Low-carbon, human development economy-wide modelling

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Successful and on-going capacity development projects LAC

- Bolivia (UDAPE-Planning)
  - Remittances
  - Food price volatility
  - MDGs to 2015, 2020 and 2025
- Costa Rica
  - MDG education (on time completion (Education)
  - Macro-economic impact of government debt in international markets and alternative use of resources (Finance & Parliament)
  - Impact of income tax rebates (University and Parliament)
- Uganda
  - Support to the National Development Plan (Planning)
  - Support to MDG report (Finance and Planning, UNDP)
  - Support to assess the impact of the fall in foreign aid (Planning)

Low-carbon & human development (or inclusion)

- Global model estimates of additional energy investments needed to stabilize temperature range from negative to levels up to 8 % of GDP
  - Investments are larger in Africa and Asia
- Own MDG estimates suggest that pursuing MDG achievement of 3 goals might cause annual losses in GDP of up to 2 % of GDP.
  - Estimates suggest the presence of important synergies

A comprehensive modeling framework

- Policy making needs to be comprehensive
- Take into account macro-economic impacts and fiscal space
- Energy transformation (decarbonizing and low-carbon building)
- Human development, as proxy by MDGs
- Energy poverty
- Trade-offs and synergies

Examples of simulations

- Three oil-importing countries where team are working on economy-wide modelling

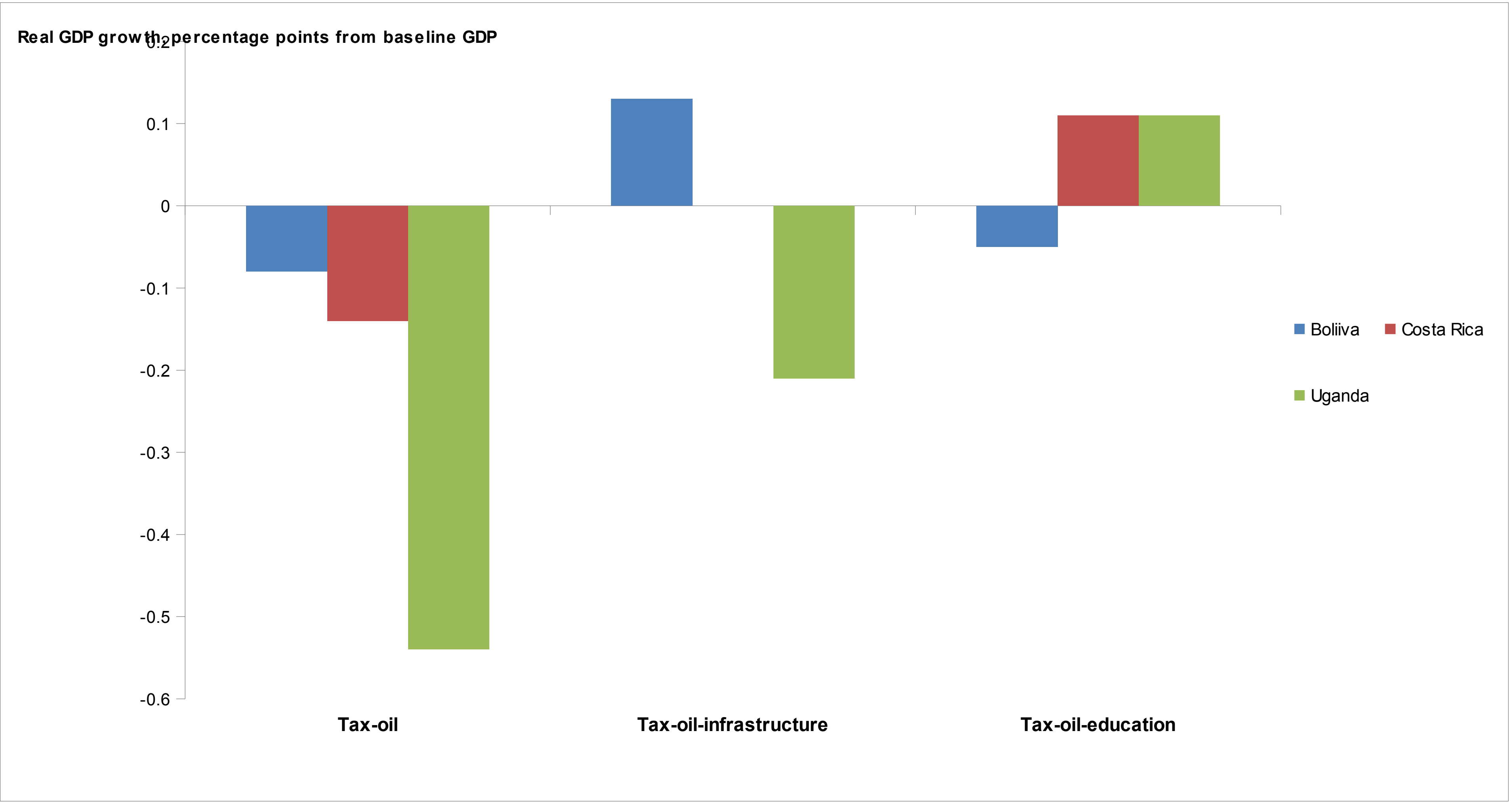
Bolivia, Costa Rica and Uganda

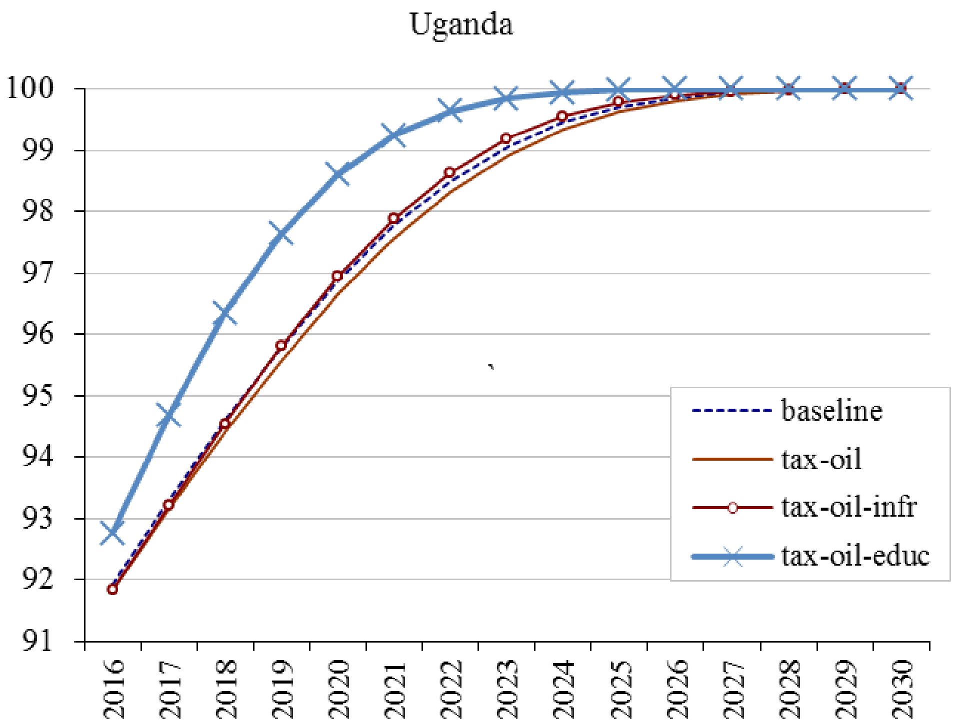
- Impose a tax on oil to generate a revenue equal to 2% of GDP
- Revenue is used to finance infrastructure and education, which raises productivity
- Tax on oil decreases

Raw example of possible simulations

- Tax on oil decreases GDP growth rate by up to 2 percentage points
- The effect of investing added revenues varies across countries and the type of investment
- Using the tax revenue tends to neutralize and even more than offset the negative effect of the oil tax

Impact on GDP growth of a tax oil and investment in education, percentage points from baseline GDP





The effect on education achievement in Uganda is noticeable, not in Bolivia