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Agricultural member state modelling for the EU and eastern european countries - AGMEMOD 2020



Key external stakeholders:

European Commission, national Governments, policy makers, agricultural industry representative bodies.

Practical implications for stakeholders:

- Teagasc Rural Economy Research Centre was a core member of the AGMEMOD Partnership which, with the support of the European Union's (EU) 6th Framework Programme, developed a dynamic, multi-country, multi-commodity partial equilibrium model of the European Union agricultural commodity markets.

Main results:

The AGMEMOD model developed in this project is capable of analyzing the impact of changes in agricultural policy in each of the EU 27 Member States and the aggregate EU. The model's country by country structure facilitates the analysis of future EU enlargement and provides country level detail that distinguishes the model's analytic capacity from that available from other modeling systems.

The AGMEMOD model was used to analyse the impact of the Common Agricultural Policy (CAP) Health Check (2008). Analysis of the impact of possible outcomes of the ongoing CAP +2013 reform process was also undertaken

Opportunity / Benefit:

The modeling system developed can be used by researchers and European institutions (European Commission) to analyse the impact of potential policy reforms at a detailed member state level.

Collaborating Institutions:

BOKU; UCL; IEABG; UNWE; UZEI; FØI; EMU; MTT; INRA; vTI; CUB; UNIVPM; LSIAE; LAEI; SGGW; UNL; IEARO; SAU; LJUB; CITA; LEI; QUB.

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1. Project background:

Agricultural policy remains a key determinant of agricultural production in Ireland and the EU. Agricultural policy in Ireland and the EU is largely synonymous with the European Union's (EU) Common Agricultural Policy (CAP). Since the 2003 CAP reform (commonly known as the Fischler reforms) the CAP has become increasingly heterogeneous in its implementation across the EU. The expansion of the EU in 2004 and 2007 added to this heterogeneity, since the single payment system (SPS) that operates in the EU15 member states in general is not applied in those member states that acceded to the EU in 2004 and 2007 (they apply what is known as the simplified area payments system of SAPS).

Nevertheless, despite the increased heterogeneity of policy, policy reforms are still determined at an EU level. Given the absence of barriers to trade within the EU what happens in response to a policy change in one member state can affect the market prices of agricultural production in another member state. These two pan-European dimensions of EU agricultural policy and its implementation at member state level called for the development of a policy analysis tool capable of analysing the impact of changes in agricultural policy at the individual member state and aggregate EU levels.

The research conducted in this project, in developing such a EU agricultural policy modelling tool, built on earlier research projects that were supported by the EU 5th Framework Programme (FP5 QLRT-2000-00473) and research contracts from the European Commission Joint Research Centre's Institute for Prospective and Technological Studies (DG JRC-IPTS).

2. Questions addressed by the project:

- Can a partial equilibrium, non-spatial, economic model of the EU27 and eastern European agricultural commodity markets be developed through a collaborative project involving economists from across the EU?
- Can the model developed be used to generate baseline (no policy change) projections for EU agricultural commodity markets?
- Can the model developed be used to analyse the impact of the CAP Health Check reform of 2008?
- Can the model developed be used to analyse the impact of changes to the CAP envisaged for the period 2014-2020?

3. The experimental studies:

The research project was broken into 5 principal phases:

- The development of the modeling structure for individual country models and for the EU27 model
- Database construction and development
- Estimation and validation of country models
- Solving of the European composite EU27 model and generation of baseline projections
- Simulation and analysis of alternative policy scenarios using the composite EU27 model

4. Main results:

- The development of a dynamic, multi-commodity, multi-country partial equilibrium agricultural commodity market mode for the EU27 that incorporates current agricultural policy instruments prevalent in each member state that is capable of generating baseline and scenario projections to a ten year horizon.
- CAP Health Check analysis conducted using the model found that the recently agreed reform is likely to have very little impact on agriculture across the EU. The agreement reached on the phasing out of the EU milk quota represents the principal agricultural policy change agreed. The analysis suggests that the increase in the rate of modulation agreed by the Council will have only very modest impacts on agricultural production. The freedom to retain coupled suckler cow and ewe premium under the terms of the CAP Health Check Agreement will limit the extent of any adjustment in the cattle and sheep sectors.
- The second set of policy change scenarios analysed the impact of a mandatory move to national flat area payment systems and the impact of the implementation of an EU wide flat area payment in conjunction with the full decoupling of all remaining coupled policy instruments. The results suggest that the retention of coupled payments continues to support agricultural production in the EU. The introduction of an EU flat area payment leads to increased production in those member states with lower direct payments per hectare than the EU average and declines in agricultural activity and agricultural commodity production in those member states with above average direct payment receipts per hectare. Under the EU flat rate scenario there are no dramatic changes in the pattern of EU agricultural production.
- The third set of policy change scenarios were two EU Budgetary Review scenarios that examined the commodity market impacts of policy changes that would significantly reduce the budgetary resources devoted to CAP Pillar I measures. While these two scenario's impacts are the largest of the alternative CAP policies analysed the impacts on commodity markets and on agricultural output prices are relatively modest. The greatest impacts, as anticipated by Bureau and Mahé in their 2008 paper, are on the specialised beef and sheep sectors.

5. Opportunity/Benefit:

The primary stakeholders for this research are the European Commission, Member State national governments, the policy making community and research peers.

The results of the project have been presented at seminars in Brussels for the European Commission and at academic seminars, workshops, symposia and conferences organised by the Agricultural Economics Society of Ireland (AESI), Agricultural Economics Society (AES), European Association of Agricultural Economists (EAAE) and the International Association of Agricultural Economists (IAAE).

The model developed as part of this project will be used to conduct baseline and policy analysis relating to the ongoing CAP +2013 reform process. The project has also contributed to the development of expertise across the expanded EU in the economic analysis of agricultural commodity markets and has contributed to the development of the agricultural economics community within the European Union.

6. Dissemination:

Main publications:

Hanrahan, K., Chantreuil F., van Leeuwen, M. (eds.) (2012) *The Future of EU Agricultural Markets by AGMEMOD*. Springer, 128 pages.

Go to <http://dx.doi.org/10.1007/978-94-007-2291-0>

Erjavec, E. Chantreuil, F., Hanrahan, K., Donnellan, T., Salputra, G., Kožar, M., van Leeuwen, M. (2010) Policy assessment of an EU wide flat area CAP payments system. *Economic Modelling*, 28(4): 1550-1558.

Go to <http://dx.doi.org/10.1016/j.econmod.2011.02.007>

Hanrahan, K., Donnellan, T. and Chantreuil, F. (2010) Agricultural Policy Change in the EU: Analyzing the Impact at Member State and Aggregate EU Levels. *Journal of International Agricultural Trade and Development*, 6(1): 83-100. Go to <http://purl.umh.edu/96778>

Chantreuil, F., Donnellan, T., van Leeuwen, M., Salamon, P., Tabeau, A. and Bartova, L. (2008) "EU dairy quota reform – AGMEMOD scenario analysis". Paper presented at the XIIth EAAE Congress, Ghent Belgium, August 29-29, 2008. <http://purl.umh.edu/43655>

7. Compiled by: Kevin Hanrahan