

Do Economic Models Tell Us Anything Useful About Cohesion Policy Impacts?

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Challenges

- **Complexity of goals**: Promote accelerated growth and development in lagging member states and regions – is ambitious, and draws on economic and other research that is still at an early stage of its evolution.
- **Complexity of policy instruments**: Individual projects, measures, operational programmes and the entire investment package taken as a whole.
- **Complexity of context**: Serves as a warning against simplistic evaluations and premature judgements.
- **Complexity of models**: Needed to deal with these evaluation challenges.

The Agenda

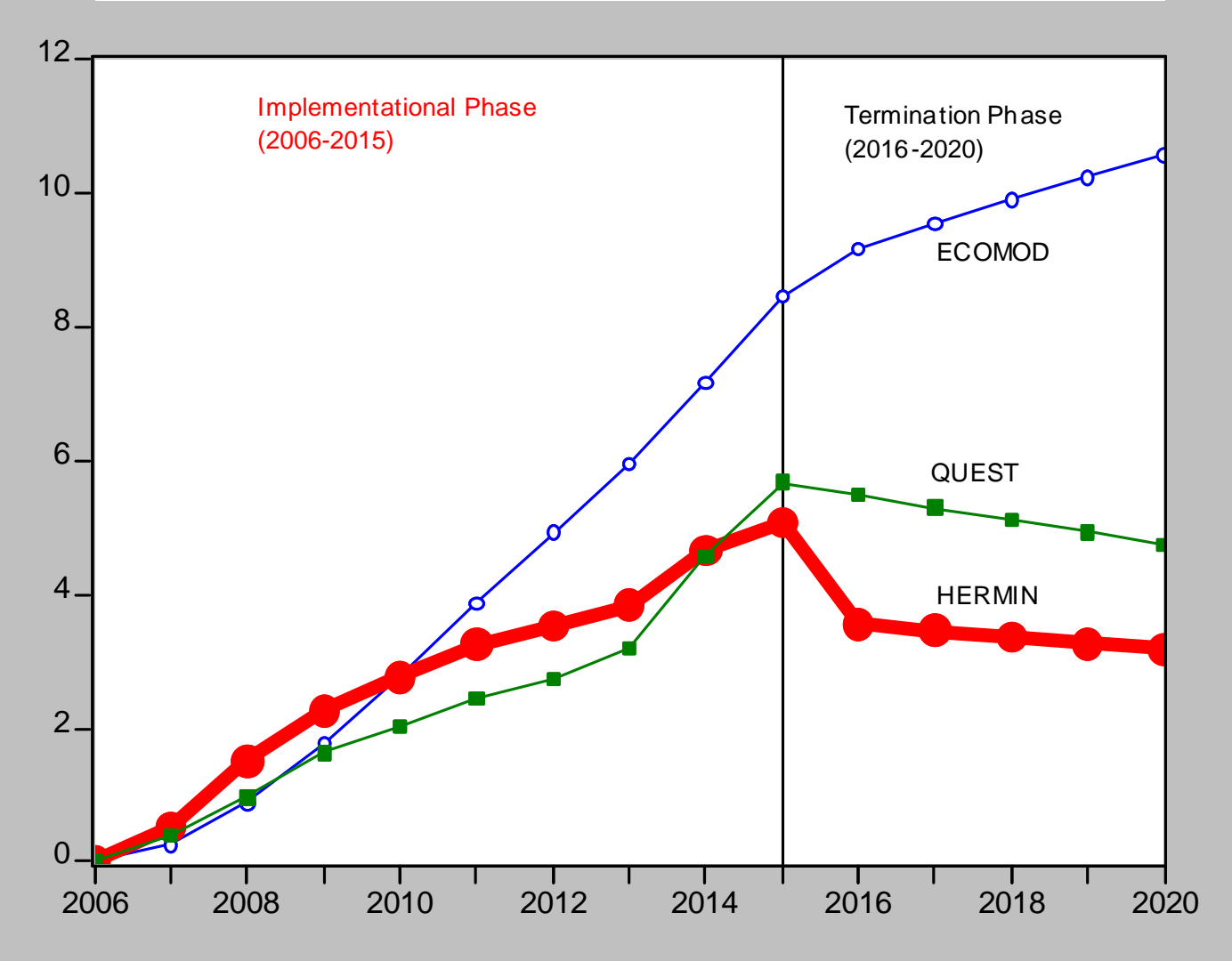
Three model-based evaluations of Cohesion Policy impacts were produced for the *4th Cohesion Report in 2008*

- *QUEST II* model of DG-ECFIN,
- *ECOMOD* model of ULB/EcoMod Partners and
- *COHESION* system of *HERMIN* models of GEFRA/EMDS.

We stand back from technical aspects of the analysis in order to identify and describe the logical stages of Cohesion Policy analysis to isolate specific areas where evaluators may legitimately differ from each other.

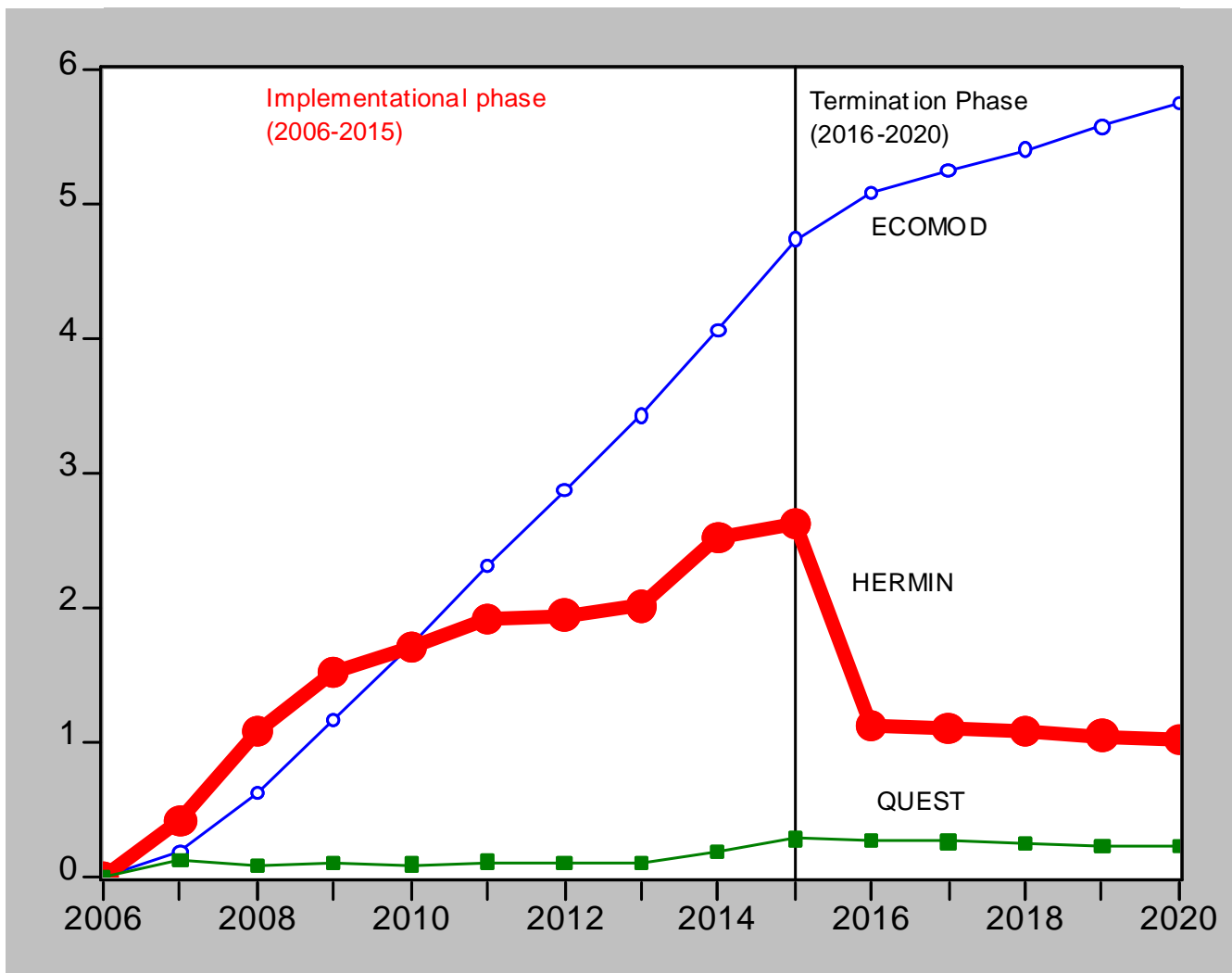
In light of the radically different policy impact results obtained from these three models, we need explanations.

GDP level impacts for Poland: ECOMOD, QUEST & HERMIN (percentage deviation from baseline)



Source: ECOMOD (2007) DG ECFIN (2007), GEFRA/EMDS (2007)
Remark: QUEST figures for 2016 to 2019 follow from a linear interpolation.

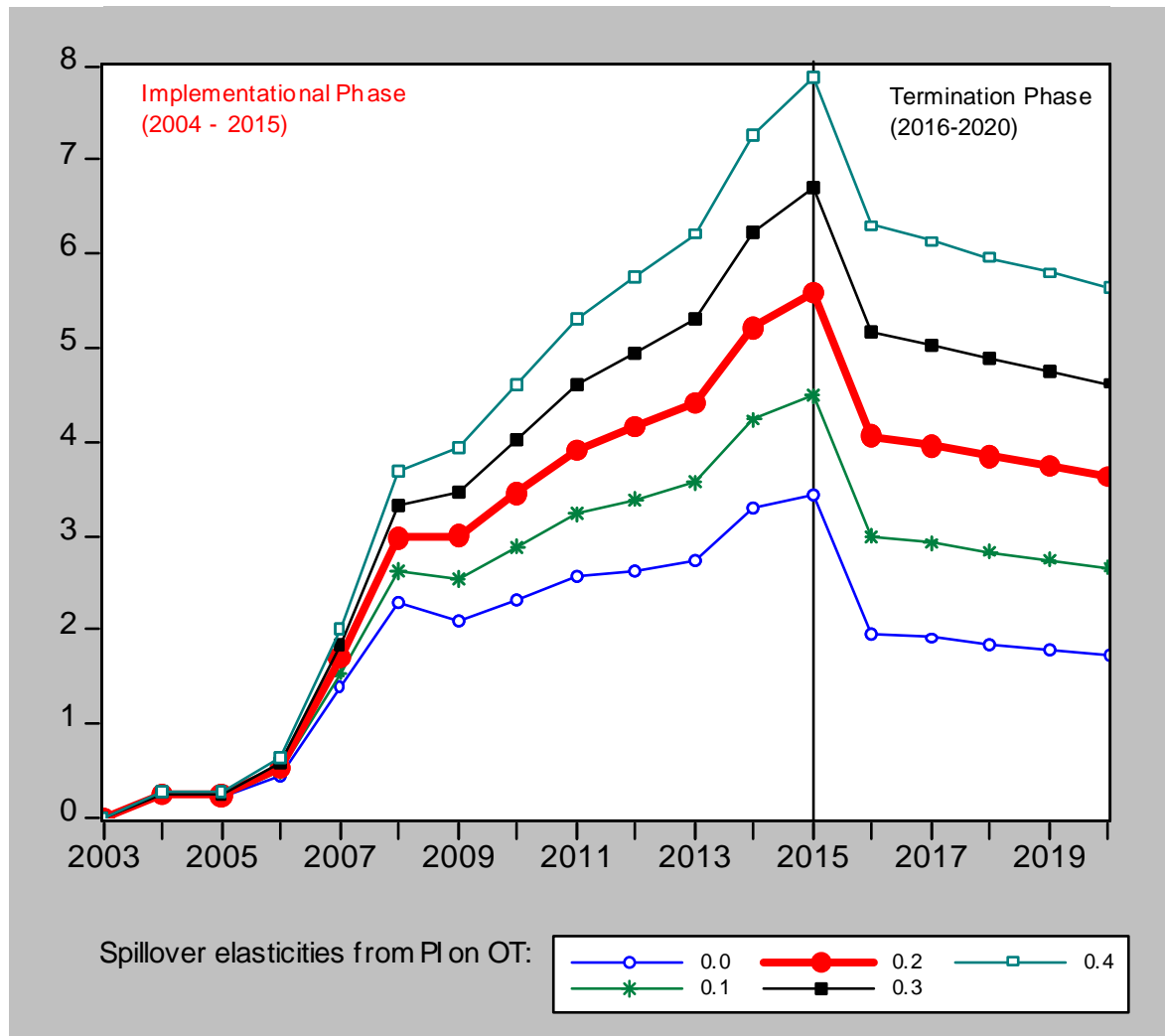
Total employment impacts for Poland: ECOMOD, QUEST & HERMIN (percentage deviation from baseline)



Source: ECOMOD (2007) DG ECFIN (2007), GEFRA/EMDS (2007)
Remark: QUEST figures for 2016 to 2019 follow from a linear interpolation.

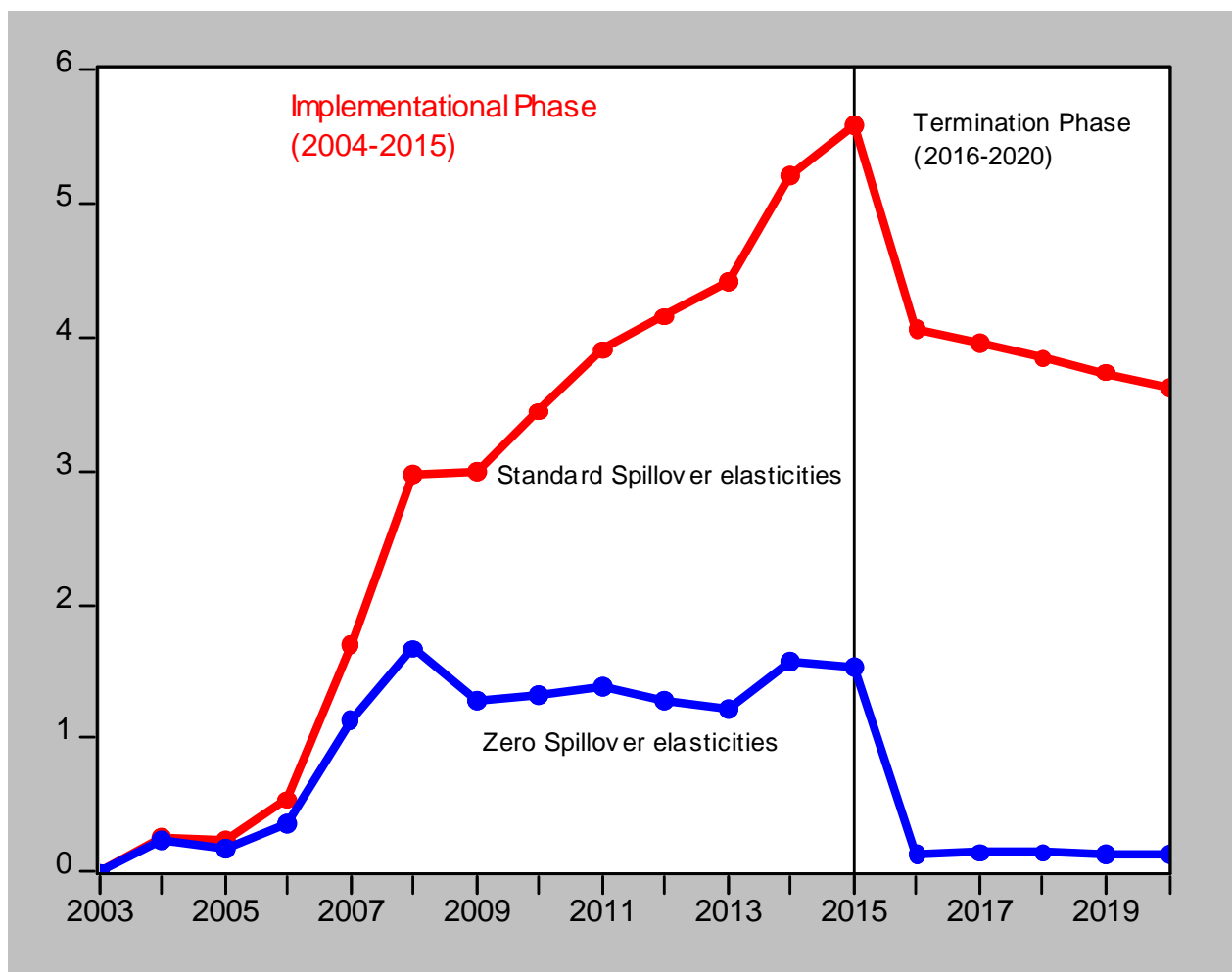
Sensitivity to infrastructure spillover-effects: (Impact on total GDP as a percentage deviation from baseline)

Consequences of a range of assumptions on the economy-wide spillover-effects from Physical infrastructure improvements on manufacturing for Poland



Pure “demand” versus “demand+supply” effects (GDP impacts as percentage deviation from baseline)

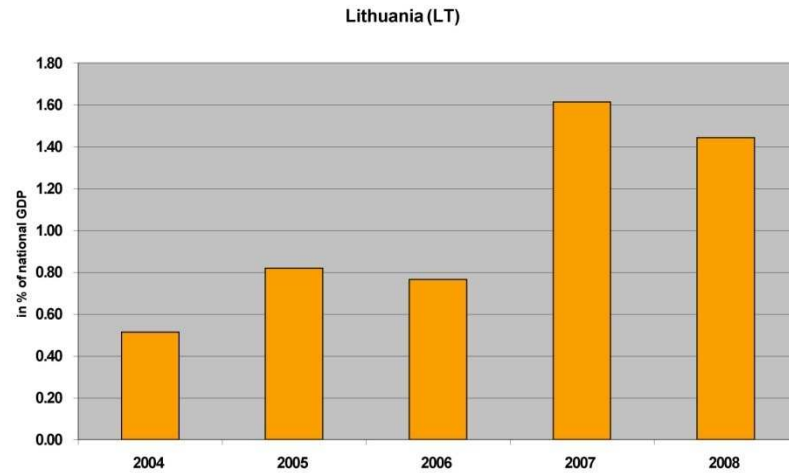
The economy-wide impacts from all spillover elasticities set to standard values (demand + supply) compared to zero spillover elasticities (demand only):
Poland



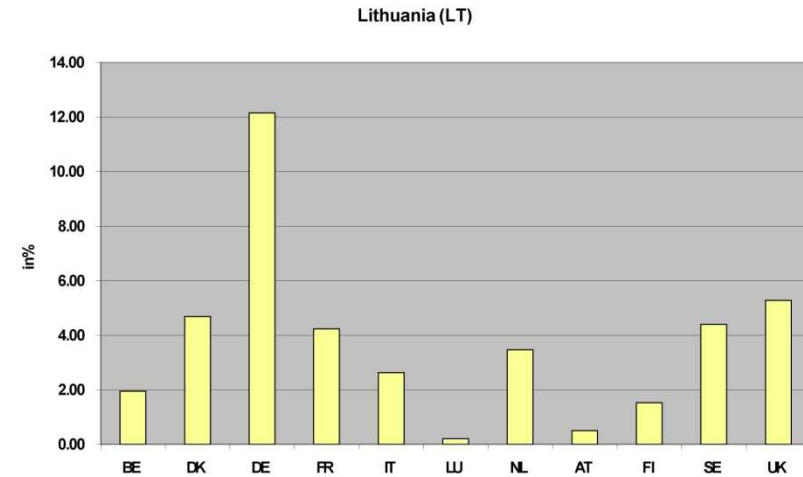
Source: GEFRA/EMDS (2007)

LT - Lithuania

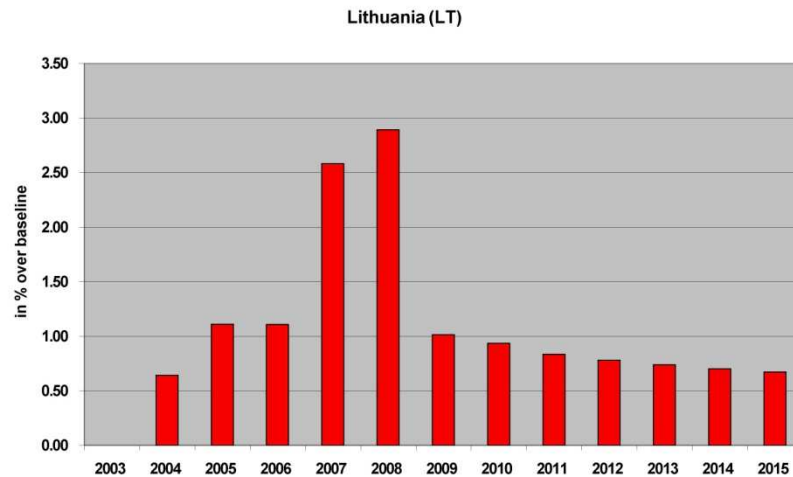
a) EU Cohesion Funding



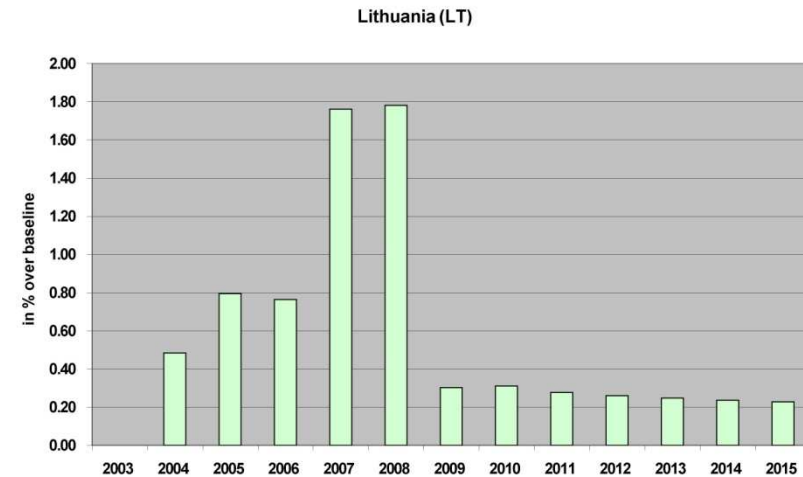
b) Exports to net donor countries, 2007



c) GDP Effect

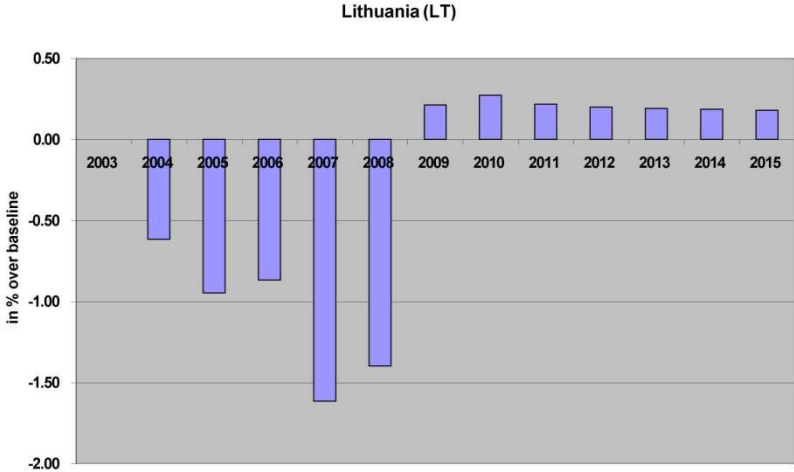


d) Employment Effect



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e) Net Trade Balance Effect

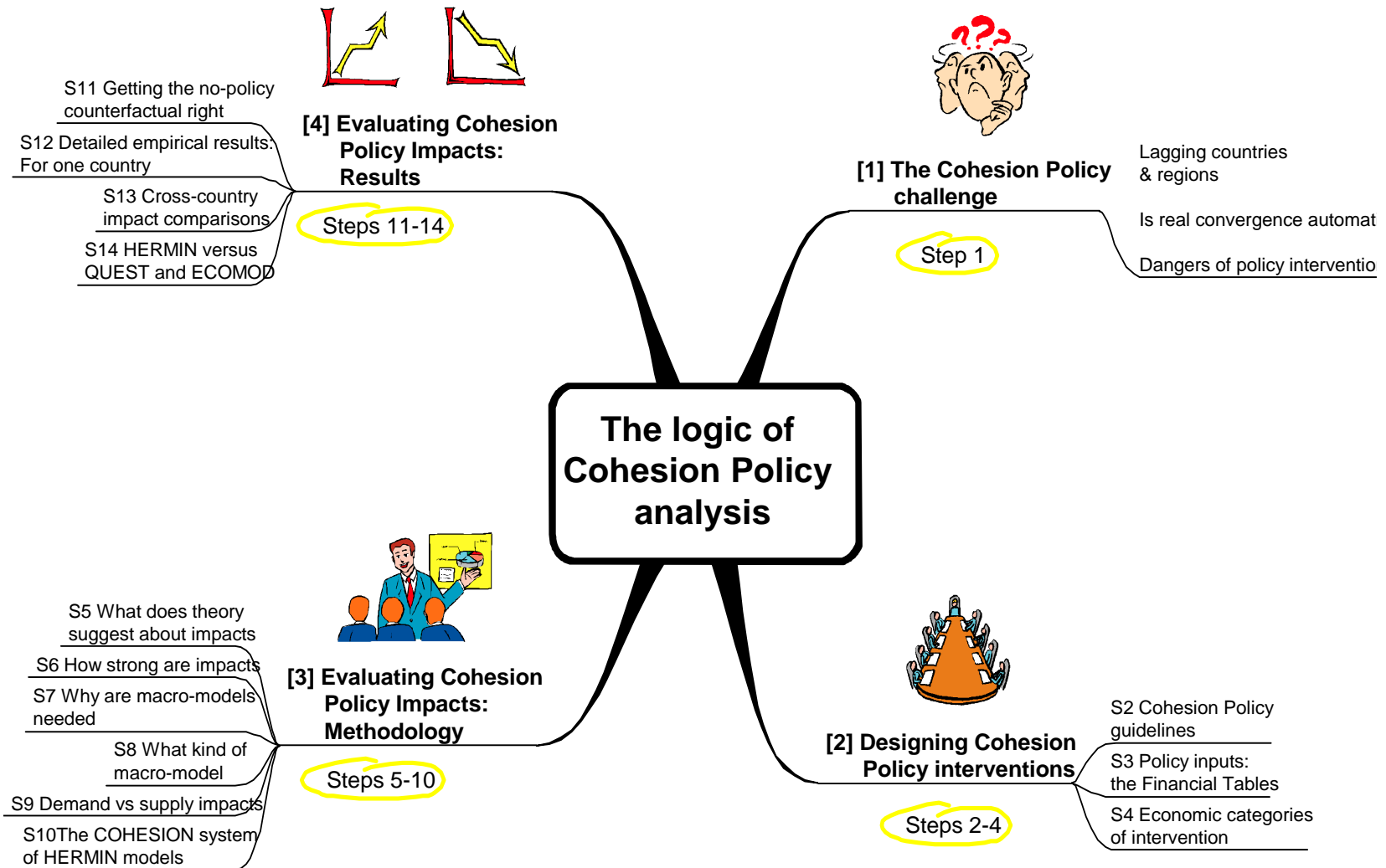


Logic of Cohesion Policy analysis

Fourteen steps, collected into four phases

- **Phase 1:** The Cohesion Policy challenge
- **Phase 2:** Designing Cohesion Policy interventions
- **Phase 3:** The methodology of Cohesion Policy impact evaluation
- **Phase 4:** The presentation and interpretation of results

The logic of Cohesion Policy analysis



Phase 1:

The Cohesion Policy challenge

Step 1: The main characteristics of the lagging economies, compared with the “advanced” EU economies.

- **Why are they lagging?**
- **Could they catch up simply through participating in the integrated Single Market?**
- **What are the specific barriers to convergence that need an EU policy initiative like Cohesion Policy?**
- **How much can we learn before we commit to modelling frameworks?**

Phase 2:

Designing Cohesion Policy interventions

- **Step 2**: Role of the NDP/NSRF process. Commission guidelines. How have the national governments carried out this task? What techniques were used to select measures within OPs (CBA, micro-scoring, etc.)? How good is the local institutional capacity?
- **Step 3**: The CP financial plan, and the manner in which one maps the administrative OP categories into three economic categories. Why do we need to identify the main economic categories of investment that are drivers of faster convergence?
- **Step 4**: Transforming investment flows into stocks. How can be construct simple measures of the CP-induced stock of PI, HC and R&D? How do these compare to the “no-CP” stocks?

Phase 3:

Evaluating Cohesion Policy

Interventions: Methodology (1 of 2)

- **Step 5: Economic theory and the role of PI, HC and R&D investment? How do these policies promote growth?**
- **Step 6: Given theoretical role of PI, HC and R&D, what does empirical research literature tell us about the strength of these drivers? Why we should not be too agnostic! How can we map these driving forces into equations that determine sectoral output and productivity?**
- **Step 7: Why do we need a macro model to encompass the above mechanisms into an overall macroeconomic system? What extra does the model add to the evaluation process?**

Phase 3:

Evaluating Cohesion Policy

Interventions: Methodology (2 of 2)

- **Step 8**: What are the key characteristics of the CP recipient countries? What kind of model best captures these characteristics?
- **Step 9**: How to handle demand and supply impacts that arise during implementation and after termination? Given the known characteristics of the recipient states, what would we expect? Crowding out? Crowding in?
- **Step 10**: How different models address questions of sectoral disaggregation on the production side of the economy (e.g., QUEST, ECOMOD, HERMIN, etc.). Can these differences be subjected to empirical testing? Which approach is more plausible?

Phase 4: Evaluating Cohesion Policy interventions: results

- **Step 11**: Getting the “no-Cohesion Policy” counterfactual right: zero domestic policy substitution; full substitution; partial substitution.
- **Step 12**: How to analyse CP impacts
 - (1) The no-CP baseline under two different assumptions: zero substitution and full substitution.
 - (2) The with-CP CASE B simulation, using “standard” spillover parameters
 - (3) Compare the “with-CP” to the two counterfactuals
 - (4) Sensitivity analysis on the spillover parameters
- **Step 13**: Comparing country results and different models.
- **Step 14**: Why do the models produce different results? What can be done about it?

Areas of broad agreement (1 of 2)

- **Step 2: *Cohesion Policy guidelines***: Modellers are asked to evaluate the Commission's policy, and not any alternative.
- **Step 3: *Cohesion Policy financial inputs***: These public investment policy instrument settings must also be accepted by all groups.
- **Step 4: *Economic classification of policy instruments***: All modelling groups accept the three-way classification into physical infrastructure, human resources and direct aid to firms (of which R&D is a sub-component)

Areas of possible broad agreement (2 of 2)

- **Step 5: *Economic theory and public investment***: New growth theory and economic geography provide insights. There is likely to be a lot of common ground here.
- **Step 7: *Why are models needed***: All three modelling groups accept that the role of models is to place the Cohesion Policy interventions in a wider macro context, where macro and other spillover impacts can be examined.
- **Step 11: *The “no Cohesion Policy” counterfactual***: The counterfactuals are seldom discussed explicitly, and there may be some differences of interpretation as to the most appropriate counterfactual to adopt.

A range of different “no-Cohesion Policy counterfactuals are possible

- **(1) “Zero substitution” case:**
Domestic authorities do not substitute with domestic finance, and cancel the entire investment programme (usually selected as the default case)
- **(2) “Full substitution” case:**
Domestic authorities fully implement original CP investments, but financed entirely out of own resources
- **(3) “Partial substitution” case:**
Domestic authorities implement only part of the original CP investments, but financed out of own resources

Very different implications arise from these counterfactuals

- **Zero substitution**: Analysis attributes to Cohesion Policy the entire economic benefits of the CP investments
- **Full substitution**: Identical to the “zero substitution” case, except for the negative impacts (such as higher tax rates or offsetting cuts in expenditure) of the need to finance domestically
- **Partial substitution**: Difficult to evaluate. If the cancelled CP investments were genuine barriers to growth, the outcome might fall well below “full substitution”. If the cancelled CP investments were poorly designed (high deadweight/crowding out), then this case might be actually better than “full substitution”

Areas of disagreement (1 of 2)

- **Step 1: *The cohesion challenge disputed***: Greece, Portugal and Spain experienced dramatic convergence in the 1960-1980 period, without any trans-European policy interventions. The Baltic States have recently experienced double-digit growth, before any credible role for Cohesion Policy could be asserted.
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- **Step 6: *Empirics of investment impacts***: Common interpretation of the role of theory. But differences between groups as to the strength of these relationships.
- **Step 8: *What kind of macro model***: The most important difference between the three groups lies in their choice of modelling framework.

Areas of possible disagreement (2 of 2)

- **Step 9: Demand versus supply impacts:** Need to distinguish demand (implementation) effects from supply (post-implementation) effects is accepted by all groups. Empirical analysis leads to different outcomes.
- **Step 10: Sectoral issues in modelling:** The aggregate sectoral treatment used by QUEST, compared to the disaggregated approach of HERMIN and the highly disaggregated approach of ECOMOD, may distort the analysis.
- **Steps 12-14: Policy impacts:** The dramatically different analyses of Cohesion Policy impacts derived from the three models (QUEST, ECOMOD and HERMIN) are simply the results of all the divergences in modelling that are outlined above.

Interpreting different model-based impact analyses

- **QUEST vs. HERMIN-: Different nature and strength of crowding out mechanisms, through the labour market and through fiscal tightening and monetary tightening.**
- **Strong crowding-out in QUEST may not be appropriate to NMS economies**
- **Developmental nature of the NMS emerges in HERMIN , but not in QUEST.**
- **QUEST assumes model-consistent expectations (MCE), while HERMIN uses auto-regressive expectations.**
- **Difference between the QUEST-based and HERMIN-based analysis: High and enduring output impacts, but (effectively) zero employment impacts, even during implementation. This degree of crowding out needs to be investigated further. HERMIN is more Keynesian.**