Baseline matters!
- A case study of EU-US FTA

DTAP Short Course in Dynamic Global Trade Analysis
July 25, 2012

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Why study a baseline?

• “A baseline depicts how the world economy might be expected to change, over a given period of time, if the policy were not implemented.” (Walmsley, Chapter 5)

• Hypothesis – A baseline affects the outcome of the simulation. The relative extent of the influence depends on the content of the baseline.
A baseline matters!

Standard baseline

Alternative baseline
Two baselines studied

- Standard – based on the outcome of the program App2_SC.
- Alternative – same as standard except that we impose three per cent increase per year in total factor productivity for all regions. This is only a working hypothesis, and would need a further consideration.
Difference of the two baselines - Growth Accounting

- **Simplified production function**
  \[ Y = AK^\alpha L^{1-\alpha} \quad (1) \]
  where \( Y \) is GDP, \( A \) is total factor productivity, \( K \) is capital, \( L \) is labor, and \( \alpha \) is the capital share.

  taking logarithm and differentiating
  \[ \dot{y} / y = \dot{A} / A + \alpha \dot{K} / K + (1-\alpha)(\dot{L} / L) \quad (2) \]

- In the standard baseline TFP growth (\( \dot{A} / A \)) is endogenous (to achieve forecast GDP), and in the alternative baseline TFP growth (\( \dot{A} / A \)) is exogenous and 3%. So GDP growth (\( \dot{y} / y \)) is capital accumulation (\( \dot{K} / K \)), plus exogenous labor growth and TFP.
Difference of the two baselines - Growth Accounting (continued)

- Ultimately in Gdyn, GDP is determined by two equations, where two variables among the four (Y, A, K, L) are endogenous and the rest are exogenous. Another equation is,
  \[ \dot{K} = I - \delta K \]
- "TFP growth varies year by year, but we want constant rate of TFP growth consistent with overall GDP growth target."
  (Alla, "Discussion of Limitations")
- A question might be asked, which is easier to predict to make it exogenous, the growth of GDP or TFP? Or which is more stable in the long run?
- If we can introduce an equation on TFP, then we can make three variables (Y, K, A) endogenous. This is a study challenge which could be explored in the future.
Policy shock

• EU-North America FTA

The negotiation has not started, but the possibility is recently reported. In any case this is a hypothetical shock.

Some people say that this is the last piece of a puzzle the European Union might solve in the near future.
Differences in total factor productivity
Startingpoint:
GDP in baseline (Mio US$)
Effects from Trade Policy: on GDP (change in qgdp)

- Namerica
- Namerica - alternative baseline
- EU_27
- EU_27 - alternative baseline
Starting point for analysis:
Exports as Share of GDP

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<thead>
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<th>Year</th>
<th>NAmerica</th>
<th>Namerica - alt. Baseline</th>
<th>EU</th>
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Starting point for analysis:
Imports as Share of GDP
AND NOW ???
Ideas

• What is driving effects on GDP? (Imports, Exports, other?
• EU and NAmerica export less, what happens in other countries?