5 Conclusion

An agricultural assistance program such as the CAP encourages an expansion of the agricultural and food processing sectors in the European Union. This occurs through a reallocation of fixed primary factor resources within the economy from non-supported sectors (manufacturing and services), to supported activities where the costs to purchasers decline (in the case of direct payments and export subsidies) or where competition from imported alternatives is restricted (in the case of border protection).

Support for the agricultural and food processing sectors in the European Union reduces world prices for agricultural and food commodities. This encourages a movement of resources in other economies away from agriculture and food processing, towards other sectors such as manufacturing and services, which offer higher returns.

These reallocation effects can lead to an overall loss in welfare across the world, including in the European Union itself. The costs include inefficiencies caused by resource reallocation, reflected in a loss in GDP, as well as decreases in an economy's purchasing power, as reflected in a decrease in the terms of trade.

The results of the modelling conducted in this study confirm, and quantify, the picture outlined above. The results show that the CAP leads to:

- an increase in the output of the agricultural and food processing sectors of around 8 and 6 per cent respectively in the European Union
- a decrease in the output of the manufacturing and services sectors in the European Union equivalent to around $US 65 billion
- decreases in world prices for agricultural goods (of between 2 and 4 per cent) and food processing goods (of around 1 per cent), and increases in world prices for manufactured goods and services
- a reallocation of resources away from agriculture and food processing toward other sectors of the economy in all non-EU regions — some of the largest decreases occur in the livestock sectors in Latin America (12.7 per cent) and Australia–New Zealand (4.9 per cent), and in the food processing sectors in most regions

- forgone production, as measured by a decrease in GDP, in the European Union of about 0.3 per cent, or $US 52 billion
- a net welfare cost in almost all of the European Union's trading partners, in most cases due to the terms of trade gains experienced by the European Union, which translate into a terms of trade loss for all the other regions
- net global welfare costs of about $US 45 billion that mostly accrue to the European Union itself ($US 30 billion), with the largest contributor to this welfare loss being the border protection component of the CAP.

Other general equilibrium (GE) analyses of European assistance to agriculture usually examine the effects of liberalising some or all components of the CAP and are generally consistent with the results presented above (see, for example, Fransden, Gersfelt and Jensen, 2002).

Some caveats

The modelling results are sensitive to parameter choices, specific model features, and the structure of the database. They are also incomplete, reflecting the limited ability of CGE modelling to capture all costs and benefits associated with the CAP. These factors would need to be accounted for in a more comprehensive analysis of the effects of the CAP.

Model and database

Using a database with a 2004 base year to model a 2007 policy situation relies on the simplifying assumption that the structure of production and trade has not changed across countries over that time. This may be a reasonable assumption for many countries. The period between 2004 and 2007 saw some changes in the structure of the European Union: twelve NMS joined the European Union, and direct payments were gradually decoupled over this period. These changes are likely to have induced changes in production and trade patterns which are not accounted for in the database and could affect results.

Aggregating the database into commodity groups can lead to an underestimation of some of the sectoral results. Although in this study all agricultural sectors were left disaggregated, all other industries were aggregated into two — manufacturing and services. This reduces the scope for inter-sectoral resource reallocation in the model, and may understate the allocative efficiency costs associated with the CAP.

Much work has been done in version 7 of the GTAP database to represent better the decoupling of direct income payments. Although the decoupling in the database is incomplete, with only crop sectors accounted for in the process, this is presently not of concern as many commodity-specific payments remain. However, as the European Union moves increasingly towards the SPS across all agricultural sectors, away from more traditional assistance measures, this will need to be reflected in the database and future modelling.

Results are sensitive to the parameter estimates used as they affect, among other things, the supply response associated with various forms of assistance. Future work might investigate the appropriateness of the standard parameters that were used in this study, and may produce estimates of the elasticity of output with respect to assistance. However, econometric estimation of this relationship is difficult due to a lack of data.

Other factors

There are several other considerations that have not been taken into account in the modelling conducted in this study, both because some effects are inherently difficult to model, and because the complexity of the model increases with the number of effects incorporated. Accounting for the following considerations would be an important addition to a comprehensive policy assessment of the effects of the CAP.

- The costs of administering the CAP, including the costs of managing the diverse elements of the CAP — that is, the costs of managing the tariff, the quota systems, or the direct payments.[1] Their exclusion means that the costs of the CAP are underestimated.
- The effects on productivity of having the CAP in place. The CAP assistance afforded farmers can lead to inefficiencies associated with technical change (in addition to allocative inefficiencies). For example, the lack of competitive forces in the presence of subsidisation can remove the incentive to improve management practices, implement best practice farming techniques, and adopt new technology. Including this technical change (productivity) effect in the modelling would increase the estimated costs of the CAP.
- The effects of cross-compliance and rural development measures. The direct effects of these were not modelled, nor were the possible externalities associated with them. Positive externalities could include the value of improved

[1] For example, the costs of administering the tariff schedule can include costs to business from having to comply with import regulations, import licensing and quarantine restrictions, and costs to government of administration.

environmental outcomes, animal welfare conditions and rural landscapes. These would be countered by possible negative externalities associated with a higher level of agricultural output under the CAP than would otherwise prevail (such as environmental damage from fertiliser or pesticide use). Neither positive nor negative externalities of the CAP have been captured in this assessment.

- The CAP is in constant evolution. This means that any study at a point in time is either an attempt at an ex post assessment of the effects of the CAP (as is this study) or an ex ante evaluation of the possible effects of changes. The former is likely to have more information available, and usually entails numerous compromises to isolate the effects of policies from all that has taken place. The latter is often based on less information, making it more difficult to review and less susceptible to thorough criticism.
- A successful transition to a more market oriented CAP program means that the costs of CAP assistance may decline over time. This raises the challenge of developing methods for modelling less traditional forms of industry assistance that have a less predictable relationship with economic outcomes.

Notwithstanding the limitations of the modelling, the results suggest that the CAP is generating a significant welfare loss, particularly to the European Union itself.