

HOP! – MACRO-ECONOMIC IMPACT OF HIGH OIL PRICE IN EUROPE

CLIENT: European Commission, DG RTD

YEARS: 2007 – 2008

DESCRIPTION OF THE ACTIVITIES

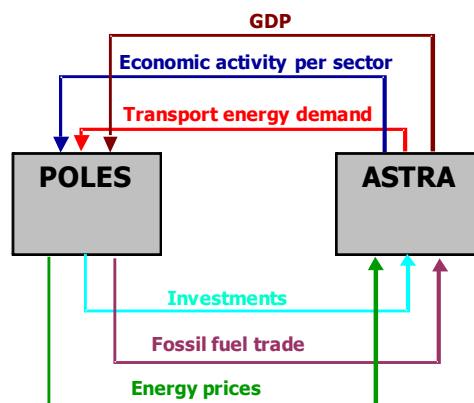
The HOP! project is a research study supported by the European Commission and developed within the VI Framework Programme.

The project was aimed at evaluating the direct and indirect impacts of temporary and/or permanent increase in oil price on the whole European economy, with special reference to impacts on energy sector, transport sector and employment.

Activities

The HOP! approach developed along three activity lines, which were closely related and constantly influenced each other.

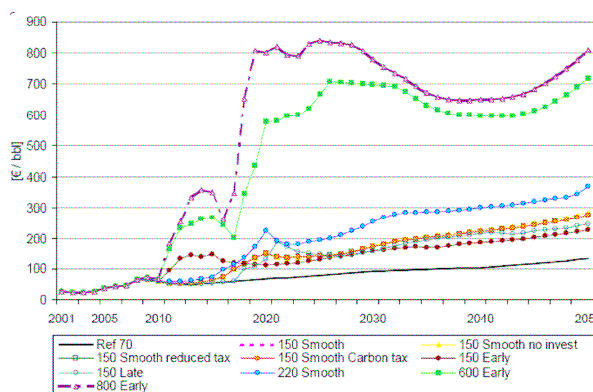
- **Modelling:** the quantification of the impacts was performed coupling two European interlinked strategic models, the ASTRA model (designed for the long term assessment of transport policies and investments) focused on transport and macroeconomics and the POLES model (designed for simulating the interaction of energy supply and demand) focused on energy.
- **Assessment:** the HOP! scenarios were carefully designed to allow for identifying a well defined set of impacts; The scenarios corresponded to different sets of assumptions about fossil fuel reserves, timing of the oil price increase, energy tax level. The time horizon of the assessment was 2050.
- **Scientific consensus:** Two high level scientific meetings were organised by the HOP! project: the first one devoted to the discussion of the methodology and the scenarios, and the second one to the discussion of the project results.



The interlinked models ASTRA and POLES/BioPOL

Scenarios

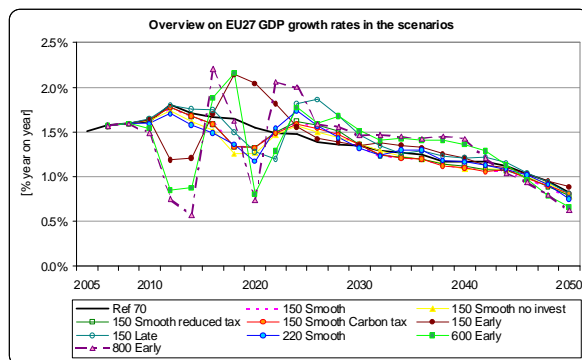
A set of elevated oil price levels varying between 150 and 800 €₂₀₀₀/bbl were defined and compared with a reference projection. Other variables considered were the path of oil price growth, the level of energy taxation and of investments.



Overview on project results

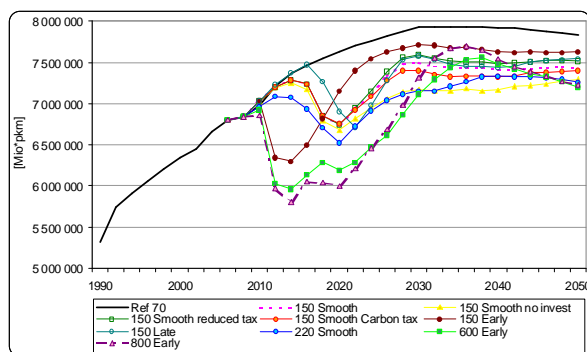
Impact on the economy

GDP development is significantly affected by the high oil prices, though a number of compensating mechanisms like investments into alternative energies, modal-shift to public transport dampen the negative impacts. The GDP growth in the HOP! scenarios is quite robust and a high oil price gives rise to only a minor effect.



Impact on transport sector

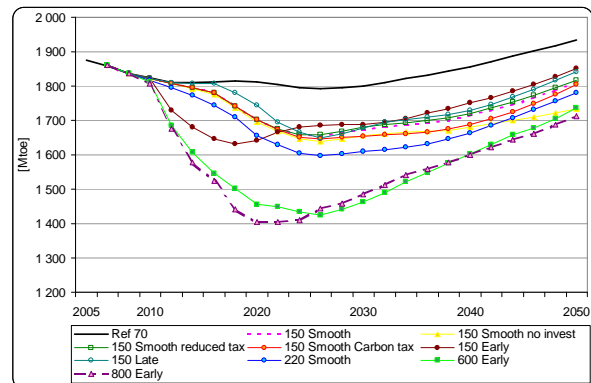
The reactions of passenger and freight transport demand is a reduction by between -10 and -20%, which is the consequence of manifold reaction patterns like mode-shift, change of destinations and reduced distances as well as lower economic activity. In general, inherent transport system reactions are stronger for passenger transport, while freight transport is reacting stronger to changes in economic activity (e.g. reduced trade flows) than passenger transport.



Impact on Energy sector

The simulations show that only periods with significant growth of energy prices enable a reduction of energy demand, while moderate growth of energy prices is not sufficient to set incentives to increase

efficiency above the levels of economic growth, such that an absolute decoupling of energy demand and GDP would occur, as in the case of significantly growing energy prices.



Conclusions

The overall conclusion is that high oil prices have a significant economic impact in the short-term and may have a limited impact in the medium- and long-term. In general the impact on employment is more severe than on GDP. The effects on investments are critical to shape the final macroeconomic outcome. In the first instance a high oil price will have a negative effect due to increases in costs in many areas of the economy, but this can be offset by the boost of investment induced by the search for alternatives to fossil fuels and for efficiency technologies. Overall, the oil scarcity and oil price shocks can have significant negative impacts on the EU – but they need not, if the EU prepares itself adequately. Looking at the fast decreasing mid-term oil production forecast, the EU should have enough reasons to prepare.

The Consortium

TRT is the project leader and, in addition to the coordination activities, had overall responsibility of the transport issues.

Other partners are JRC-IPTS (Sevilla) providing expertise in energy policy and modelling, and Fraunhofer-ISI (Karlsruhe) with expertise in macroeconomic and technologic assessment.

More details on the project website:

www.hop-project.eu