

WP 9 Policy assessments making use of the new dataset

Work package number	WP 9				Start date or starting events:	13		
Work package title	Policy assessments making use of the new database							
Activity Type	RTD							
Beneficiary number	4	9	10	11				
Person-months per beneficiary	15	13	16	15				

Objectives

The purpose of this work package is (a) to promote contacts between modelers and data providers in order to enhance the applicability of WIOD data for use in established policy-oriented models, (b) to improve the models by using the new WIOD data, and (c) to exploit the WIOD-database to better gear existing models to the actual assessment of specific policies and developments. Most of the models concerned (GEM-E3, Nemesis, PACE and WorldScan) are used in-house by the EC for policy analyses (or scheduled to become used in this way through the MODELS project). Thus, the work package explores the potential benefits of the new datasets for policy assessments within the EC. The models are multi-country and multi-industry models, of the computable general equilibrium (PACE, GEM-E3, WorldScan) or the macro-econometric (Nemesis) type. PACE, GEM-E3 and Nemesis include detailed representations of the energy and environmental systems; the environmental coverage of WorldScan is limited to greenhouse gas emissions. The policy assessments vary by model. The PACE and GEM-E3 models will study selected policies for sustainable development and those particularly related to the Lisbon agenda. Nemesis will address policies in support of the Lisbon agenda, too, and focus in particular on assessments of the policy objectives to enhance knowledge. WorldScan will focus on the economic role of human capital development and pays special attention to the impacts of the rise of human capital in large, fast-growing countries (such as China and India) under globalization. Thus, a spectrum of policy fields will be addressed using the unique dataset constructed in the project.

Description of work

The tasks for all four modeling teams involve (1) to give feedback to the database construction part within WIOD (and to find additional data where necessary) such that the datasets become most valuable for the impact assessments envisaged, (2) to adapt the models to the new possibilities implied by the datasets, (3) to explore the usefulness and benefits of this approach by actually performing the impact assessments, and (4) to deliver the adapted model versions to the counterparts within the EC that use the models for policy analyses.

Task 9.1: Feedback on the data construction activities and extension of the datasets in view of the impact assessments envisaged (partners 9,10 and 11 are involved)

Comments and feedback on data construction from the modeling teams involved will be summarized and database extensions that are needed specifically for the policy assessments envisaged will be described and made available to the other partners.

1. The team of GEM-E3 will check the consistency of the dataset with the current model set-up, complement the dataset with the additional data that the model requires and extend the current calibration program to account for the new information that WIOD will yield on the productivity of production inputs;
2. The Nemesis team will in particular use the new IO tables and reorganize the data such that they become consistent with the accounting framework of the model;
3. Similarly, the WorldScan-team will perform checks to ensure that the new data will remain consistent with the model set-up and collect if necessary additional data on skills, in particular with a view to represent the complementary of specific labor skills with R&D capital stocks as inputs for industry-level production.

Task 9.2: Model adaptations (partners 9,10 and 11 are involved)

Model adaptations that (a) have come within reach with the new datasets from WIOD, and (b) are useful to implement with a view to the policy simulations envisaged will be conducted and documented.

4. The GEM-E3 team will exploit the datasets for re-specification and econometric re-estimation of the model's production functions, Armington structures, extended consumer expenditure systems and investment equations; next, an advanced version of GEM-E3 will be built, reflecting endogenous technological progress, knowledge and human capital and multiple categories of labor and capital stocks.
5. The new data will be used by the Nemesis team in order to re-specify and to re-estimate endogenous technical progress in the production functions that depends on R&D, learning curves and skilled labor inputs; moreover, the new IO tables will allow to endogenize the technical coefficients and thus to improve the production block.
6. The WorldScan team will re-specify, re-calibrate and re-estimate where appropriate the model's production structure to reflect various skills and different types of capital; the team will especially attempt to re-specify the model such that the demands for dedicated labor skills will be reflected that are required in R&D activities.

Task 9.3: Policy analyses (partners 4, 9,10 and 11 are involved)

Assessment of specific policies and developments will be conducted and documented. The exact list of policy questions will be defined at a later stage in order to match with the policy agenda of the EC.

7. The advanced model version of GEM-E3 will be used to study policy questions that are in the core of the Lisbon agenda and the recent EU strategic decisions on mitigating climate change.
8. The new version of Nemesis will in general be used to assess policies related to the Lisbon Agenda. The main Lisbon policy applications will be in the field of 'Knowledge Economics', reflecting policy objectives in the field of R&D, training and education
9. The version of WorldScan adapted to reflect the formation and productivity of human capital will focus on the impacts of rising human capital stocks in large, fast-growing countries under globalization and indicate the policy implications for the EU.
10. The PACE model (adapted in WP7) will be used to address the effects of policy measures like the recent EU energy package, taking into account that environmental consequences of policy measures can be affected by induced innovation.

Task 9.4: Model delivery to the EC (partners 4, 9,10 and 11 are involved)

The model versions used in Task 9.3 will be delivered to the respective model clients within the EC.

Partner 4 (ZEW) will be responsible for all deliveries that relate to the PACE model. Partner 9 (CPB) will be responsible for all tasks that relate to the adaptation, usage and delivery of WorldScan and for the overall management within this work package. Partner 109 (ICCS) will be responsible for these tasks concerning GEM-E3. Partner 11 (CRSA) will be responsible for the tasks related to Nemesis.

Deliverables

D9.1 (month of delivery: 16): Report on comments, suggestions and extensions needed in view of the policy assessments envisaged

D9.2 (month of delivery: 24): Report on model adaptations to GEM-E3

D9.3 (month of delivery: 24): Report on model adaptations to Nemesis

D9.4 (month of delivery: 24): Report on model adaptations to WorldScan

D9.5 (month of delivery: 36): Report on the impacts of selected policies for sustainable development with particular reference to the policies on the Lisbon agenda

D9.6 (month of delivery: 36): Report on the impacts of selected policy objectives on the Lisbon agenda, in particular those aiming to enhance knowledge

D9.7 (month of delivery: 36): Report on the economic role of human capital development, with special emphasis on the impacts of the rise of human capital in large, fast-growing countries under globalization

D9.8 (month of delivery: 36): Report on the influence of induced technological progress on the environmental effects related to specific environmental taxes

The following deliverables are operational model versions to be delivered to the respective model clients within the EC:

D9.9 (month of delivery: 36): The adapted version of GEM-E3 as described in D9.2 and used for the policy analysis of D9.5

D9.10 (month of delivery: 36): The adapted version of Nemesis as described in D9.3 and used for the policy analysis of D9.6

D9.11 (month of delivery: 36): The adapted version of WorldScan as described in D9.4 and used for the policy analysis of D9.7

D9.12 (month of delivery: 36): The new PACE model as described in D7.6 and used for the policy analysis of D9.8