

Below you find a summary of our GTAP-related activities last year and our projects for this year. In general our activities can be distinguished in three broad categories: scenarios, climate-change policies and trade and integration, see also our website: <http://www.cpb.nl/eng/research/sector6/>.

Apart from our research projects the restructuring of our organization was one of the central issues this year. First of all, the twenty units (consisting of 5 to 6 persons) merged into 6 sectors. As a result we have now one sector International Economics, which includes short-term analysis and structural analysis instead of three separate units. The idea is that the larger sectors have more flexibility for attracting research projects and setting up research teams. It is still unclear what this implies for the three categories of research related to CGE modeling and the GTAP data. More people will be involved in these research themes, however, the ones that worked fulltime on these issues, spend also time on other projects now. It is however clearly stated that our CGE model WorldScan as an asset that will be employed the coming years.

Scenarios

- Four Future of Europe (published october 2003, <http://www.cpb.nl/eng/pub/bijzonder/49/>)
This study develops four scenarios on the future of Europe. They serve as tools for analysing these questions. Moreover, the study elaborates on the policy agenda of international organisations and European governments in response to the various challenges during the next two decades. Early 2003 we will publish a broad study of long-run trends and scenarios with a clear emphasis on the European economies. This study will pay special attention to pressure on European welfare states and to the problem of subsidiarity in four areas (Stability Pact, migration, fiscal harmonization and Social Europe). The Future of Europe develops four elaborate stories that sketch possible future worlds. Using our applied general-equilibrium model WorldScan we will quantify various aspects of these four scenarios, ranging from growth rates to trade patterns and from real interest rates to migration flows.
- Quantifying Four Scenarios for Europe(<http://www.cpb.nl/eng/pub/document/38/>)
This document quantifies the scenarios developed in Four Futures for Europe using our CGE model WorldScan.
- Four futures for energy markets and climate change(<http://www.cpb.nl/eng/pub/bijzonder/52/>)
Future developments in energy and climate are highly uncertain. In order to deal with these uncertainties, we developed four long-term scenarios based on the recently published economic scenarios Four Futures of Europe: STRONG EUROPE, GLOBAL ECONOMY, TRANSATLANTIC MARKET and REGIONAL COMMUNITIES. In this study, we explore the next four decades. Although the report focuses on Europe, global aspects of energy use and climate change play a significant role. The next decades, global reserves of oil and natural gas will likely be sufficient to meet the growing demand. Therefore, there is no need to worry about a looming depletion of natural energy resources. The use of fossil energy carriers will, however, affect climate because of the emissions of greenhouse gasses. In order to mitigate global increases of temperature, emissions of greenhouse gasses should be reduced. Developing countries should contribute to that effort. On the one hand they will be major emitters in the near future, on the other hand they have the low-cost abatement options.

Climate change policies

- Mocking at MACs - Why we should prefer a CGE-model above a marginal abatement curve
This paper gives a critical assessment of marginal abatement curves (MACs). MACs relate

efforts to reduce the emissions of greenhouse gases to (marginal) reduction costs. As such, MACs can be seen as a reduced-form relation of a full-fledged computable general equilibrium model (CGE-model). MACs provide a quick and easy tool for the analysis of climate change policies and the comparison of models. However, one should be cautious in using MACs. We show that a CGE-model can be preferred in many respects. MACs tell only part of the story. Important spillover effects like carbon leakage are neglected. Also, there is no direct linkage between abatement costs, as can be derived from MACs, and more genuine measures like GDP or welfare. The latter is especially true if distortionary energy taxes are taken into account. Given these limitations, the use of MACs is only warranted if the curves are robust. However, it is shown that a country's abatement curve depends on the climate policies in neighboring countries and on the underlying reference scenario. The MACs in this paper are derived from WorldScan, a multi-region, multi-sector computable general equilibrium model (CGE-model). We disentangle the relation between MACs and the macroeconomic effects as derived from a CGE-model. In a number of subsequent steps we show how distortionary taxes and trade spill-overs drive a wedge between direct marginal abatement costs and GDP-effects. In general the direct abatement costs based on a MAC underestimate the 'true' GDP-effects as derived from a CGE-analysis. By means of a range of policy simulations we assess the robustness of MACs. Concerted action by a number of regions will shift MACs and the costs downwards.

- Post-Kyoto policies

At the request of the Dutch Ministry of Spatial Planning, Housing and the Environment CPB has, in close collaboration with the National Institute for Public Health and the Environment, undertaken research on post-Kyoto measures. Using WorldScan, the economic consequences are assessed of different reduction targets, for alternative international coalitions, against several backgrounds for long-term economic developments. The economic consequences of reducing emissions in 2020 with 30% compared to 1990 receive special attention, as Dutch parliament has explicitly asked for such an assessment.

- European system of tradable emission permits

CPB intends to explore the costs of emission reductions with a European system of tradable emission permits, taking explicitly into account existing energy taxes in EU member states. Using WorldScan, costs and benefits of the system of emission trade for separate sectors are assessed as well. In this project we closely collaborate with the Swedish National Institute of Economic Research (NIER) and the Research Institute for the Finnish Economy (ETLA). The study is part of a much larger project, Tax/benefit systems and growth potential of the EU (TAXBEN), which is funded by the Sixth Framework Programme of the European Commission.

Trade and Economic integration

- The EU internal market in services (in progress)

EU commission published a report which made clear that the common market in services has not been very successful so far. Market integration in services is hampered by myriads of technical and legal barriers. This project analyses the sectoral and macro-economic consequences of lower and less barriers using WorldScan.

- Assessing the economic implications of Turkey's accession to the EU

<http://www.cpb.nl/eng/pub/document/56/>

This paper explores the economic consequences of the enlargement of the European Union with Turkey. Following Lejour et al., we adopt a gravity approach to estimate existing trade barriers between the EU and Turkey. We then adopt a CGE model for the world economy, called

WorldScan, to explore the economic implications of removing these trade barriers. This reflects the Turkish accession to the internal market. In this way, the economic implications for fifteen industries in several European countries are assessed. We also elaborate on the implications of immigration flows from Turkey for European labor markets.

- Spillovers of reforms and higher growth in Europe (GTAP conference)

The Stability Pact is intended to impose budgetary discipline on the members of the European Union. One rationale is that the upper boundaries on deficit and debt direct the member states towards structural reforms in products and labour markets (rather than towards postponing difficult choices by financing public, social expenditure with public debt). This assumes that a European externality exists: the other member states benefits from reforms and higher growth in one member state. This externality is not entirely obvious. Does a member state in which factors are fully employed, benefit from higher growth elsewhere in Europe? Or, the other way around, is it possible for the smaller EU countries to grow fast when the three largest members – France, Germany and Italy – postpone reforms and follow a trajectory with historically low growth? This question – in different forms – is central in this paper.

Supposing that Germany, France and Italy see – separately or joint – production increase, we have run the WorldScan model to the effects on income and production in other (European) countries. We give particular attention to two potential spillovers: terms-of-trade, and R&D spillovers

Other activities

- Improvement for IO table for the Netherlands for GTAP version 6 in a fruitful collaboration with LEI taking account of re-exports.
- Organisation of GTAP conference last year together with LEI and Joe Francois.
- New work: improving capital shares in GTAP data, in particular for OECD countries by including (imputed) wages for self-employed in the labour income share.