

Project number: 6039

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Extension of the AGMEMOD model to Turkey



Key external stakeholders:

European Commission, national governments, policy makers.

Practical implications for stakeholders:

The potential accession of Turkey to the EU represents a significant challenge in terms of aligning existing domestic agriculture policy and monitoring and evaluation frameworks to EU standards. The extension of the AGMEMOD model to include Turkey facilitated the development of common approaches to data collection and reporting and enabled analysis of the implication of Turkey's membership of the EU.

Main results:

- A dynamic agricultural commodity market model for the EU27 and Turkey, that is capable of generating baseline and scenario projections to a ten year horizon, was developed.
- The project has also contributed to the development of expertise in Turkey in the economic analysis of agricultural commodity markets.
- The accession of Turkey to the EU would have limited impacts on Irish agricultural production due to differences in each country's comparative advantage.

Opportunity / Benefit:

The model developed as part of this project will be used to conduct baseline and policy analysis relating to the ongoing CAP reform processes and other EU accession analyses.

Collaborating Institutions:

Agricultural Economics Research Institute (LEI), Johann Heinrich von Thünen-Institute (vTI), Association Alessandro Bartola, Akdeniz University

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1. Project background:

Enlargement is an important policy issue for the EU. The Union saw its biggest enlargement in 2004 when ten new countries acceded, while Romania and Bulgaria became the newest members of the EU in January 2007. The EU enlargement process took a further step forward in October 2005, when formal accession negotiations were opened with Croatia and Turkey. More than half of Turkey's total land area is devoted to agriculture. A Turkish accession to the EU would add about 41 million hectares to the agricultural area of the EU, and Turkey would account for one fifth of the agricultural area of a future EU28. In 2008, more than one quarter of the Turkish workforce was employed in agriculture, while the sector accounted for 9.2% of Turkish GDP. Vegetables and fruits (with tomatoes ranked first) account for the majority of Turkish crops output value. Cow's milk is the most important product accounting for 36% of livestock product output value.

The research conducted in this project, by extending the scope of the AGMEMOD model builds on earlier research projects supported by the EU 5th and 6th Framework Programmes (FP5 QLRT-2000-00473 and FP6 SSPE-CT-2005-021543) and research contracts from the European Commission Joint Research Centre's Institute for Prospective and Technological Studies (DG JRC-IPTS).

Given the importance of Turkey's agricultural sector and its intensive domestic agricultural support system, Turkish accession to the EU, and the concomitant adoption by Turkey of the CAP, will influence Turkish and EU agricultural commodity markets. This project provides an in-depth model based quantitative assessment of the possible implications of the accession of Turkey for these markets.

2. Questions addressed by the project:

What would the impact of a hypothetical Turkish accession to the EU in 2015 be on Turkish and EU agricultural markets?

3. The experimental studies:

The research project was broken into six principal phases:

- The development of the modeling structure for the Turkish AGMEMOD model
- Turkish agricultural commodity supply and use and agricultural output database construction and development
- Estimation and validation of the Turkish country model
- Integration of the Turkey AGMEMOD model within the AGMEMOD model structure.
- Solving of the European composite EU27 and Turkish AGMEMOD models and generation of baseline projections (assuming no Turkish accession to the EU).
- Solving of the European composite EU28 model and generation of Turkish accession scenario projections assuming Turkish accession to the EU in 2015.

4. Main results:

- A dynamic agricultural commodity market model for the EU27 and Turkey, that is capable of generating baseline and scenario projections to a ten year horizon, was developed.
- This modelling system was used to analyse the impact of a Turkish Accession to the EU in 2015 on EU and Turkish agricultural markets. Some of the key outcomes from an Irish perspective were that:
 - Generally the impact of Turkish accession on EU and Turkish markets depends on whether levels of protection afforded to Turkish agriculture are reduced or increased following accession.
 - The magnitude of the impacts on Irish agricultural output prices is projected to be minor. This is

because of the limited degree to which Irish and Turkish agricultural output are substitutes and the fact that for many agricultural sectors the level of prices in Turkey will be lower following accession to the EU.

- Of those agricultural commodities produced in Ireland that are affected by Turkish accession the largest impacts occur on lamb and poultry meat markets.
- As a result of Turkish accession to the EU, by 2020, producer prices for lamb are projected to be 5% lower than under the Baseline.
- The principal impacts of Turkish accession to the EU are on Turkish agriculture rather than EU agriculture. Generally producers of cereals and fruits and vegetables will see reduced incomes while producers of livestock and livestock products gain from accession.

5. Opportunity/Benefit:

The model developed as part of this project will be used to conduct baseline and policy analysis relating to the ongoing CAP reform processes and other EU accession analysis. The project has also contributed to the development of expertise in Turkey in the economic analysis of agricultural commodity markets.

6. Dissemination:

The results of the project have been presented at a seminar in Brussels for the European Commission and the wider academic and policy making community.

Main publications:

Leeuwen, M. v., Tabeua, A., Salamon, P., Esposti, R., Bonfiglio, A., Lobianco, A., Donnellan, T., Hanrahan, K., Koç, A. and Bölük, G. 2010. *Extension of the AGMEMOD model towards Turkey - Final Report*. Submitted to the Institute for Prospective and Technological Studies (IPTS-JRC), Sevilla, Spain. July 2010.

7. Compiled by: Dr Kevin Hanrahan
