
# Cumulative economic assessment of future trade agreements on the EU agriculture

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## Abstract

This paper presents potential effects of twelve free trade agreements (FTAs) under the current EU FTA agenda. With the help of two economic simulation models (the global CGE MAGNET and PE AGLINK), it sheds some light on relatively balanced cumulated impacts in terms of trade, production and price for the EU agricultural sector as a whole while quantifying also the market development for specific agricultural sectors. It compares a conservative and an ambitious FTA scenario with a business as usual (reference) scenario.



**Keywords:** **European Union, FTA, agriculture, CGE model, PE model**


## 1 Introduction

Trade is important to the European economy. The European Union (EU) exports nearly as many goods as China and more than the USA or any other country. For agri-food trade in particular, the EU is a key player on global markets. The EU is already the leading importer of agri-food products since many years. Since 2013, the EU has even become the biggest global exporter of agri-food products. In 2010, the EU turned for the first time into a net exporter in agri-food, and since then has consistently run a trade surplus for this type of goods.

EU trade policy, through recently concluded Free Trade Agreements (FTAs) with several partners in Latin America, Asia, Europe and Africa, has contributed to this performance. Apart from the setback in 2009, in the wake of the global economic and financial crisis, export value has been continuously increasing since 2005, at an average pace of 8% per year outpacing growth of non-agricultural exports.

In 2015, EU agri-food exports totalled 129 billion euros, with a growth of 6% compared to 2014, despite the significant export losses to Russia. At the same time, EU agri-food imports in 2015 amounted to 113 billion euros, equally on a rising trend. Hence, the trade balance showed a positive surplus of 16 billion euros. Agri-food trade represented about 7% of total EU trade value and even made up 25% of the EU positive trade balance. The EU export portfolio includes a balanced basket of products at various quality and value-added levels, ranging from agricultural commodities to high value-added processed food products, and alcoholic beverages. EU agri-food imports are highly concentrated on a more limited number of product types: agricultural commodities for further processing, (protein products for the animal feeding, vegetable oils and unroasted coffee) and primary products for human consumption (fruits and nuts of tropical origin or imported in counter season).

Expansion opportunities on the internal market appear to be limited in the context of slowed-down economic growth, ageing population, saturation of food consumption and changing diet preferences. Thus, international markets are essential for the growth of EU agriculture and farmers' income and an important source for jobs creation. While developed countries remain an important outlet, emerging economies and a growing middle class in many developing countries are expected to open opportunities for exports, with growth rates in population and purchasing power outpacing the EU and other advanced economies, and with nutrition patterns shifting to more meat and dairy products-based diets.

To make the most out of these opportunities, EU producers need more open markets and stable trade relations. This is not granted, in a multi-polar world where Brazil, China, India, Indonesia and South-Africa have developed into new competitors to the USA and the EU – as suppliers or as buyers of agricultural goods – and where recent geo-political developments have shown the fragility of international trade relations. In particular, the experience gained after the introduction of the Russian import ban on EU agricultural products has shown the importance of a diversification strategy for EU agriculture, in view of reducing its dependency from very few export markets.

Recent years brought about a significant evolution in global trade policies: while WTO multilateral negotiations have been struggling to achieve concrete results, most countries have engaged in bilateral and regional Free Trade Agreements (FTAs) to achieve a higher degree of reciprocal tariff liberalisation and improve market on third country markets. These agreements are now more ambitious and comprehensive compared to a decade ago. The EU has followed this trend, with the number of preferential trade negotiations expanding over the last years. New trade agreements with important partners (e.g., South Korea, Peru, Colombia, Central America, Ukraine, and the South African Development Community (SADC)) have entered into effect – in some cases on a provisional basis. In addition, the EU has recently concluded trade negotiations with Vietnam and Canada; although these agreements are not into application yet. Several prominent trade dossiers are under negotiation, including the Transatlantic Trade and Investment Partnership (TTIP), the agreements with Japan or the one with the Mercosur, and just launched with Indonesia. Some new negotiations are likely to be launched in the near future (e.g., Australia, New Zealand), and other agreements are going to be modernised (e.g., Turkey, Mexico).

As regards the agricultural sector, the various FTAs – once implemented - will open up new opportunities for exporting EU agri-food products, but will also allow for more imports: while this would be an advantage for final consumers and for agricultural producers relying on large availability of raw materials, higher imports would also lead to increasing competition on domestic agri-food markets. In this respect, the EU has some sensitive products, particularly in negotiations with very competitive agricultural producers and exporters.

In order to build a coherent EU agricultural trade policy, EU policymakers and negotiators need to ensure consistency between different trade agreements, and in particular to limit their possible negative impacts on EU sensitive agricultural products. To this end, it is necessary to consider the joint effects of all bilateral concessions that are granted by the EU to its trade partners and balance these against concessions obtained from them as regards EU agri-food exports and beyond.

This paper focus on the market access arrangements of the trade agreements, i.e., on the effects produced by reciprocal liberalisation of import tariffs between the EU and the relevant trade partners. This means that other provisions in the trade agreements that could potentially also have an economic impact on the EU agricultural sector (e.g., the reduction of non-tariff measures (NTMs), in particular sanitary and phytosanitary measures (SPS), or the protection of geographical indications) are not taken into account.

The paper is organised as follows: next session is dedicated to the methodology employed to perform the analysis, section 3 introduces policy scenarios, section 4 presents model results, section 5 highlights the main limitations of the paper while section 6 concludes.

# 2 Methodology

Economic models represent the main tool for the analysis of complex trade relations and are applied for the assessment of the EU trade agreements. The analytical question at stake, i.e. the cumulative trade agreements, creates even more complexity and requests a specific approach responding to the multitude of agreements and at the same time particularity of the agri-food sector. To answer to

both aspects, we apply a two-tier modelling approach, where a global CGE model is softly linked (and harmonized) to an agricultural specific partial equilibrium model (Figure 1).

We employ a state-of-the-art multi-sector, multi-region recursive dynamic CGE model named MAGNET (Modular Applied GeNeral Equilibrium Tool) (Woltjer and Kuiper, 2014). MAGNET is based on the Global Trade Analysis Project (GTAP) model, which accounts for the behaviour of households, firms, and the government in the global economy and how they interact in markets (Hertel, 1997). The model includes the food supply chain from farm, as represented by agricultural sectors - via food processing industries and food service sectors - to fork taking into account bilateral trade flows for major countries and regions in the world. A key strength of the MAGNET model is that it allows the user to choose a la carte those sub-modules of relevance to the study at hand. This incarnation of MAGNET captures the specificities of agricultural markets. MAGNET is calibrated on a fully consistent and academically recognised global database, based on contributions from members of the GTAP network and constructed by the GTAP team at Purdue University, USA (Aguiar et al., 2016). The GTAP database, in its version 9, contains a complete record of all economic activity (i.e., production, trade, primary factor usage, final and input demands, taxes and trade tariffs and transport margins) for 57 activities and 140 regions for the year 2011.

The following sectorial disaggregation of 26 commodities has been performed:

- Primary agriculture (10 commodities): wheat; paddy rice; other grains; oilseeds; sugar beet & cane; vegetables, fruits & nuts; other crops; cattle; other animal products; and raw milk;
- Food and beverages (8 commodities): cattle meat; other meat; dairy; sugar; vegetable oils & fats; processed rice; beverages & tobacco; and other food;
- Other sectors (8 commodities not shown): fish & forestry, crude oil, gas, coal, light manufacture, heavy manufacture, utilities and services.

AGLINK-COSIMO is recursive-dynamic partial equilibrium model for the main agricultural commodities. Non-agricultural markets are not modelled and are treated exogenously to the model. As non-agricultural markets are exogenous, hypotheses concerning the paths of key macroeconomic variables are predetermined with no accounting of feedback from developments in agricultural markets to the economy as a whole. AGLINK-COSIMO represents agricultural commodity markets worldwide in detail. Moreover, the model accounts for specific linkages between the different agricultural commodities: A sophisticated feed module links arable crop production to the livestock sector, the production of dairy products makes sure the fat and protein balance in the product mix is assured and the development of the milk sector is accounted for in the beef meat production.

The models are harmonised in a way that MAGNET represents as close as possible the assumptions and market projections of the Medium-term prospects for EU agricultural markets and income 2015-2025 (European Commission, 2015). This market outlook is based on information available at the end of October 2015 for agricultural production and the EU version of the OECD-FAO AGLINK-COSIMO model, used by the European Commission.

The two models are combined in a way that they capture the complexity of analysing multiple trade agreements at the same time and the details needed to explore the impacts on the agricultural sector in the EU. Both models are soft-linked through a sequential chain implementation. The MAGNET model provides the cumulative trade flow changes for all bilateral trade agreements considered. These trade data are fed into AGLINK-COSIMO which translates this new trade reality to the impact on EU agricultural market balances and prices.

The trade impacts, representing the cumulative effects, are translated as an exogenous shock in the disaggregated changes of EU import and export quantities in AGLINK-COSIMO. The AGLINK-COSIMO model is then run with the new trade patterns provisions, presenting the impact of the

trade scenarios on EU commodity balances and prices. In other words, the AGLINK-COSIMO is transformed to an EU standalone model which takes trade flows as given.

Due to the different structural characteristics of the model some assumptions are needed to assure a meaningful exchange of results between the two models. At first the percentage quantity changes in the trade flow from MAGNET are transposed to the disaggregated AGLINK-COSIMO sectors constituting this sector. Behind this model linkage lies the assumption that the observed baseline trade flows reflect the relative competitiveness of the disaggregated commodities within the complex. However, for some sectors the baseline trade flows do not depict relative competitiveness, but specific trade relationships such as TRQs or production/consumption preferences in FTA partners (e.g. sheep imports restricted to Australia and New Zealand). In such cases the model link has been altered based on earlier studies or on expert opinions about the most likely trade developments.

The dairy aggregate has been handled with extra care as it is crucial to the general model results. Besides some adjustments to assure the correct representation of offensive sectors such as cheese and SMP (Skimmed Milk Powder) and less competitive sectors such as butter and WMP (Whole Milk Powder), the trade flows were allowed to slightly changes from the MAGNET output to assure a closing fat and protein balance in the final production output mix.

While MAGNET is a recursive dynamic model run on five year period, AGLINK-COSIMO is a recursive dynamic model with an annual solution period. To reconcile the two time horizons, the different FTAs are stepwise introduced in MAGNET and the impact of these steps are evenly distributed over the different annual solution periods in AGLINK-COSIMO. This allows for a stable solution to develop respecting the information received from MAGNET.

# 3 Scenarios

A baseline to 2025 is built based on the DG AGRI outlook 2015-2025. Macroeconomic developments (GDP, population and oil price) are harmonized and exogenously imposed in both models. While population remain exogenous in the scenarios, GDP and world oil price become then endogenous in the scenarios while productivity parameters employed to calibrate GDP and world oil price become exogenous To replicate a similar agricultural production changes in MAGNET a sectorial productivity parameter endogenized, while to replicate net balance position taste change parameter and technical change parameter are endogenized. Finally, some of the most important agricultural bilateral flows are calibrated based on expert knowledge.

The paper focuses on 12 possible future trade agreements between the EU and the following countries: USA, Japan, Mercosur, Indonesia, Australia, New Zealand, Turkey, Mexico, Thailand, Philippines, Canada and Vietnam. We consider two trade scenarios with different levels of ambition: a conservative and an ambitious scenario. The two scenarios are based on a full tariff liberalisation and on a partial tariff cut for the lines representing the sensitive products. The trade agreements with Canada and Vietnam are modelled based on the outcome of the respective negotiations as regards tariff liberalisation; including the modelling of reciprocal bilateral TRQs granted under the two agreements.

The conservative and the ambitious scenarios differ in terms of the assumptions regards the percentage of tariff lines that will be fully liberalised under the agreements and the size of the tariff cut for the sensitive products. The conservative scenario for the other ten FTAs is defined as full tariff liberalisation for 97% of HS 6-digit lines and partial tariff cut of 25% for the remaining 3% of lines (sensitive products). The ambitious scenario is defined based on the same structure of the conservative one, but with the following key parameters: full tariff liberalisation for 98.5% of HS 6-

digit lines and partial tariff cut of 50% for the remaining 1.5% of lines (sensitive products). These assumptions are applied identically for all considered trade agreements and symmetrically for the EU and the relevant trade partners.

The percentage of liberalised lines must be dealt with at HS6 rather than at CN8 level, since all global trade models work with HS6, which is the most disaggregated level for the harmonised world trade nomenclature. The margin of manoeuvre to shield agricultural sensitive products is not identical when working at HS6 or CN8 level, since the share of agricultural lines on the total tariff lines is different in the two product nomenclatures. A 97% liberalisation at HS6 level leaves room for up to 21% of agricultural codes potentially sensitive to be excluded from full liberalisation and is thus roughly equivalent to 95.4% liberalisation at CN8 level for the EU. 98.5% liberalisation at HS6 level leaves room for up to 10.5% of agricultural codes potentially sensitive to be excluded from full liberalisation and thus roughly corresponds to 97.7% liberalisation at CN8 level for the EU.

For the ten considered trade agreements whose negotiations are not concluded yet, trade scenarios provide for a number sensitive tariff lines. The list of sensitive products exempted from full tariff cut can greatly vary in function of the agreement considered and can of course be different for the EU and for the relevant trade partners. Sensitive products do not necessarily have to be agricultural or agri-food products, but refer to any line of the HS6 nomenclature. For instance, in the negotiations with Japan, the EU does not have agricultural sensitivities. However, for most of the trade agreements covered by the study, agricultural lines represent the main share of sensitive products. The list of sensitive products has been established based on expert judgement of the relevant trade negotiators of the European Commission, based on the evidence of ongoing negotiations with trade partners or on the analysis of the respective sensitivities, carried out prior to the launch of the trade talks and finally on objective statistical indicators, notably the tariff revenue associated to each tariff line. The last criterion to select the sensitive products is based on a political economy model (Grossman and Helpman, 1994) where the selection of sensitive products is assumed to maximize a government objective function. Under specific assumptions, the optimal choice is approximated with a tariff revenue loss criterion, which greatly reduces the computational burden associated with solving the government optimization model (Jean et al., 2005). The tariff revenue loss criterion orders the tariff lines in terms of the expected tariff revenue losses due to trade liberalization, assuming observed traded quantities. Unlike the original approach of Jean et al. (2005), here the bilateral context has been added. The tariff revenue loss calculation is based on current tariffs as reported in the MacMap database (Guimbard et al., 2012) as ad valorem equivalents at the HS 6 digit and on current trade statistics from BACI-COMTRADE (Gaulier and Zignano, 2010).

The most recurrent categories of EU sensitive products are: cattle meat, other meat, rice, wheat, other cereals, sugar and dairy products. For some negotiations, individual tariff lines within a broader product category are selected, e.g. garlic, sweet maize within the fruit & vegetables category, ethanol (beverages and tobacco products), olive oil (vegetable oils), eggs (other animal products) starches, canned mushrooms, some preserved fruits, processed tomatoes, fruit juices, some sugar confectionary (other food). As far as EU trade partners is concerned, beyond well-known sensitivities emerged from trade negotiations or preliminary talks, the degree of knowledge about products potentially eligible for exemption from full tariff cut is somewhat more limited; therefore, the use of statistical indicators for the compilation of the sensitive products' list is more extensive in the case of third countries than for the EU.

The scenarios were implemented in MAGNET following a time step approach. The model run over three time steps from the base year (2011) to 2016 then to 2020 and finally to 2025. The tariff cut and TRQs associated with negotiations with Canada and Vietnam enter into force in 2016 and have all of their effects in place by 2020. The tariff cuts associated with the remaining FTAs enter into force in 2020 and show their impacts on the global economy by 2025. The tariff shocks are implemented via the TASTE (Tariff Analytical and Simulation Tool for Economists) program (Horridge and Laborde, 2008). TASTE reads the MAcMapHS6 database and transform scenarios about formula-based changes into files of percent change shocks to tariff rate. All the calculations take place at the HS6 level and are then aggregated to the appropriate model level. All shocks are implemented as linear cut of applied tariff.

The two simulated scenarios reduced the tariff barriers to trade by 2025. EU import tariffs for FTA partners show that when tariffs are already low, as in the case of other cereals, fruit & vegetables, oils & meals and beverages, the EU liberalization towards FTA partners is almost complete. Most of the sensitive products are then selected among sectors as rice, sugar, beef & sheep and pig & poultry meat, which have higher initial tariffs. On the export side the pattern is similar, where tariffs where already low are almost completely liberalized (oilseeds, fruit & vegetables). Partner countries are supposed to consider as sensitive commodities as wheat and cereals, sugar, pig & poultry meat and dairy.

# 4 Modelling results

Unless otherwise stated, all results of this analysis refer to the year 2025 and the impacts are mainly expressed as changes compared to the baseline. FTAs increase the access of the signing parts to each other's' markets by decreasing the cost of traded goods. This implies a change in the relative prices of these goods in the import and export markets eventually lowering the domestic prices of traded goods. Lower prices imply higher demand for those commodities and hence the FTA partners import more of that good. This effect is known as trade creation. On the other hand, while imports from and exports to the FTA partners increases, trade with third countries is likely to reduce since their commodities are relatively more expensive. This second effect is known as trade diversion. The results show that these two effects are not identical across the sectors. Dairy products, beef & sheep and pig & poultry meat are the sectors where that trade creation effect is quite significant. In contrast, trade diversion is not observed significantly for most sectors.

Figure 2 shows the trade impact of both scenarios in million euros, as determined by the MAGNET model. Trade impacts for beef & sheep are characterised by a significant increase in imports and a much more modest growth in exports, with an overall negative impact on the net trade position. On the contrary, the dairy sector displays net trade gains, particularly sizeable in the ambitious scenario. In the pig & poultry meat category, mixed impacts are registered: as will be discussed later, this corresponds to a situation of net trade gains for pork and losses for poultry. Further, significant net trade gains are registered for beverages and tobacco whereas overall changes are quite limited for the fruit & vegetable sector as a whole. The latter two sectors are not covered by the partial equilibrium model.

The altered trade relationships have a direct effect on the EU different agricultural markets. Sectorial impacts reflect the competitiveness of the sector in 2025 and are detailed further in this chapter. In this overview the situation in 2025 (after the implementation of all considered agreements) is compared with the current situation (2015). The black bar in Figure 3 and Figure 4 shows the projected change in the EU production value for the main agricultural commodities

between 2015 and 2025 based on the DG AGRI outlook. The coloured bars present the situation in 2025 under the ambitious and conservative scenarios. For the large majority of sectors, the expected evolution over the ten years baseline period is strongly positive and more significant than the incremental effect of the trade scenarios. For most dairy products, the expansion under the status quo is enhanced by positive trade opening, while for sugar and rice the positive market outlook is slightly reduced due to additional imports under both trade scenarios. Only for beef the effect of the trade scenarios comes on top the projected decline in production and price.

Dairy imports are dominated by export opportunities following easier access to the FTA countries. Export opportunities are diverse, but particularly good in Japan, the USA, Mercosur and Mexico. Within the dairy output mix, cheeses and skimmed milk powder (SMP) are the major sources of export growth. The extra demand on international markets leads to increases in both price and in production (Figures 5 and 6). The combined trade effects of all dairy products lead to an increase in EU milk production of 0.7% under the ambitious scenario and 0.2% under the conservative scenario at a significantly increased milk price level by 7% and 2% respectively. This leads to an annual increase of around 5.6 billion euros in market receipts for dairy farmers under the ambitious scenario.

The red meat sector is potentially the most affected by trade liberalisation; EU beef imports could increase by about 146 and 356 thousand tonnes under the conservative and ambitious scenarios,. The additional imports are dominated by Mercosur (essentially beef) and to a lesser extent Australia (beef and sheep) (Figure 7). In this particular study, the absence of TRQs reserved to individual trade partners allows Mercosur to overshadow imports from other less competitive exporters.

The additional volume of EU beef imports creates a direct downward pressure on EU producer prices. Moreover, the beef market is under additional pressure from the positive developments in the dairy market. In the EU, about two thirds of beef production stems from dairy herds. The positive price and production effect of the trade scenario on the EU dairy market indirectly leads to a higher availability of meat from the dairy herd at lower prices. The combined pressures on the EU market lead to a steep drop in beef meat prices, by 8% under the conservative scenario and 16% under the ambitious scenario. The lower beef price shifts EU meat consumption from other meats towards beef. Increased consumption, combined with additional exports, relieves the effect on EU beef production, which only declines by 1.4% under the most ambitious scenario and 0.5% under the conservative one.

The MAGNET model shows a diverse trade impact on the pigmeat and poultry group, which contains export potential and sensitivities towards increased imports. While the net effect on the trade balance is neutral under the conservative scenario, the impact becomes more negative when fewer EU tariff lines can be protected under the ambitious trade scenario. The EU's interest in an offensive trade strategy lies within the pork sector. The most promising export markets include Japan, Mercosur and the USA. The poultry sector, on the other hand, is sensitive to additional imports. These imports are dominated by Mercosur and Thailand (Figure 8).

Additional imports are the driving factor in the EU poultry balance. Imports increase by 48% and 20% under the ambitious and conservative scenarios, compared to the baseline in 2025. However, the effect on production is limited to -1.3% and -0.5%. Firstly, the additional imports are limited to about 3% of EU domestic consumption. Secondly, EU exports also increase, further alleviating the effect on the EU domestic market. While the EU is less competitive in cuts such as breast fillets it is

successful in exporting other cuts to nearby markets in the Middle East and Africa (Figure 9 and 10).

# 5 Limitations

One of the main limitations of the paper lies in the theoretical character of the scenarios, where possible trade concessions for sensitive products are implemented as tariff cuts (of 50% or 25%) rather than under the form of TRQs – as it is commonly the case in trade. This is due to the fact that the actual outcome of the majority of EU free trade negotiations considered in the paper is largely unknown at this stage. In particular, it would be extremely challenging to speculate about possible realistic volumes of reciprocal TRQ concessions for a large number of sensitive products. Instead, it is preferable to consider theoretical scenarios that can provide a range for possible cumulated impacts of the EU trade policy.

Furthermore, the considered trade scenarios only investigate the effects of tariff liberalisation, but do not factor in in the analysis the possible reduction of non-tariff measures (NTMs). In fact, since there are currently no reliable estimates of NTMs for the agricultural sector at disaggregated level, and given the limited time to complete the exercise, it was decided to omit them from the paper.

Finally, another issue that the paper was unable to take into account, although it could certainly have huge implications on EU free trade negotiations, is the possible impact of future developments related to the UK.

# 6 Conclusions

This report presents the simulations made with two different models of two alternative hypothetical versions of cumulative free trade agreement between the EU and third countries/regions. The CGE model, MAGNET, simulates the economy-wide impacts of the trade policy changes involving all sectors of the regional blocks. The partial equilibrium model, AGLINK-COSIMO, simulates only the impacts generated by changes in agricultural trade policy and incurred by the agricultural sectors. It considers individual agricultural products in more detail.

Two hypothetical scenarios have been simulated, and have been compared with the reference (status quo) scenario for the year 2025. The EU comprises the current 28 Member States and 12 FTAs include those recently concluded but not yet implemented, i.e. those with Canada and Vietnam, those under negotiation (with the USA, Mercosur, Japan, Thailand, the Philippines and Indonesia) and for which negotiations are likely to start in the near future (Australia and New Zealand). Finally, the modernisation of the older agreements with Turkey and Mexico are included to complete the current EU FTA agenda.

This study fills a knowledge gap, highlighted by the EU Member States, with regard to the state of the agri-food sectors in the light of further EU trade negotiations and agreements. It does provide insights for policy makers and negotiators, as a contribution to finding a good balance in further trade liberalisation. However, the model-based approach does not reflect all subtleties within agricultural trade (including environmental, sanitary or social regulations). More importantly, this study is not a forecast of the likely outcome of the successful conclusion of the 12 trade negotiations covered in the study. It is an exercise that takes a particular set of scenarios which may or may not be reflected in some or all of those negotiations, some or all of which may be concluded.

The study clearly illustrates the potential for European agricultural products on the world market. The potential gains for the dairy and the pigmeat sector are particularly sizeable, but a number of other products benefit from trade opening, ranging from commodities like wheat to more high value/processed products of the agri-food industry, such as alcoholic beverages (notably wine and spirits). The additional export demand enhanced by trade agreements could translate into an important source of growth, jobs creation and value added for the European agricultural and food sectors.

On the other hand, the study shows the vulnerability of specific agricultural sectors towards growing imports following increased market access. This is, in particular, the case for beef, rice and to a lesser extent for poultry and sugar. This confirms the EU concerns regarding the sensitive character of these products in a number of trade negotiations. The results for these sectors represent the impact of theoretical scenarios (tariff cuts of 50% and 25%) rather than the introduction of TRQs, which are commonly included in trade agreements for these sectors. The difference between the two approaches is clear in the case of Mercosur, which dominates the additional imports for beef, sugar and poultry as the tariff reduction simulated is very substantial compared to a TRQ approach. The study should therefore be interpreted as a reminder that these sectors need specific attention during the ongoing and future negotiation process.

Furthermore, the prominence of Mercosur exports, in particular in the beef sector, raises the issue related to the capacity of the region to fulfil the increasing export quantity estimated by the model. Bottlenecks in Mercosur supply and export infrastructures, as well as environmental constraints, could reduce their actual export capacity.

In any event, the successful conclusion of trade agreements, for both parties, will have to strike a balance between the protection of sensitive products and the achieved market access for offensive agricultural products. The overall result of trade negotiations should remain acceptable, economically and socially for EU agriculture.

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**Figure 1 - Methodological model chain**

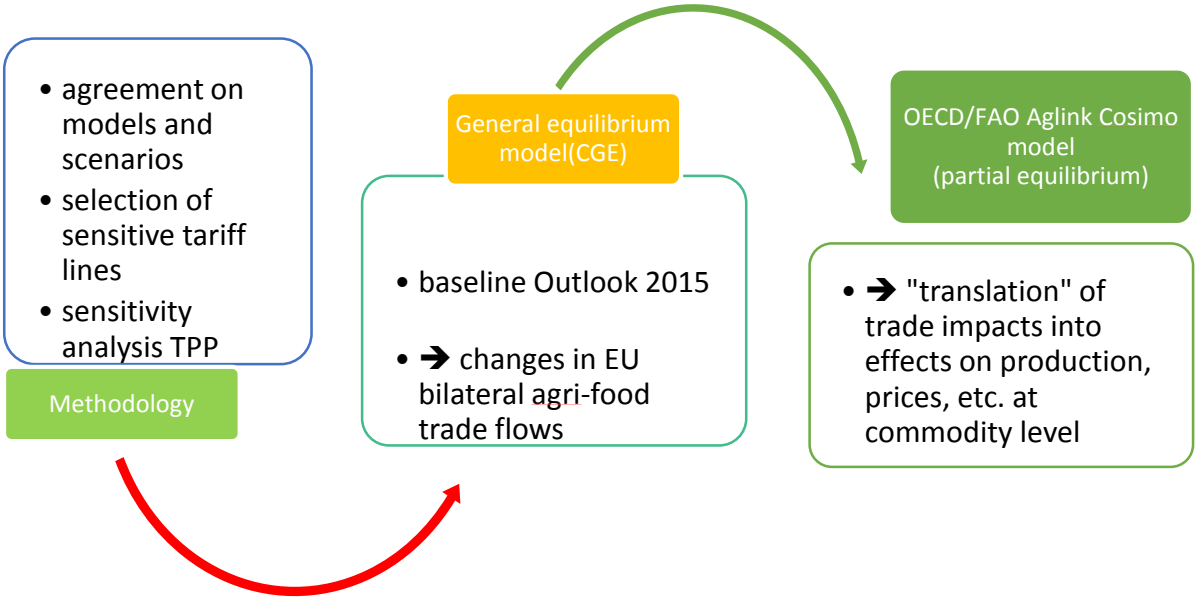
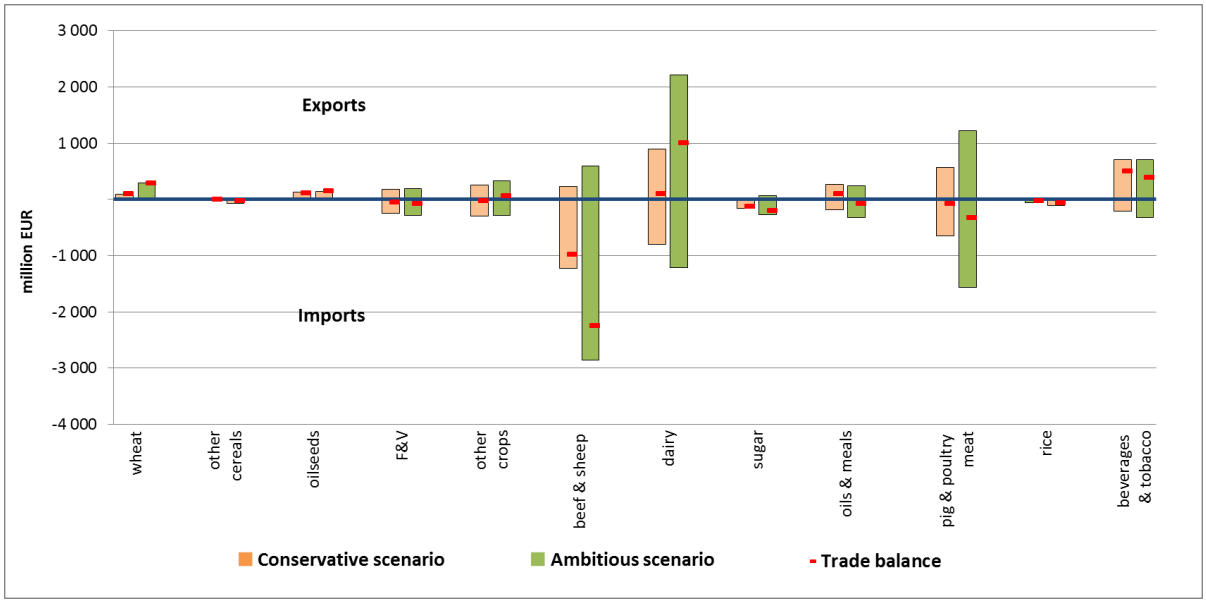
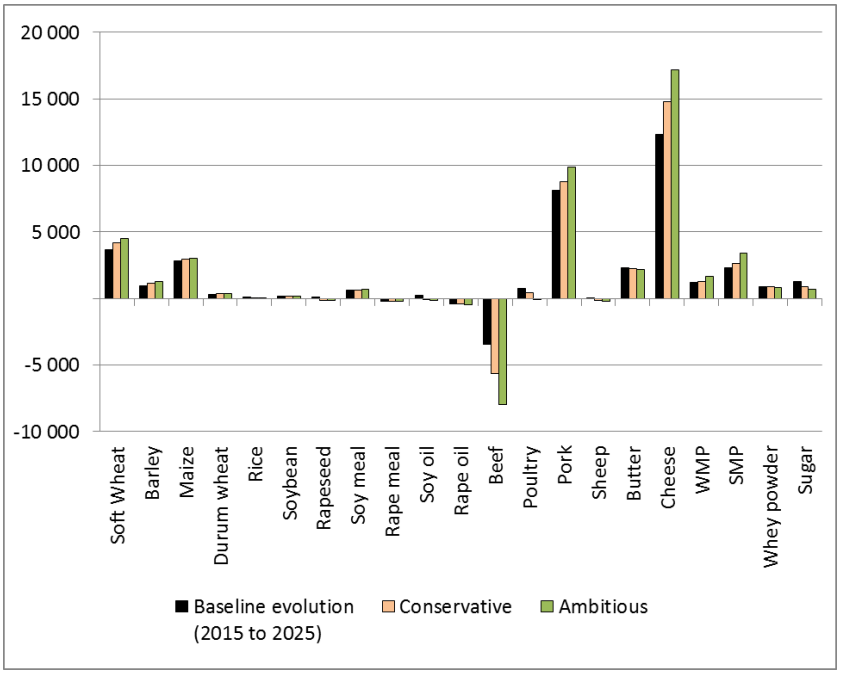



**Figure 2: Change in EU trade value of agri-food products by scenarios compared to the baseline (2025, million euros)**



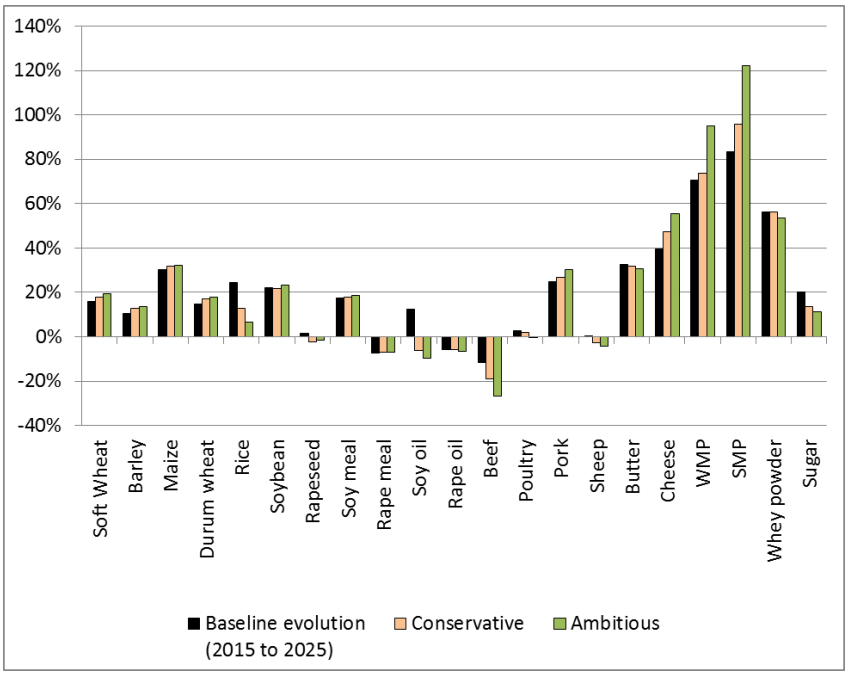

Source: Authors' calculation from MAGNET results

**Figure 3: Change in EU production value by scenarios compared to 2015 (2025, million euros)**



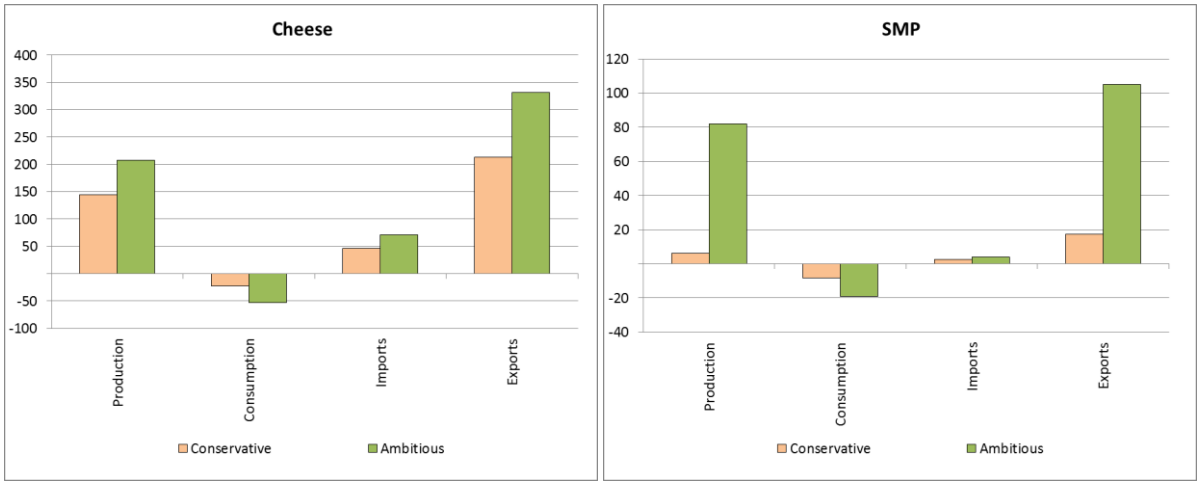

Source: Authors' calculation from AGLINK-COSIMO results

**Figure 4: Change in EU production value by scenarios compared to 2015 (2025, %)**



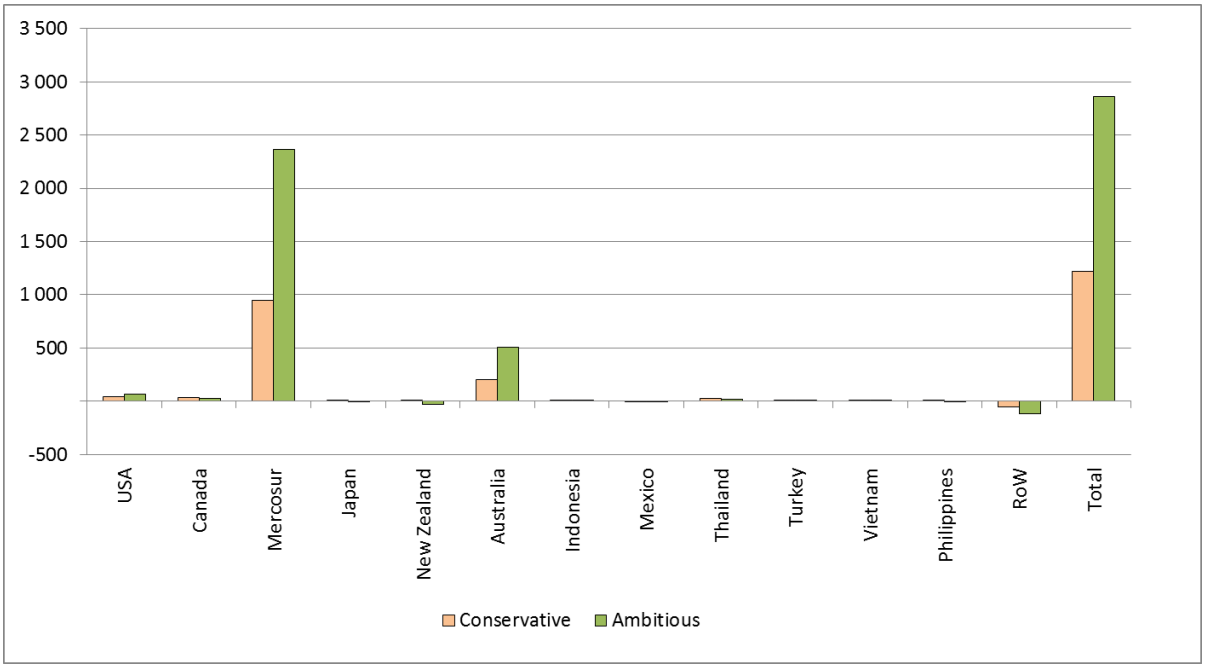

Source: Authors' calculation from AGLINK-COSIMO results

**Figures 5 and 6: Change in EU cheese and SMP balance sheet by scenarios compared to the baseline (2025, thousand tonnes)**



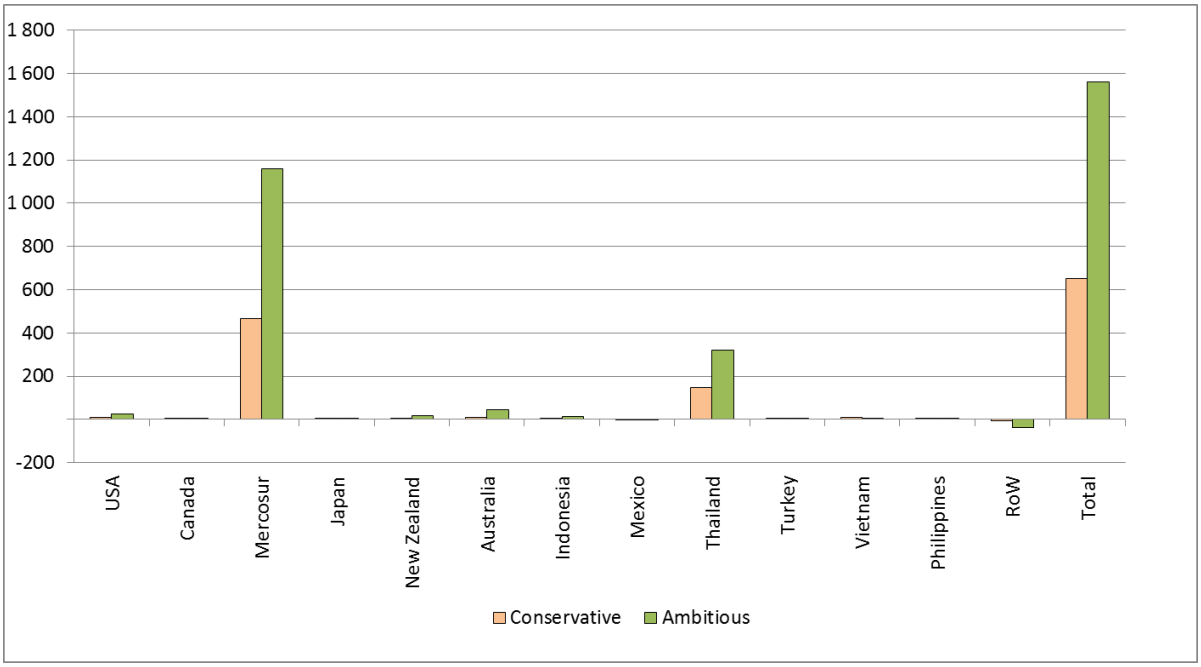

Source: Authors' calculation from AGLINK-COSIMO results

**Figure 7: Change in EU imports value of beef & sheep meat by origins and scenarios compared to the baseline (2025, million euros)**



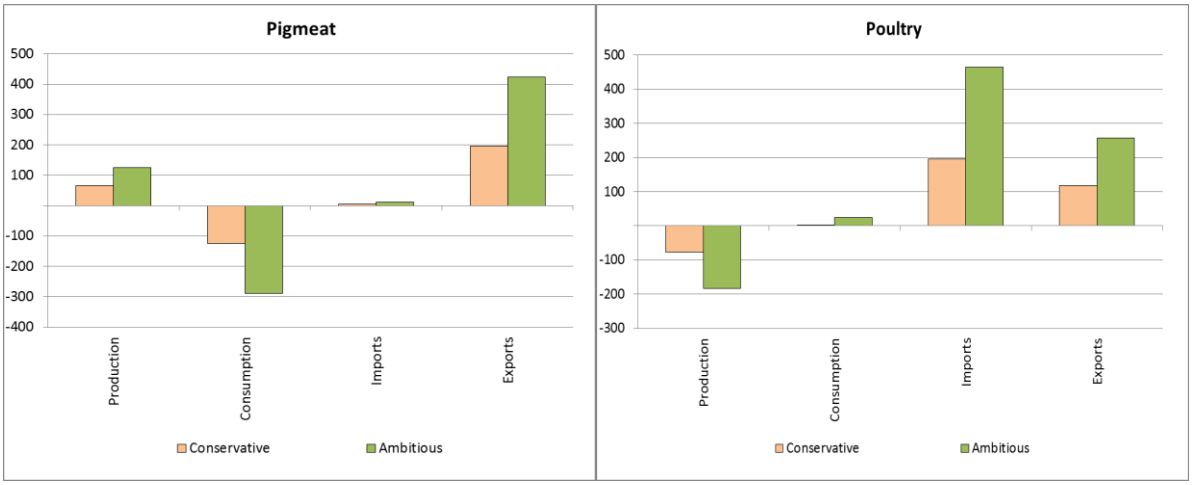

Source: Authors' calculation from MAGNET results

**Figure 8: Change in EU imports value of pigmeat and poultry by origins and scenarios compared to the baseline (2025, million euros)**




Source: Authors' calculation from MAGNET results

**Figures 9 and 10: Change in EU pigmeat and poultry balance sheet by scenarios compared to the baseline (2025, thousand tonnes)**




Source: Authors' calculation from AGLINK-COSIMO results