS)	Export-ables	Import-competing	All	Non-ag tradables NRA	RRA
	Inputs	Outputs							
1992	14	-49	-48	-45	-50	-48	-45	2	-46
1993	19	-27	-27	-20	-26	-27	-20	8	-25
1994	31	-8	-8	9	-11	-7	9	9	-1
1995	21	14	14	24	-24	19	24	9	14
1996	13	23	23	29	-22	25	29	10	17
1997	7	38	38	42	-6	44	42	12	27
1998	6	19	19	26	-30	22	26	12	13
1999	6	-3	-3	1	-10	-2	1	12	-10
2000	4	0	0	3	-22	2	3	12	-7
2001	5	12	13	17	-14	27	17	9	7
2002	7	16	16	19	-29	43	19	9	9
2003	6	11	11	14	-16	23	14	9	4
2004	4	22	22	25	0	32	14	9	5
2005	0	11	17	13	-8	21	6	9	-3

a. NRAs including assistance to nontradables and non-product specific assistance.
b. NRAs including products specific input subsidies.
c. The Relative Rate of Assistance (RRA) is defined as $100*[(100+NRAag^t)/$
$(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural
sectors, respectively.

Appendix Table 16 (continued): Annual distortion estimates, Russia, 1992 to 2004
(c) Value shares of primary production of covered[a] and non-covered products,
(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Poultry	Rye	Sugar	Sunflower	Wheat	Non-covered
1992	7	12	5	1	13	4	9	3	4	1	2	16	23
1993	5	15	6	1	14	3	7	4	3	1	2	12	28
1994	5	15	6	0	14	3	6	3	1	1	2	8	37
1995	4	14	4	0	14	2	6	3	1	1	3	9	38
1996	5	12	5	0	14	2	6	2	2	1	2	12	37
1997	6	8	5	1	14	2	7	3	2	1	2	15	35
1998	2	11	6	0	16	1	6	3	1	1	2	9	41
1999	3	9	5	0	16	1	5	3	1	1	3	11	41
2000	4	6	6	1	17	1	6	2	1	1	2	13	39
2001	5	7	6	0	17	3	7	2	2	1	1	14	35
2002	4	6	6	1	15	3	6	3	2	1	3	12	38
2003	5	6	8	1	15	2	6	3	1	1	3	10	40
2004	5	8	6	1	15	2	6	3	1	1	3	13	36

a. At farmgate undistorted prices.

Appendix Table 16 (continued): Annual distortion estimates, Russia, 1992 to 2005
(d) Trade status[a] of covered products

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Poultry	Rye	Sugar	Sunflower	Wheat
1992	M	M	X	M	M	X	M	M	M	M	M	M
1993	X	M	M	M	M	X	M	M	X	M	X	M
1994	X	M	M	M	M	X	M	M	X	M	X	M
1995	X	M	M	M	M	M	M	M	M	M	X	M
1996	M	M	M	M	M	M	M	M	M	M	X	M
1997	X	M	M	M	M	M	M	M	M	M	X	M
1998	M	M	M	M	M	M	M	M	M	M	X	M
1999	M	M	X	M	M	M	M	M	M	M	X	M
2000	X	M	M	M	M	M	M	M	M	M	X	M
2001	X	M	M	M	M	X	M	M	M	M	X	X
2002	X	M	M	M	M	X	M	M	X	M	X	X
2003	X	M	M	M	M	M	M	M	X	M	X	X
2004	X	M	M	M	M	M	M	M	M	M	X	X
2005	X	M	M	M	M	M	M	M	M	M	na	X

Sources: Liefert and Liefert (2007) and OECD (2007)
a. Exportable (X), import-competing (M) and nontradables (H).
b. Trade status is endogenously determined where the NRA is based on OECD information

Appendix Table 17: Annual distortion estimates, Slovakia, 1992 to 2007
(a) Nominal rates of assistance[a] to covered products

(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Potato	Poultry	Rapeseed	Rye	Soybean	Sugar	Sunflower	Tomato	Wheat	Wine	All covered
1992	5	72	35	42	48	-19	-1	na	59	17	14	na	72	11	na	5	na	45
1993	57	12	28	32	70	-3	15	na	62	-4	11	na	44	-7	na	24	na	45
1994	41	14	27	13	48	5	23	na	50	-27	32	na	24	-21	na	17	na	35
1995	-5	15	37	9	34	6	20	na	53	-5	29	na	19	-1	na	-18	na	22
1996	-20	6	17	-5	31	2	10	na	48	-12	1	na	25	-1	na	-25	na	13
1997	3	4	36	6	57	63	14	na	42	-12	21	na	36	2	na	-7	na	28
1998	47	0	50	-4	95	45	50	na	58	-17	62	na	53	-14	na	18	na	52
1999	4	3	46	-11	67	35	71	na	34	3	50	na	43	-6	na	7	na	45
2000	-3	9	42	3	45	47	44	na	47	12	60	na	55	24	na	11	na	50
2001	-8	9	23	-9	35	23	36	na	44	-7	22	na	26	-15	na	-4	na	30
2002	22	2	20	-18	69	-5	45	na	57	-11	-11	na	24	-14	na	-2	na	37
2003	-1	17	13	-1	79	10	41	na	59	-9	16	na	52	4	na	0	na	44
2004	0	-125	0	-25	87	1	36	na	103	0	na	na	193	0	na	0	na	22
2005	0	109	0	19	33	24	19	10	69	0	na	0	168	0	0	0	2	21
2006	0	81	0	11	25	0	14	10	69	0	na	0	62	0	0	0	1	15
2007	0	66	0	21	0	0	18	10	100	0	na	0	99	0	0	0	1	10

a. NRA estimates are taken from authors' calculations where available, and are supplemented with estimates based on OECD PSE values.

Appendix Table 17 (continued): Annual distortion estimates, Slovakia, 1992 to 2007
(b) Nominal and relative rates of assistance to all[a] agricultural products, to exportable[b] and import-competing[b] agricultural industries, and
relative[c] to non-agricultural industries   (percent)

	Total ag NRA				Ag tradables NRA				
	Covered products		Non-covered products	All products (incl NPS)	Export-ables	Import-competing	All	Non-ag tradables NRA	RRA
	Inputs	Outputs							
1992	21	24	24	30	24	25	30	na	na
1993	14	31	31	35	41	23	35	na	na
1994	10	25	25	30	30	21	30	na	na
1995	9	13	13	17	7	20	17	na	na
1996	9	4	4	7	-3	14	7	na	na
1997	12	16	16	19	15	17	19	na	na
1998	15	38	38	43	36	40	43	na	na
1999	14	31	31	36	21	43	36	na	na
2000	19	31	31	35	28	32	35	na	na
2001	13	17	17	20	12	20	20	na	na
2002	13	24	24	30	18	34	30	21	7
2003	14	30	30	35	30	29	35	21	11
2004	0	22	30	17	44	8	21	5	15
2005	0	21	28	22	16	26	18	5	12
2006	0	15	20	18	11	19	12	5	7
2007	0	10	14	13	5	16	8	5	3

a. NRAs including assistance to nontradables and non-product specific assistance.
b. NRAs including products specific input subsidies.
c. The Relative Rate of Assistance (RRA) is defined as $100*[(100+NRAag^t)/$
$(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural sectors, respectively.

Appendix Table 17 (continued): Annual distortion estimates, Slovakia, 1992 to 2007
(c) Value shares of primary production of covered[a] and non-covered products,
(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Potato	Poultry	Rapeseed	Rye	Soybean	Sugar	Sunflower	Tomato	Wheat	Wine	Non-covered
1992	6	7	5	4	12	0	23	na	3	1	0	na	2	1	na	12	na	24
1993	5	10	5	5	12	0	21	na	3	1	1	na	2	1	na	12	na	22
1994	5	8	5	4	12	0	19	na	3	2	1	na	2	1	na	15	na	25
1995	5	7	4	4	12	0	18	na	3	2	0	na	2	1	na	15	na	27
1996	5	6	4	6	10	0	17	na	3	2	0	na	2	1	na	14	na	28
1997	6	7	4	5	10	0	19	na	4	3	1	na	2	1	na	14	na	24
1998	5	9	4	5	10	0	17	na	5	2	1	na	2	2	na	13	na	24
1999	6	8	3	7	13	0	14	na	6	4	0	na	2	2	na	9	na	25
2000	4	7	4	4	16	0	17	na	6	2	0	na	2	2	na	10	na	26
2001	5	4	4	5	14	0	15	na	6	4	1	na	2	2	na	14	na	23
2002	6	5	4	7	13	0	14	na	5	5	1	na	2	3	na	12	na	23
2003	8	5	5	5	13	0	14	na	5	1	0	na	2	5	na	8	na	28
2004	5	5	4	5	13	0	13	na	5	3	na	na	2	3	na	20	na	24
2005	6	4	3	7	10	0	11	2	4	4	na	0	1	4	2	13	4	24
2006	6	4	5	7	9	0	10	3	4	5	na	0	2	4	2	13	3	24
2007	9	3	5	5	7	0	8	3	3	7	na	0	0	3	1	19	3	24

a. At farmgate undistorted prices.

Appendix Table 17 (continued): Annual distortion estimates, Slovakia, 1992 to 2007
(d) Trade status[a] of covered products

	barley	beef	egg	maize	milk	oat	pigmeat	potato	poultry	rapeseed	rye	soybean	sugar	sunflower	tomato	wheat	wine
1992	X	M	M	X	X	X	M	na	M	X	M	na	M	X	na	X	na
1993	X	X	M	X	X	X	M	na	M	M	M	na	M	X	na	M	na
1994	X	X	X	X	X	M	M	na	M	M	M	na	M	X	na	M	na
1995	X	M	X	X	X	M	M	na	M	M	M	na	M	X	na	X	na
1996	X	M	X	X	X	X	M	na	M	X	M	na	M	X	na	X	na
1997	X	M	X	X	X	X	M	na	M	X	M	na	M	X	na	X	na
1998	X	M	M	X	X	M	M	na	M	X	M	na	M	X	na	X	na
1999	X	M	M	X	X	X	M	na	M	X	M	na	M	X	na	X	na
2000	X	M	M	X	X	X	M	na	M	X	M	na	M	X	na	M	na
2001	X	M	M	X	X	M	M	na	M	X	M	na	M	X	na	M	na
2002	X	M	M	X	X	M	M	na	M	X	X	na	M	X	na	X	na
2003	X	M	X	X	X	X	M	na	M	M	X	na	M	X	na	M	na
2004	X	M	M	X	X	X	M	na	M	X	na	na	X	X	na	M	na
2005	X	M	M	X	X	X	M	X	M	X	na	X	X	X	X	M	X
2006	X	M	M	X	X	X	M	X	M	X	na	X	X	X	X	M	X
2007	X	M	M	X	X	X	M	X	M	X	na	X	X	X	X	M	X

Sources: Ciaian and Swinnen (2007) and OECD (2007)

a. Exportable (X), import-competing (M) and nontradables (H).

b. Trade status is endogenously determined where the NRA is based on OECD information

Appendix Table 18: Annual distortion estimates, Slovenia, 1992 to 2007
(a) Nominal rates of assistance[a] to covered products

(percent)

	Barley	Beef	Egg	Maize	Milk	Pigmeat	Poultry	Sheep meat	Sugar	Wheat	All covered
1992	81	62	47	54	101	23	110	193	126	91	64
1993	116	34	23	41	102	42	93	105	136	91	57
1994	85	41	25	23	108	41	95	98	84	82	58
1995	31	68	60	11	91	38	110	243	75	49	62
1996	31	62	42	11	77	19	87	138	76	38	48
1997	56	97	41	-4	102	25	71	117	79	44	59
1998	75	112	66	4	169	56	74	151	111	94	89
1999	58	115	65	13	142	82	91	122	156	107	98
2000	62	110	27	32	85	42	69	80	83	95	69
2001	93	144	10	24	79	33	61	83	74	72	65
2002	107	152	29	3	108	33	74	72	87	81	73
2003	79	147	0	48	117	38	82	81	139	77	82
2004	0	-125	0	-25	87	36	103	47	193	na	29
2005	0	109	0	19	33	19	69	54	168	0	40
2006	0	81	0	11	25	14	69	74	62	0	32
2007	0	66	0	21	0	18	100	68	99	0	29

a. NRA estimates are taken from authors' calculations where available, and are supplemented with estimates based on OECD PSE values.

Appendix Table 18 (continued): Annual distortion estimates, Slovenia, 1992 to 2007
(b) Nominal and relative rates of assistance to all[a] agricultural products, to exportable[b] and import-competing [b] agricultural industries, and relative[c] to non-agricultural industries   (percent)

| | Total ag NRA | | | | Ag tradables NRA | | | | |
| | Covered products | | Non-covered products | All products (incl NPS) | Export-ables | Import-competing | All | Non-ag tradables NRA | RRA |
	Inputs	Outputs							
1992	9	55	64	68	83	37	68	na	na
1993	6	51	57	60	61	51	60	na	na
1994	4	54	58	61	90	42	61	na	na
1995	5	57	62	66	92	46	66	na	na
1996	6	42	48	51	74	35	51	na	na
1997	7	51	59	63	87	23	63	na	na
1998	9	80	89	95	124	53	95	na	na
1999	12	86	98	106	122	66	106	11	84
2000	16	53	69	76	81	61	76	11	58
2001	19	46	65	71	91	35	71	10	56
2002	22	51	73	80	111	33	80	1	77
2003	25	58	82	92	105	47	92	2	89
2004	0	29	29	22	37	20	27	4	22
2005	0	40	40	37	60	17	38	4	33
2006	0	32	32	31	50	11	31	4	26
2007	0	29	29	27	40	15	27	4	22

a. NRAs including assistance to nontradables and non-product specific assistance.
b. NRAs including products specific input subsidies.
c. The Relative Rate of Assistance (RRA) is defined as $100*[(100+NRAag^t)/(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural sectors, respectively.

Appendix Table 18 (continued): Annual distortion estimates, Slovenia, 1992 to 2007
(c) Value shares of primary production of covered[a] and non-covered products,
(percent)

	Barley	Beef	Egg	Maize	Milk	Pigmeat	Poultry	Sheep meat	Sugar	Wheat	Non-covered
1992	0	13	4	3	11	19	9	0	0	3	38
1993	0	17	4	5	10	15	6	0	0	3	40
1994	1	14	3	6	10	13	5	0	1	3	44
1995	1	13	3	6	12	15	5	0	1	3	41
1996	1	11	3	6	11	15	5	0	1	3	44
1997	1	11	3	6	10	14	7	0	1	3	44
1998	1	11	3	7	11	14	8	0	1	3	42
1999	1	12	3	7	15	12	7	0	1	2	41
2000	1	9	4	5	17	13	7	0	1	3	41
2001	1	8	4	4	17	17	7	1	0	3	39
2002	1	7	3	7	16	13	6	1	0	2	44
2003	1	9	4	4	16	15	8	1	0	2	41
2004	1	11	5	7	22	19	9	1	1	na	24
2005	1	10	5	7	21	19	9	1	1	3	24
2006	1	10	5	7	21	19	9	1	1	3	24
2007	1	10	5	7	21	19	9	1	1	3	24

a. At farmgate undistorted prices.

Appendix Table 18 (continued): Annual distortion estimates, Slovenia, 1992 to 2007
(d) Trade status[a] of covered products

	Barley	Beef	Egg	Maize	Milk	Pigmeat	Poultry	Sheep meat	Sugar	Wheat
1992	M	X	X	M	X	M	X	M	M	M
1993	M	X	X	M	X	M	X	M	M	M
1994	M	M	X	M	X	M	X	M	M	M
1995	M	M	X	M	X	M	X	M	M	M
1996	M	M	X	M	X	M	X	M	M	M
1997	M	X	X	M	X	M	X	M	M	M
1998	M	X	M	M	X	M	X	M	M	M
1999	M	X	M	M	X	M	X	M	M	M
2000	M	M	M	M	X	M	X	M	M	M
2001	M	X	M	M	X	M	X	M	M	M
2002	M	X	M	M	X	M	X	M	M	M
2003	M	X	X	M	X	M	X	M	M	M
2004	M	X	M	M	X	M	X	X	M	na
2005	M	X	M	M	X	M	X	X	M	M
2006	M	X	M	M	X	M	X	X	M	M
2007	M	X	M	M	X	M	X	X	M	M

Sources: Ciaian and Swinnen (2007) and OECD (2007)

a. Exportable (X), import-competing (M) and nontradables (H).

b. Trade status is endogenously determined where the NRA is based on OECD information

Appendix Table 19: Annual distortion estimates, Turkey, 1961 to 2007
(a) Nominal rates of assistance[a] to covered products

(percent)

	Apple	Barley	Beef	Cotton	Egg	Grape	Hazelnut	Maize	Milk	Potato	Poultry	Rice	Sheepmeat	Sugar	Sunflower	Tobacco	Tomato	Wheat	All covered
1961	na	-12	na	-34	na	na	na	na	na	na	na	na	na	na	na	-62	na	-20	-26
1962	na	na	na	-25	na	na	na	na	na	na	na	na	na	na	na	-37	na	-7	-13
1963	na	-4	na	-22	na	na	na	na	na	na	na	na	na	na	na	-33	na	-7	-12
1964	na	-28	na	-23	na	na	na	na	na	na	na	na	na	na	na	-52	na	-10	-24
1965	na	na	na	-20	na	na	na	na	na	na	na	na	na	na	na	-51	na	-1	-13
1966	na	na	na	-17	na	-10	na	na	36	27	na	na	na	na	1	-44	-48	4	1
1967	-15	-44	na	-20	na	-20	na	na	61	7	na	na	na	na	-4	-44	14	-46	-23
1968	-34	na	na	-28	na	-15	na	na	70	-10	na	na	na	na	-14	-46	na	-64	-35
1969	-34	na	na	-18	na	0	na	-33	-14	6	na	na	na	na	-7	-52	-84	13	-18
1970	-29	na	na	-6	na	22	na	na	61	-5	na	na	na	na	-5	-38	-76	32	10
1971	-42	-5	na	-28	na	-8	na	-13	22	-25	na	na	na	na	-24	-44	na	-9	-10
1972	-44	23	na	-14	na	-9	na	na	59	11	na	na	na	na	1	-47	-74	-8	-8
1973	-41	na	na	1	na	2	na	na	57	11	na	na	na	na	-27	-31	-27	-56	-20
1974	-45	na	na	-10	na	6	na	na	37	22	na	na	na	na	-44	-31	13	-22	-7
1975	-52	na	na	24	na	-17	na	na	69	20	na	na	na	na	9	-32	-34	-24	-7
1976	-53	-10	na	24	na	-13	3	na	181	-8	na	na	na	na	-4	-32	-61	2	3
1977	-54	-22	na	-10	na	-4	-20	na	47	-18	na	na	na	na	-23	-33	-67	1	-13
1978	-54	-18	na	-52	na	3	-40	na	41	32	na	na	na	na	-48	-51	-20	na	-13
1979	-49	-36	na	-23	na	-2	-32	na	26	33	na	na	na	na	-70	-44	-2	na	-11
1980	-55	-39	na	-39	na	-2	-45	na	13	3	na	na	na	na	-59	-67	-35	na	-24
1981	-60	-37	na	-32	-18	-14	-55	na	-13	-29	na	na	na	na	-58	-64	-34	-18	-27
1982	-53	-45	na	-26	-31	-9	-44	-18	43	-15	na	na	na	na	-62	-68	-47	-27	-26
1983	-48	-42	na	-27	-24	-10	-85	-93	-27	-6	na	na	na	na	-64	-73	-41	-28	-49
1984	-43	-22	na	na	-20	-19	-55	-23	18	13	na	na	na	na	-60	na	-25	-31	-21
1985	-20	-24	na	na	-8	-7	-30	-25	62	31	na	10	na	na	-17	na	7	-14	1
1986	-14	47	51	-52	27	7	na	12	117	-6	31	-19	9	33	33	15	16	14	9

1987	-2	71	27	-49	17	-5	-68	24	64	40	42	-56	22	24	31	16	35	53	4
1988	3	-3	-7	-61	18	-10	-54	22	24	14	26	na	3	5	-4	-21	46	78	-5
1989	-30	18	8	-55	53	44	-36	27	43	38	36	175	22	-3	32	-10	63	62	10
1990	-13	55	54	-56	30	12	-31	52	154	60	57	324	25	24	36	7	20	33	17
1991	-26	63	128	-60	6	-2	-37	68	126	4	43	258	20	50	49	57	26	89	25
1992	-4	55	68	-53	72	31	-40	63	129	37	63	242	10	66	51	19	10	35	23
1993	-16	92	61	-25	34	16	-52	40	128	26	83	248	24	55	41	29	9	25	26
1994	-23	32	14	-43	20	35	-40	3	89	10	40	157	29	-13	10	75	-18	43	8
1995	12	9	62	-58	101	-6	-40	23	90	47	82	133	39	52	34	61	-31	4	4
1996	10	32	50	-58	51	-15	-26	34	102	75	43	144	8	56	68	82	14	21	14
1997	0	43	113	-57	53	12	-45	58	136	-2	26	108	8	119	66	58	4	46	19
1998	8	138	198	-32	84	33	-25	94	198	25	95	114	52	146	62	46	-13	87	43
1999	1	91	179	-42	78	0	-21	64	111	14	63	54	49	191	40	-4	-36	77	25
2000	3	37	145	-39	79	26	-12	46	78	32	56	100	33	125	37	-20	-1	30	23
2001	-19	5	80	-20	32	-8	-21	7	11	46	19	69	-15	41	27	-31	-16	-4	1
2002	-1	6	118	-22	36	30	7	18	56	174	47	123	9	93	7	-16	-19	15	19
2003	-1	29	195	-42	19	30	9	61	86	145	53	99	21	155	14	6	5	64	33
2004	16	37	125	-57	87	67	na	69	53	194	75	na	7	167	12	2	-20	24	24
2005	92	51	102	-45	121	44	na	68	29	315	66	na	14	136	23	16	-31	39	26
2006	89	30	92	-18	64	49	na	93	45	211	48	na	34	30	49	20	-40	33	35
2007	103	-10	79	2	79	60	na	54	4	126	50	na	44	120	31	-9	-30	44	27

a. NRA estimates are taken from authors' calculations where available, and are supplemented with estimates based on OECD PSE values.

Appendix Table 19 (continued): Annual distortion estimates, Turkey, 1961 to 2007
(b) Nominal and relative rates of assistance to all[a] agricultural products, to exportable[b]
and import-competing [b] agricultural industries, and relative[c] to non-agricultural
industries   (percent)

| | Total ag NRA | | | | Ag tradables NRA | | | | |
| | Covered products | | Non-covered products | All products (incl NPS) | Export-ables | Import-competing | All | Non-ag tradables NRA | RRA |
	Inputs	Outputs							
1961	0	-26	-26	-26	-34	-20	-26	100	-63
1962	0	-13	-13	-13	-29	-7	-13	24	-30
1963	0	-12	-12	-12	-19	-7	-12	33	-34
1964	0	-24	-24	-24	-37	-10	-24	86	-59
1965	0	-13	-13	-13	-35	-1	-13	101	-57
1966	0	1	1	1	-20	17	1	123	-55
1967	0	-23	-23	-23	-26	-21	-23	267	-79
1968	0	-35	-35	-35	-25	-40	-35	100	-68
1969	0	-18	-18	-18	-36	-4	-18	113	-62
1970	0	10	10	12	-21	43	12	75	-36
1971	0	-10	-10	-8	-22	2	-8	69	-46
1972	0	-8	-8	-6	-27	16	-6	41	-33
1973	0	-20	-20	-18	-10	-26	-18	39	-41
1974	0	-7	-7	-5	-9	-5	-5	24	-23
1975	0	-7	-7	-6	-17	1	-6	17	-20
1976	0	3	3	4	-22	40	4	20	-14
1977	0	-13	-13	-12	-31	17	-12	25	-30
1978	0	-13	-13	-12	-26	32	-12	94	-55
1979	0	-11	-11	-10	-19	9	-10	122	-60
1980	0	-24	-24	-23	-33	1	-23	52	-50
1981	0	-27	-27	-27	-35	-18	-27	42	-49
1982	0	-26	-26	-26	-38	-12	-26	24	-40
1983	0	-49	-49	-49	-49	-50	-49	23	-59
1984	0	-21	-21	-13	-23	-19	-13	23	-29
1985	0	1	1	11	-5	8	11	23	-10
1986	6	3	9	14	-4	31	14	23	-8
1987	6	-2	4	10	-9	34	10	21	-9
1988	6	-11	-5	1	-20	30	1	19	-15
1989	6	4	10	17	-4	40	17	16	0
1990	5	12	17	22	1	54	22	14	7
1991	5	19	25	31	-2	95	31	12	17
1992	6	17	23	30	4	64	30	10	18
1993	6	20	26	32	13	53	32	8	22
1994	7	1	8	15	-3	35	15	6	9
1995	7	-3	4	11	-10	39	11	4	6
1996	7	8	14	21	-1	46	21	2	18
1997	7	12	19	27	-7	81	27	2	24
1998	7	37	43	49	12	128	49	1	48
1999	6	19	25	32	-3	109	32	1	30
2000	3	20	23	26	5	67	26	1	25
2001	1	0	1	2	-8	17	2	1	1
2002	0	19	19	20	6	43	20	1	19
2003	0	33	33	34	8	90	34	1	33
2004	0	24	24	24	5	53	15	1	14
2005	0	26	26	31	11	50	18	0	17
2006	0	35	32	22	26	60	28	0	28
2007	0	27	25	18	29	25	25	0	24

a. NRAs including assistance to nontradables and non-product specific assistance.
b. NRAs including products specific input subsidies.

c. The Relative Rate of Assistance (RRA) is defined as $100*[(100+NRAag^t)/(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural sectors, respectively.

Appendix Table 19 (continued): Annual distortion estimates, Turkey, 1961 to 2007

(c) Value shares of primary production of covered[a] and non-covered products, (percent)

	Apple	Barley	Beef	Cotton	Egg	Grape	Hazelnut	Maize	Milk	Potato	Poultry	Rice	Sheepmeat	Sugar	Sunflower	To
1961	na	15	na	15	na	na	na	na	na	na	na	na	na	na	na	
1962	na	na	na	17	na	na	na	na	na	na	na	na	na	na	na	
1963	na	16	na	12	na	na	na	na	na	na	na	na	na	na	na	
1964	na	16	na	14	na	na	na	na	na	na	na	na	na	na	na	
1965	na	na	na	18	na	na	na	na	na	na	na	na	na	na	na	
1966	na	na	na	6	na	10	na	na	14	2	na	na	na	na	na	1
1967	2	7	na	4	na	7	na	na	9	2	na	na	na	na	na	1
1968	2	na	na	5	na	7	na	na	7	3	na	na	na	na	na	1
1969	2	na	na	4	na	7	na	2	18	3	na	na	na	na	na	1
1970	3	na	na	5	na	8	na	na	13	4	na	na	na	na	na	2
1971	3	5	na	7	na	8	na	2	13	4	na	na	na	na	na	2
1972	3	3	na	7	na	7	na	na	10	3	na	na	na	na	na	2
1973	3	na	na	5	na	7	na	na	9	3	na	na	na	na	na	2
1974	3	na	na	9	na	7	na	na	10	2	na	na	na	na	na	1
1975	3	na	na	4	na	7	na	na	9	2	na	na	na	na	na	1
1976	3	5	na	4	na	7	1	na	6	4	na	na	na	na	na	1
1977	3	4	na	5	na	7	2	na	9	3	na	na	na	na	na	1
1978	5	4	na	7	na	9	2	na	12	3	na	na	na	na	na	1
1979	5	6	na	5	na	8	3	na	13	3	na	na	na	na	na	3
1980	4	5	na	5	na	10	3	na	13	3	na	na	na	na	na	3
1981	3	5	na	4	2	7	3	na	12	3	na	na	na	na	na	2
1982	3	6	na	4	2	6	2	1	6	2	na	na	na	na	na	2
1983	2	3	na	3	1	4	7	9	8	2	na	na	na	na	na	2
1984	3	5	na	na	2	6	2	1	8	3	na	na	na	na	na	2
1985	2	5	na	na	2	6	1	2	8	3	na	1	na	na	na	2
1986	2	2	2	7	1	4	na	1	2	3	1	1		3	1	1
1987	1	2	3	8	1	5	5	1	2	2	1	1		3	1	1
1988	2	3	3	9	1	4	4	1	3	2	1	na		3	1	1
1989	2	2	3	10	1	4	4	1	4	2	1	0		3	2	1
1990	2	2	2	9	1	5	2	1	2	3	1	0		3	2	1
1991	3	2	2	9	1	6	2	1	3	3	1	0		3	2	1
1992	2	2	3	7	1	5	3	1	3	2	1	0		4	2	1
1993	2	2	4	4	1	5	2	1	3	3	1	0		3	2	1
1994	3	2	4	7	2	5	5	1	3	2	2	0		3	2	1
1995	2	2	3	11	1	4	3	1	3	3	1	0		2	1	1
1996	2	3	3	9	1	5	3	1	3	1	2	0		3	2	1
1997	2	3	2	10	2	3	4	1	3	3	2	0		3	2	1
1998	3	2	2	8	1	4	5	1	2	4	2	0		2	2	1
1999	3	2	2	7	1	5	4	1	3	4	2	0		2	1	1
2000	3	2	2	8	1	4	3	1	4	3	2	0		2	2	1
2001	3	3	2	6	1	4	3	1	5	2	2	0		2	1	1
2002	3	3	2	7	1	4	2	1	4	1	2	0		2	2	1
2003	3	3	2	8	2	4	2	1	4	1	2	0		2	1	1
2004	2	3	3	9	1	4	na	1	7	1	2	na		2	1	1
2005	2	3	4	7	1	4	na	1	7	1	3	na		2	1	1
2006	2	4	4	4	1	6	na	1	9	1	4	na		3	2	1
2007	2	4	3	4	1	3	na	1	11	2	4	na		3	1	1

a. At farmgate undistorted prices.

Appendix Table 19 (continued): Annual distortion estimates, Turkey, 1961 to 2007
(d) Trade status[a] of covered products

	Apple	Barley	Beef	Cotton	Egg	Grape	Hazelnut	Maize	Milk	Potato	Poultry	Rice	Sheepmeat	Sugar	Su...
1961	na	X	na	X	na	na	na	na	na	na	na	na	na	na	na
1962	na	na	na	X	na	na	na	na	na	na	na	na	na	na	na
1963	na	X	na	X	na	na	na	na	na	na	na	na	na	na	na
1964	na	X	na	X	na	na	na	na	na	na	na	na	na	na	na
1965	na	na	na	X	na	na	na	na	na	na	na	na	na	na	na
1966	na	na	na	X	na	X	na	na	M	X	na	na	na	na	na
1967	X	X	na	X	na	X	na	na	M	X	na	na	na	na	na
1968	X	na	na	X	na	X	na	na	M	X	na	na	na	na	na
1969	X	na	na	X	na	X	na	M	M	X	na	na	na	na	na
1970	X	na	na	X	na	X	na	na	M	X	na	na	na	na	na
1971	X	X	na	X	na	X	na	M	M	X	na	na	na	na	na
1972	X	X	na	X	na	X	na	na	M	X	na	na	na	na	na
1973	X	na	na	X	na	X	na	na	M	X	na	na	na	na	na
1974	X	na	na	X	na	X	na	na	M	X	na	na	na	na	na
1975	X	na	na	X	na	X	na	na	M	X	na	na	na	na	na
1976	X	X	na	X	na	X	X	na	M	X	na	na	na	na	na
1977	X	X	na	X	na	X	X	na	M	X	na	na	na	na	na
1978	X	X	na	X	na	X	X	na	M	X	na	na	na	na	na
1979	X	X	na	X	na	X	X	na	M	X	na	na	na	na	na
1980	X	X	na	X	na	X	X	na	M	X	na	na	na	na	na
1981	X	X	na	X	X	X	X	na	M	X	na	na	na	na	na
1982	X	X	na	X	X	X	X	M	M	X	na	na	na	na	na
1983	X	X	na	X	X	X	X	M	M	X	na	na	na	na	na
1984	X	X	na	na	X	X	X	M	M	X	na	na	na	na	na
1985	X	X	na	na	X	X	X	M	M	X	na	M	na	na	na
1986	X	X	M	X	X	X	na	M	M	X	X	M	X	X	M
1987	X	X	M	X	X	X	X	M	M	X	X	M	X	X	M
1988	X	X	M	X	X	X	X	M	M	X	X	na	X	X	M
1989	X	X	M	X	X	X	X	M	M	X	X	M	X	X	M
1990	X	X	M	X	X	X	X	M	M	X	X	M	X	X	M
1991	X	X	M	X	X	X	X	M	M	X	X	M	X	X	M
1992	X	X	M	X	X	X	X	M	M	X	X	M	X	X	M
1993	X	X	M	X	X	X	X	M	M	X	X	M	X	X	M
1994	X	X	M	X	X	X	X	M	M	X	X	M	X	X	M
1995	X	X	M	X	X	X	X	M	M	X	X	M	X	X	M
1996	X	X	M	X	X	X	X	M	M	X	X	M	X	X	M
1997	X	X	M	X	X	X	X	M	M	X	X	M	X	X	M
1998	X	X	M	X	X	X	X	M	M	X	X	M	X	X	M
1999	X	X	M	X	X	X	X	M	M	X	X	M	X	X	M
2000	X	X	M	X	X	X	X	M	M	X	X	M	X	X	M
2001	X	X	M	X	X	X	X	M	M	X	X	M	X	X	M
2002	X	X	M	X	X	X	X	M	M	X	X	M	X	X	M
2003	X	X	M	X	X	X	X	M	M	X	X	M	X	X	M
2004	X	X	M	X	X	X	na	M	M	X	X	na	X	X	M
2005	X	X	M	X	X	X	na	M	M	X	X	na	X	X	M
2006	X	X	M	X	X	X	na	M	M	X	X	na	X	X	X
2007	X	X	M	X	X	X	na	M	M	X	X	na	X	X	X

Sources: Burrell and Kurzweil (2007) and OECD (2007)

a. Exportable (X), import-competing (M) and nontradables (H).
b. Trade status is endogenously determined where the NRA is based on OECD information

Appendix Table 20: Annual distortion estimates, Ukraine, 1992 to 2005
(a) Nominal rates of assistance[a] to covered products

(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Potato	Poultry	Rye	Sugar	Sunflower	Wheat	All covered
1992	-59	-19	-40	-19	-49	-61	-63	na	-48	-40	12	-47	-68	-55
1993	28	41	-9	76	8	-6	-42	na	6	9	4	15	-34	-8
1994	17	-19	12	45	-34	416	-36	na	15	161	3	13	75	-13
1995	-27	-49	9	-24	-48	154	-51	na	-15	49	-49	-28	-34	-47
1996	-8	-15	92	-9	-36	34	1	-3	-1	30	181	-21	-45	-23
1997	-5	11	75	-23	-7	27	-9	-57	45	8	21	-22	104	4
1998	14	-14	88	-16	-3	-23	37	-75	70	18	-1	-31	16	-1
1999	-21	-13	42	9	-30	43	16	-65	0	41	0	-33	-16	-21
2000	-14	7	-9	-20	-35	40	1	-57	53	11	15	-29	-43	-27
2001	-18	6	-7	-6	-30	12	39	-46	44	37	28	5	-2	-11
2002	-20	-8	-30	-6	-32	3	13	21	94	-4	43	-34	-9	-20
2003	9	10	-47	14	-19	84	-30	10	66	17	63	-25	-38	-18
2004	-10	-17	-38	-25	-17	12	-6	-20	59	2	29	-9	-21	-21
2005	-13	19	24	-6	-5	31	64	na	86	-14	55	na	-1	10

a. NRA estimates are taken from authors' calculations where available, and are supplemented
with estimates based on OECD PSE values.

Appendix Table 20 (continued): Annual distortion estimates, Ukraine, 1992 to 2005
(b) Nominal and relative rates of assistance to all[a] agricultural products, to exportable[b] and import-competing [b] agricultural industries, and relative[c] to non-agricultural industries (percent)

	Total ag NRA				Ag tradables NRA				
	Covered products		Non-covered products	All products (incl NPS)	Export-ables	Import-competing	All	Non-ag tradables NRA	RRA
	Inputs	Outputs							
1992	-7	-47	-48	-46	-50	-22	-46	3	-47
1993	-8	0	0	1	-1	5	1	2	-1
1994	-8	-5	-5	-2	-7	6	-2	2	-4
1995	-8	-39	-39	-38	-39	-42	-38	2	-39
1996	-7	-16	-16	-13	-23	82	-13	2	-15
1997	-8	11	11	13	9	29	14	3	11
1998	-8	7	7	9	5	21	10	3	7
1999	-7	-14	-14	-12	-15	0	-12	4	-15
2000	-7	-20	-20	-19	-17	-27	-19	4	-22
2001	-7	-4	-4	-3	-7	35	-3	3	-6
2002	-7	-14	-14	-13	-18	64	-13	3	-16
2003	-7	-11	-11	-10	-14	4	-10	3	-13
2004	-7	-14	-14	-13	-18	43	-15	3	-18
2005	0	10	4	8	3	77	8	3	5

a. NRAs including assistance to nontradables and non-product specific assistance.
b. NRAs including products specific input subsidies.
c. The Relative Rate of Assistance (RRA) is defined as $100*[(100+NRAag^t)/(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural sectors, respectively.

Appendix Table 20 (continued): Annual distortion estimates, Ukraine, 1992 to 2004
(c) Value shares of primary production of covered[a] and non-covered products,
(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Potato	Poultry	Rye	Sugar	Sunflower	Wheat	Barley	
1992	5	11	3	2	12	1	9	na	3	1	2	3	14	5	
1993	6	10	4	3	12	1	9	na	2	1	7	3	15	6	
1994	4	11	4	2	17	0	11	na	2	0	7	2	5	4	
1995	2	8	2	2	15	0	8	na	2	0	8	3	7	2	
1996	4	11	2	2	25	1	9	0	3	1	2	3	19	4	
1997	6	10	3	6	21	1	14	0	3	1	5	4	8	6	
1998	3	13	3	2	23	1	11	0	3	1	6	6	11	3	
1999	5	11	3	2	26	1	8	0	4	0	4	7	11	5	
2000	6	8	4	4	21	1	8	0	2	1	3	5	17	6	
2001	8	8	4	3	20	1	7	0	2	1	3	3	14	8	
2002	6	7	4	3	18	1	6	0	1	1	2	7	11	6	
2003	5	7	7	7	20	1	8	0	2	0	2	8	6	5	
2004	6	5	6	6	17	1	5	0	2	1	2	5	13	6	
2005	7	5	6	4	20	0	4	na	3	0	2	na	12	7	

a. At farmgate undistorted prices.

Appendix Table 20 (continued): Annual distortion estimates, Ukraine, 1992 to 2005
(d) Trade status[a] of covered products

	Barley	Beef	Egg	Maize	Milk	Oat	Pigmeat	Potato	Poultry	Rye	Sugar	Sunflower	Wheat
1992	X	X	X	X	X	X	X	na	M	X	M	X	X
1993	X	X	X	X	X	X	X	na	M	X	M	X	X
1994	X	X	X	X	X	X	X	na	M	X	M	X	X
1995	X	X	X	X	X	X	X	na	M	X	M	X	X
1996	X	X	X	X	X	X	X	H	M	X	M	X	X
1997	X	X	X	X	X	X	X	H	M	X	M	X	X
1998	X	X	X	X	X	X	X	H	M	X	M	X	X
1999	X	X	X	X	X	X	X	H	M	X	M	X	X
2000	X	X	X	X	X	X	X	H	M	X	M	X	M
2001	X	X	X	X	X	X	X	H	M	X	M	X	X
2002	X	X	X	X	X	X	X	H	M	X	M	X	X
2003	X	X	X	X	X	X	X	H	M	X	M	X	M
2004	X	X	X	X	X	X	X	H	M	X	M	X	X
2005	X	X	X	X	X	X	X	na	M	X	M	na	X

Sources: von Cramon et al. (2007) and OECD (2007)
a. Exportable (X), import-competing (M) and nontradables (H).
b. Trade status is endogenously determined where the NRA is based on OECD information

Appendix Table 21: Annual distortion estimates, Europe's transition economies, 1992 to 2007

(a) Nominal rates of assistance to covered products

(percent)

	Apple	Barley	Beef	Cotton	Egg	Grape	Hazelnut	Maize	Milk	Oat	Oilseed	Other grains	Pigmeat	Potato
1992	-4	-7	-19	-53	-8	31	-40	6	-14	-37	17	3	-33	34
1993	-16	24	-10	-25	-4	16	-52	50	9	-22	23	26	-5	24
1994	-23	8	-20	-43	24	35	-40	14	6	16	37	9	9	6
1995	12	-21	-14	-58	53	-6	-40	-6	25	0	11	5	0	34
1996	10	4	3	-58	40	-15	-26	1	31	27	24	26	1	62
1997	0	7	34	-57	51	12	-45	-1	50	19	8	25	0	2
1998	8	47	27	-32	60	33	-25	6	62	-3	14	23	32	22
1999	1	4	14	-42	42	0	-21	8	30	-14	9	24	29	13
2000	3	0	12	-39	11	26	-12	8	18	5	26	29	2	28
2001	-19	-9	35	-20	14	-8	-21	18	12	-26	13	6	24	28
2002	-1	-10	44	-22	2	30	7	0	30	-55	9	5	22	101
2003	-1	0	51	-42	-18	30	9	38	39	-33	16	15	1	84
2004	16	5	16	-57	12	67	na	25	46	-17	0	na	34	105
2005	na	-7	30	na	18	na	na	9	8	-6	0	na	45	10
2006	89	16	78	-18	39	49	na	16	42	7	0	na	30	40
2007	103	-4	74	2	20	60	na	28	2	0	0	na	18	28

	Poultry	Rapeseed	Rice	Rye	Sheep meat	Soybean	Sugar	Sunflower	Tobacco	Tomato	Wheat	Wine	All covered
1992	2	18	242	-25	5	24	44	-24	19	10	-26	na	-12
1993	21	-3	248	-23	4	89	36	-10	29	9	-2	na	12
1994	38	-25	157	19	4	45	14	-9	75	-18	17	na	14
1995	42	-19	133	29	26	20	-1	-11	61	-31	-12	na	5
1996	38	5	144	34	-7	22	79	-7	82	14	0	na	14
1997	42	-9	108	24	-4	0	71	-10	58	4	20	na	21
1998	57	-9	114	5	32	-15	86	-14	46	-13	24	na	31
1999	33	0	54	-9	21	-9	85	-20	-4	-36	9	na	13
2000	43	4	100	27	10	-4	69	-18	-20	-1	-4	na	6
2001	53	14	69	1	-11	28	43	2	-31	-16	0	na	-89
2002	64	13	123	-37	5	19	75	-20	-16	-19	-2	na	12
2003	50	53	99	-31	11	-7	103	-18	6	5	15	na	16
2004	89	0	na	8	3	-2	114	-2	2	-20	5	na	19
2005	84	0	2	-11	-35	-6	79	-3	na	0	-5	2	18
2006	61	0	3	na	11	-9	41	7	20	-35	11	1	22
2007	72	0	1	na	49	0	114	10	-9	-24	14	1	15

Appendix Table 21 (continued): Annual distortion estimates, Europe's transition economies, 1992 to 2007

(b) Nominal and relative rates of assistance to all[a] agricultural products, to exportable[b] and import-competing [b] agricultural industries, and relative[c] to non-agricultural industries (percent)

| | Total ag NRA | | | | Ag tradables NRA | | | | |
| | Covered products | | Non-covered products | All products (incl NPS) | Export-ables | Import-competing | All | Non-ag tradables NRA | RRA |
	Inputs	Outputs							
1992	5	-17	-8	-9	-18	-5	-9	8	-16
1993	6	3	10	10	5	7	10	8	3
1994	10	3	6	12	-2	12	12	7	5
1995	7	-1	0	5	-15	19	6	6	-1
1996	6	9	14	16	-4	29	16	5	11
1997	4	17	20	24	0	44	24	6	17
1998	4	28	33	37	13	52	37	5	30
1999	4	12	16	19	2	32	19	4	14
2000	2	7	13	14	-1	19	13	5	8
2001	2	10	10	13	-6	29	13	5	7
2002	3	14	15	17	-2	44	17	5	11
2003	3	17	20	21	-3	43	19	5	13
2004	1	22	23	21	6	43	14	4	10
2005	0	17	23	18	6	31	11	4	6
2006	0	26	na	18	19	43	20	2	17
2007	0	18	na	14	18	18	16	2	14

a. NRAs including assistance to nontradables and non-product specific assistance.

b. NRAs including products specific input subsidies.

c. The Relative Rate of Assistance (RRA) is defined as $100*[(100+NRAag^t)/(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural sectors, respectively.

Appendix Table 21 (continued): Annual distortion estimates, Europe's transition economies, 1992 to 2007

(c) Value shares of primary production of covered[a] and non-covered products, (percent)

	apple	barley	beef	cotton	egg	grape	hazelnut	maize	milk	oat	oilseed	othergrains	pigmeat	potato
1992	1	4	7	2	3	1	1	2	10	1	0	1	11	1
1993	1	3	8	1	3	1	1	2	10	1	0	1	9	1
1994	1	3	8	2	3	1	1	2	11	1	0	1	8	1
1995	1	3	7	3	2	1	1	2	10	1	0	1	8	1
1996	1	3	7	3	3	1	1	3	11	1	0	1	9	1
1997	1	4	6	3	3	1	1	3	10	1	0	1	9	1
1998	1	2	6	3	3	1	2	2	10	0	0	1	8	1
1999	1	3	6	2	3	2	1	3	11	0	0	1	6	1
2000	1	3	5	2	3	1	1	2	12	0	0	1	7	1
2001	1	4	5	2	3	1	1	3	13	1	0	1	7	1
2002	1	3	4	2	4	1	1	3	12	1	0	1	7	1
2003	1	3	4	2	5	1	0	3	11	1	0	1	7	1
2004	1	3	5	3	4	1	na	3	12	1	0	na	6	1
2005	na	4	6	na	4	na	na	4	13	1	0	na	8	2
2006	1	3	3	2	2	3	na	4	8	0	0	na	5	3
2007	1	5	2	2	3	2	na	3	10	1	0	na	4	5

	poultry	rapeseed	rice	rye	sheep meat	soybean	sugar	sunflower	tobacco	tomato	wheat	wine	Non-covered
1992	3	0	0	1	1	0	2	2	1	1	10	na	34
1993	3	0	0	1	1	0	2	2	1	2	10	na	35
1994	3	0	0	0	1	0	2	1	0	2	7	na	38
1995	2	0	0	0	1	0	2	2	0	2	8	na	42
1996	3	0	0	1	1	0	2	1	1	2	11	na	36
1997	3	0	0	1	1	0	2	1	1	1	11	na	35
1998	3	0	0	0	1	0	2	2	1	3	8	na	38
1999	3	0	0	0	1	0	1	2	1	3	8	na	39
2000	3	0	0	0	1	0	1	2	1	2	10	na	39
2001	3	0	0	1	1	0	2	1	0	2	12	na	37
2002	3	0	0	1	1	0	1	2	0	2	10	na	40
2003	3	0	0	0	1	0	1	2	0	2	8	na	43
2004	3	0	na	0	1	0	1	2	0	2	11	na	41
2005	3	1	0	0	0	0	1	1	na	0	10	1	41
2006	3	1	0	na	2	0	1	2	0	3	8	1	43
2007	3	2	0	na	1	0	1	2	0	5	10	2	37

a. At farmgate undistorted prices.
Source: Anderson and Valenzuela (2008)

Appendix Table 22: Annual distortion estimates, CEE-10, 1992 to 2007
(a) Nominal rates of assistance to covered products

(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Oilseed	Pigmeat	Potato	Poultry	Rapeseed	Rice	Rye	Sheepmeat	Soybean	Sug
1992	-11	10	33	7	4	-29	17	-19	23	34	18	na	0	-5	24	
1993	38	-7	34	50	22	6	23	6	15	29	-3	na	-24	-32	89	
1994	16	-2	48	7	21	-10	37	18	-7	49	-25	na	-14	-36	45	
1995	-21	2	60	-9	26	-4	11	3	-2	40	-19	na	16	-3	20	
1996	-10	10	38	-4	25	14	24	-6	17	37	5	na	11	-38	22	
1997	-4	3	49	-4	35	36	8	-11	52	33	-9	na	27	-29	0	
1998	24	22	83	-4	77	36	14	27	3	54	-9	na	57	-5	-15	
1999	1	2	78	2	45	52	9	29	9	37	0	na	86	-31	-9	
2000	-5	-6	40	9	38	62	26	0	35	31	4	na	41	-38	-4	
2001	4	18	39	22	37	75	13	12	21	44	14	na	22	-2	28	
2002	7	18	22	0	49	1	9	9	83	62	13	na	-9	-7	19	
2003	4	7	2	51	59	66	16	-6	86	48	53	na	7	-12	-7	1
2004	12	-79	31	44	97	42	0	37	10	112	0	na	na	-5	-2	1
2005	1	87	38	20	35	29	0	35	10	69	0	2	na	-35	-6	1
2006	0	64	34	5	40	7	0	30	10	73	0	3	na	-43	-9	
2007	0	66	0	21	0	0	0	18	10	100	0	1	na	68	0	

Appendix Table 22 (continued): Annual distortion estimates, CEE-10, 1992 to 2007
(b) Nominal and relative rates of assistance to all[a] agricultural products, to exporAppendix
Table[b] and import-competing [b] agricultural industries, and relative[c] to non-agricultural
industries   (percent)

	Total ag NRA				Ag tradables NRA				
	Covered products		Non-covered products	All products (incl NPS)	Export-ables	Import-competing	All	Non-ag tradables NRA	RRA
	Inputs	Outputs							
1992	4	-2	na	0	-9	13	0	5	-4
1993	4	16	na	19	11	21	19	7	12
1994	5	15	na	18	6	23	19	6	13
1995	4	6	na	9	-3	20	9	6	3
1996	4	8	na	11	2	24	11	5	6
1997	3	7	na	11	3	20	11	6	4
1998	5	33	na	38	18	54	38	5	31
1999	5	24	na	29	15	42	29	2	26
2000	5	17	na	20	4	31	21	3	17
2001	5	22	na	25	2	41	25	4	20
2002	6	21	na	24	10	50	24	5	18
2003	6	23	na	26	2	48	26	5	20
2004	2	41	na	36	38	56	35	4	30
2005	0	25	na	26	17	52	18	3	14
2006	0	20	na	15	12	33	13	4	9
2007	0	11	na	11	11	12	10	4	6

a. NRAs including assistance to nontradables and non-product specific assistance.
b. NRAs including products specific input subsidies.
c. The Relative Rate of Assistance (RRA) is defined as $100*[(100+NRAag^t)/(100+NRAnonag^t)-1]$, where $NRAag^t$ and $NRAnonag^t$ are the percentage NRAs for the tradables parts of the agricultural and non-agricultural sectors, respectively.

Appendix Table 22 (continued): Annual distortion estimates, CEE-10, 1992 to 2007
(c) Value shares of primary production of covered[a] and non-covered products,
(percent)

	Barley	Beef	Egg	Maize	Milk	Oat	Oilseed	Pigmeat	Potato	Poultry	Rapeseed	Rice	Rye	Sheepmeat	Soybean	Sug
1992	2	6	3	4	12	0	0	22	0	4	0	na	0	1	0	
1993	2	7	3	4	11	0	0	16	0	3	0	na	0	2	0	
1994	2	7	3	5	11	0	0	15	1	3	0	na	0	1	0	
1995	2	5	2	5	11	0	1	15	1	3	0	na	0	1	0	
1996	2	5	3	6	11	0	0	16	0	4	0	na	0	1	0	
1997	3	5	3	6	10	0	0	17	0	4	1	na	0	1	0	
1998	2	6	3	5	11	0	1	16	0	4	1	na	0	1	0	
1999	2	5	3	7	13	0	1	13	0	5	1	na	0	1	0	
2000	2	4	3	4	13	0	1	14	0	4	1	na	0	1	0	
2001	2	3	3	6	14	0	1	14	0	5	1	na	0	1	0	
2002	2	3	3	6	12	0	1	13	0	4	1	na	0	1	0	
2003	2	3	4	5	12	0	1	14	0	5	1	na	0	1	0	
2004	2	3	4	7	11	0	0	13	0	4	1	na	na	1	0	
2005	3	3	3	6	6	0	0	11	4	3	2	0	na	1	0	
2006	3	3	3	6	7	1	0	9	4	3	2	0	na	1	0	
2007	5	2	3	4	9	1	0	8	7	3	3	0	na	0	0	

a. At farmgate undistorted prices.
Source: Anderson and Valenzuela (2008)

Appendix Table 23: Shares of the global value of production and consumption of key agricultural products, Europe's transition economies, 2000-04

(percent)

		Bulgaria	Estonia	Hungary	Latvia	Lithuania	Poland	Romania	Russia	Slovakia	Sl
Grains	**Q**	**0.2**	**0.0**	**0.4**	**0.0**	**0.1**	**0.4**	**0.6**	**2.0**	**0.1**	
	C	**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	**0.2**	**0.5**	**0.9**	**0.0**	
Rice	Q										
	C										
Wheat	Q	0.5	0.0	0.5	0.1	0.2	1.3	0.8	4.8	0.2	
	C	0.2	0.0	0.2	0.0	0.1	0.5	0.4	1.7	0.1	
Maize	Q	0.2		0.9			0.2	1.5	0.4	0.1	
	C	0.3		0.9			0.3	3.7	0.6	0.1	
Cassava	Q										
	C										
Barley	Q	0.6	0.2	0.7	0.1	0.5		0.7	8.5	0.4	
	C	0.5	0.2	0.7	0.2	0.7		1.0	7.7	0.4	
Oat	Q		0.2		0.3	0.3		1.2	22.6	0.1	
	C		0.3		0.3	0.4		2.0	17.1	0.1	
Chickpea	Q										
	C										
Oilseeds	**Q**	**0.2**		**0.2**			**0.2**	**0.4**	**1.0**	**0.1**	
	C	**0.2**		**0.2**			**0.2**	**0.4**	**0.9**	**0.1**	
Soybean	Q								0.1		
	C								0.1		
Rapeseed	Q						2.0	0.1		0.3	
	C						#VALUE!	na		na	
Sunflower	Q	3.1		2.8			na	4.5	12.4	0.6	
	C	2.1		3.1				4.5	11.9	0.4	
Sesame	Q										
	C										
Tropical crops	**Q**	**0.0**		**0.0**	**0.1**	**0.2**	**0.2**	**0.0**	**0.5**	**0.0**	
	C	**0.0**		**0.1**	**0.1**	**0.2**	**0.1**	**0.1**	**1.6**	**0.0**	
Sugar	Q	0.0		0.1	0.3	0.5	0.5	0.0	1.4	0.1	
	C	0.0		0.3	0.4	0.5	0.5	0.2	5.3	0.1	
Cotton	Q										
	C										
Livestock products	**Q**	**0.1**	**0.0**	**0.3**	**0.0**	**0.1**	**1.0**	**0.4**	**2.0**	**0.1**	
	C	**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	**0.4**	**0.2**	**1.3**	**0.1**	
Pigmeat	Q	0.1	0.0	0.5	0.0	0.1	2.1	0.6	1.6	0.1	
	C	0.0	0.0	0.1	0.0	0.0	0.2	0.1	0.4	0.0	
Milk	Q	0.3	0.1	0.3	0.1	0.3	1.6	0.7	4.2	0.1	
	C	0.2	0.1	0.3	0.1	0.3	1.6	0.8	4.0	0.1	
Beef	Q	0.1	0.0	0.1	0.0	0.1	0.4	0.3	2.1	0.1	
	C	0.1	0.0	0.1	0.0	0.1	0.3	0.4	4.3	0.1	
Poultry	Q	0.1	0.0	0.6	0.0	0.0	0.8	0.3	1.3	0.1	
	C	0.0	0.0	0.2	0.0	0.0	0.2	0.1	1.1	0.0	
Egg	Q	0.1	0.0	0.1	0.0	0.0	0.3	0.3	1.6	0.0	
	C	0.1	0.0	0.2	0.0	0.0	0.3	0.4	2.1	0.1	
Sheepmeat	Q	0.3		0.1			0.0	0.6			
	C	0.3		0.1			0.0	0.7			
Total of above products	**Q**	**0.2**	**0.0**	**0.3**	**0.0**	**0.1**	**0.7**	**0.5**	**1.8**	**0.1**	
	C	**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	**0.3**	**0.3**	**1.2**	**0.0**	
Production only											
All covered	Q	0.2	0.0	0.3	0.0	0.1	0.8	0.5	2.0	0.1	
Non-covered	Q	0.3	0.0	0.2	0.1	0.1	1.5	0.7	2.6	0.1	
All agriculture	Q	0.2	0.0	0.3	0.0	0.1	1.0	0.6	2.2	0.1	

Source: Authors' calculations using Project data and FAO Production and Commodity Balance Data.

Appendix Table 24: Share of global exports and imports, key covered products, Europe's transition economies, 2000-03

(percent)

		Bulgaria	Estonia	Hungary	Latvia	Lithuania	Poland	Romania	Russia	Slovakia	Slovenia
Grains	**X**	**0.3**	**0.0**	**0.9**	**0.0**	**0.1**	**0.1**	**0.1**	**1.7**	**0.1**	**0.0**
	M	**0.1**	**0.0**	**0.0**	**0.0**	**0.0**	**0.2**	**0.3**	**0.5**	**0.1**	**0.1**
Rice	X										
	M										
Wheat	X	0.4	0.0	0.8	0.1	0.3	0.2	0.1	2.9	0.0	0.0
	M	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.7	0.0	0.1
Maize	X	0.1		1.9			0.0	0.1	0.0	0.1	0.0
	M	0.2		0.1			0.4	0.2	0.5	0.1	0.2
Cassava	X										
	M										
Barley	X	0.8	0.0	0.5	0.0	0.1		0.6	6.5	0.1	0.0
	M	0.0	0.1	0.2	0.0	0.1		0.4	1.3	0.3	0.3
Oat	X		0.1		0.1	0.0		0.0	0.1	0.0	
	M		0.1		0.2	0.1		0.0	0.7	0.0	
Chickpea	X										
	M										
Oilseeds	**X**	**0.2**		**0.4**				**0.2**	**0.4**	**0.1**	
	M	**0.0**		**0.1**				**0.1**	**0.3**	**0.0**	
Soybean	X							0.0			
	M							0.2			
Rapeseed	X							0.2		0.5	
	M							0.0		0.1	
Sunflower	X	2.1		5.0				2.0	4.6	0.8	
	M	0.3		0.7				0.5	4.2	0.2	
Tropical crops	**X**	**0.0**		**0.0**	**0.0**	**0.0**	**0.3**	**0.0**	**0.1**	**0.0**	**0.0**
	M	**0.2**		**0.0**	**0.0**	**0.0**	**0.1**	**0.4**	**3.5**	**0.1**	**0.0**
Sugar	X	0.0		0.1	0.0	0.1	0.8	0.0	0.4	0.1	0.0
	M	0.5		0.1	0.0	0.0	0.2	1.1	9.1	0.2	0.1
Cotton	X										
	M										
Livestock products	**X**	**0.1**	**0.1**	**0.9**	**0.1**	**0.2**	**0.9**	**0.0**	**0.2**	**0.1**	**0.1**
	M	**0.1**	**0.1**	**0.2**	**0.1**	**0.1**	**0.3**	**0.2**	**2.8**	**0.1**	**0.1**
Pigmeat	X	0.0	0.1	1.7	0.0	0.0	0.9	0.0	0.1	0.0	0.1
	M	0.1	0.1	0.3	0.2	0.1	0.4	0.5	3.2	0.2	0.3
Milk	X	0.1	0.2	0.3	0.2	0.6	1.2	0.0	0.4	0.2	0.2
	M	0.1	0.1	0.2	0.1	0.1	0.4	0.1	1.5	0.1	0.1
Beef	X	0.0	0.0	0.1	0.0	0.1	0.5	0.0	0.0	0.0	0.1
	M	0.1	0.0	0.0	0.1	0.0	0.0	0.1	3.4	0.1	0.0
Poultry	X	0.2	0.1	2.7	0.0	0.0	1.3	0.1	0.0	0.1	0.2
	M	0.1	0.2	0.1	0.3	0.1	0.2	0.5	6.3	0.2	0.1
Egg	X	0.3	0.0	1.4	0.2	0.2	0.7	0.1	0.5	0.2	0.2
	M	0.1	0.1	0.9	0.1	0.2	0.4	0.3	0.5	0.1	0.1
Sheepmeat	X			0.1			0.0				0.0
	M			0.0			0.0				0.0
Total of above products	**X**	**0.1**	**0.1**	**0.7**	**0.1**	**0.2**	**0.5**	**0.1**	**0.6**	**0.1**	**0.1**
	M	**0.1**	**0.1**	**0.1**	**0.1**	**0.0**	**0.2**	**0.3**	**2.1**	**0.1**	**0.1**
All agriculture	**X**	**0.1**	**0.1**	**0.6**	**0.1**	**0.1**	**0.7**	**0.1**	**0.4**	**0.1**	**0.1**
	M	**0.1**	**0.1**	**0.3**	**0.2**	**0.1**	**0.7**	**0.3**	**1.9**	**0.2**	**0.2**

Source: Authors' derivation using production, trade and domestic supply data in the FAO Commodity Balances at FAOSTAT.