Assessing Development Strategies to Achieve the MDGs in the Arab Region
Project Objectives and Methodology

Inception & Training Workshop
Cairo, 2-5 April, 2007

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Outline presentation

1. Workshop and project objectives and key questions to be answered

2. Proposed overall methodological framework

3. Some examples from applying this framework

4. Caveats and things to keep in mind

5. Implementation of framework for Arab states

   - Overall set-up

   - Steps to be taken for country studies

1. Workshop and Project Objectives

Project Objectives

- Capacity building for analyzing MDG strategies relevant for Arab states

- Help conduct country studies assessing feasible strategies to achieve the MDGs

- Further inform country assessments through international comparison

Workshop Objectives

- Discuss key questions of project
- Introduce you to the basic aspects of the methodology and discuss data requirements
- Provide examples of applications of project methodology in other contexts, especially in Africa and Latin America building
- Hands-on training in the project methodology
- Discuss issues for adaptation of methodology to your country contexts
- Planning of next steps in project implementation

Some key questions regarding MDG strategies

- What does it take to achieve the MDGs?
  - What are MDG determinants?
  - How would MDG achievement influence other aspects of economic and social development?
- Do we know how much it will cost and can we afford achieving the goals?
- What policy options do we have in financing the MDG strategy? What are the trade offs when:
  - Scaling up aid or borrowing abroad?
  - Enhancing domestic resource mobilization?

2. Methodology
An Economy-Wide Approach

- Public spending policies and foreign aid flows targeting the MDGs have strong effects throughout the economy.

- These feed back on the MDG indicators through markets for labour, goods, services, and foreign exchange.

- Therefore, economy-wide analysis of MDG strategies is necessary as a complement to sectoral studies (education, health, etc.).

UN/DESA-UNDP-World Bank Public policies for MDGs project

- **MAMS: Maquette for MDG Simulations.**
  - Economy-wide (dynamic CGE) simulation model to analyze MDG strategies in different countries.
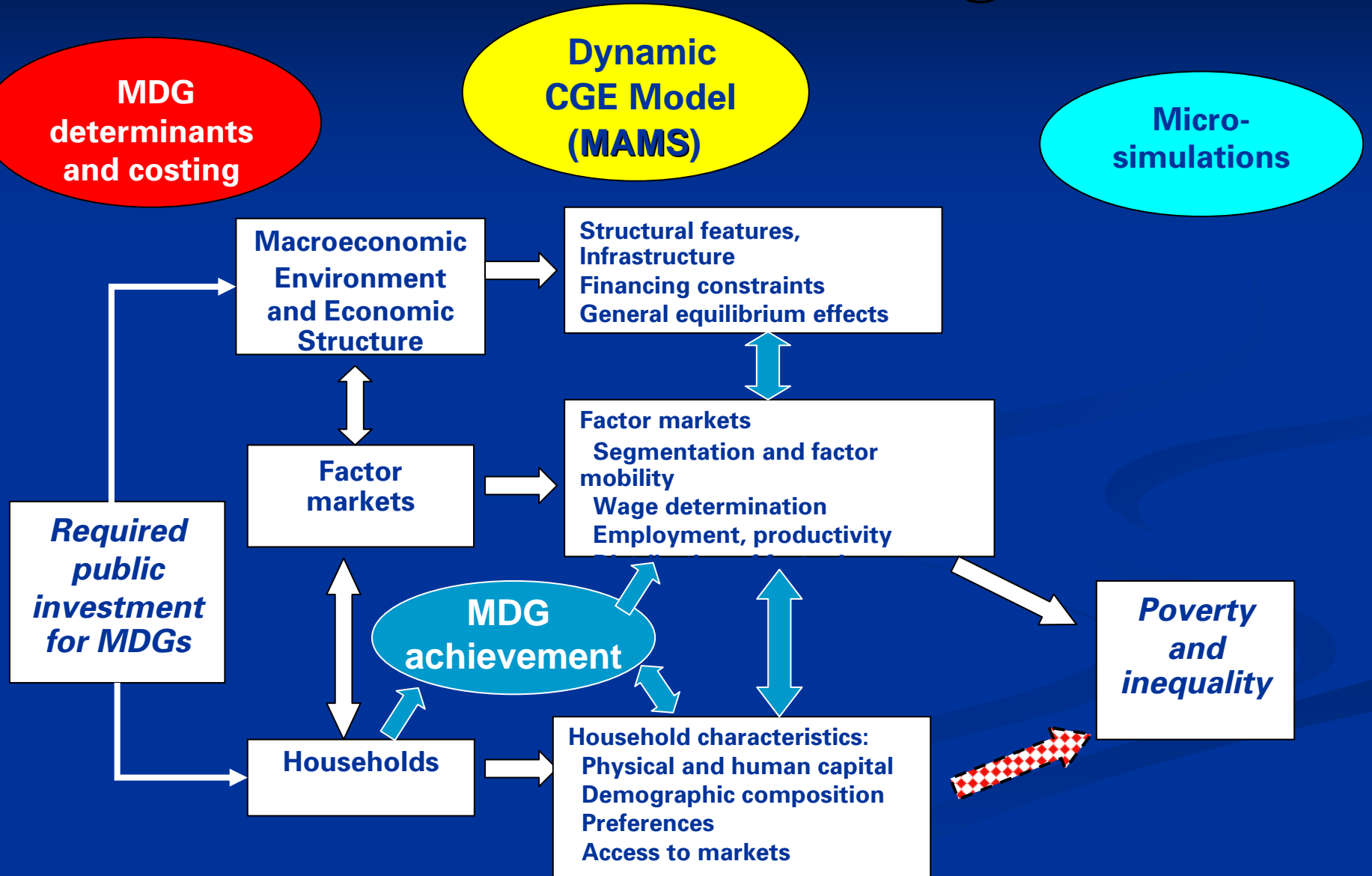 - Dynamic MDG module
- **Sector analysis of MDG determinants and of interventions** needed to achieve MDGs in education, health, water and sanitation
  - Microeconomic analysis of determinants of access to schooling, infant mortality, etc.
  - Costing exercise, considering household behaviour
- **Microsimulation methodology**
  - Translate labour market outcomes of CGE simulations into impact on poverty and income distribution at household level using micro datasets

Macro-micro linkages

MDG determinants and costing

Dynamic CGE Model (MAMS)

Micro-simulations

Macroeconomic Environment and Economic Structure

Structural features, Infrastructure
Financing constraints
General equilibrium effects

Required public investment for MDGs

Factor markets

Factor markets
Segmentation and factor mobility
Wage determination
Employment, productivity

MDG achievement

Households

Household characteristics:
Physical and human capital
Demographic composition
Preferences
Access to markets

Poverty and inequality

MDG determinants

- MDG targets (from 1990 base year):
  - MDG-2: 100% primary school completion by 2015
  - MDG-3: Gender equality in access to education (primary and secondary by 2005 and all levels by 2015)
  - MDG-4: Reduce child mortality by two-thirds by 2015
  - MDG-5: Reduce maternal mortality by three-quarters by 2015
  - MDG-7: Halve proportion of people without access to drinking water and sanitation by 2015

MDG determinants

- **What is needed to get all children in school and make them complete all grades?**
  - Build more school infrastructure?
  - Improve quality of other school inputs (teachers, textbook supplies)?
  - Increase access to school by improved household income and demand subsidies?
  - All of the above?

- **What is needed to reduce child mortality?**
  - Better nutrition?
  - Expansion of immunization programs?
  - Improving maternal-child health facilities?
  - Better education?
  - All of the above?

- **Are there synergies across the MDGs?**

- **What is the direct cost of interventions to achieve MDGs?**

- **Are there diminishing marginal returns to the inputs?**

MAMS: Determinants of MDG outcomes

MDG	Service per capita or student	Consumption per capita	Wage incentives	Public infrastructure	Other MDGs
2–Primary schooling	X	X	X	X	4
4-Under-five mortality	X	X		X	2,5,7a,7b
5-Maternal mortality	X	X		X	2,4,7a,7b
7a-Water	X	X		X	
7b-Sanitation	X	X		X	

MAMS: economy-wide framework

Some basic features:

- Most features are familiar from standard open-economy, dynamic-recursive CGE models.
- Dynamic MDG block, feeds back on labour market, prices, etc.
- MAMS typically covers MDGs 1 (poverty), 2 (primary school completion), 4 (under-five mortality rate), 5 (maternal mortality rate), 7a (water access), and 7b (sanitation access).
- Flexible in classification of commodities, production sectors, labour categories, institutions.

Microsimulations

- MDG-1: Income poverty is endogenous to overall economy-wide interactions
- MAMS/CGE: too aggregate household and labour categories (insufficient detail of income distribution)
- Microsimulations:
  - Use full household survey data
  - Impose counterfactual labour market outcomes from MAMS/CGE simulations on full distribution
  - Calculate poverty and income distribution outcomes
- "Top-down" approach

3. Some examples of MAMS-based analysis
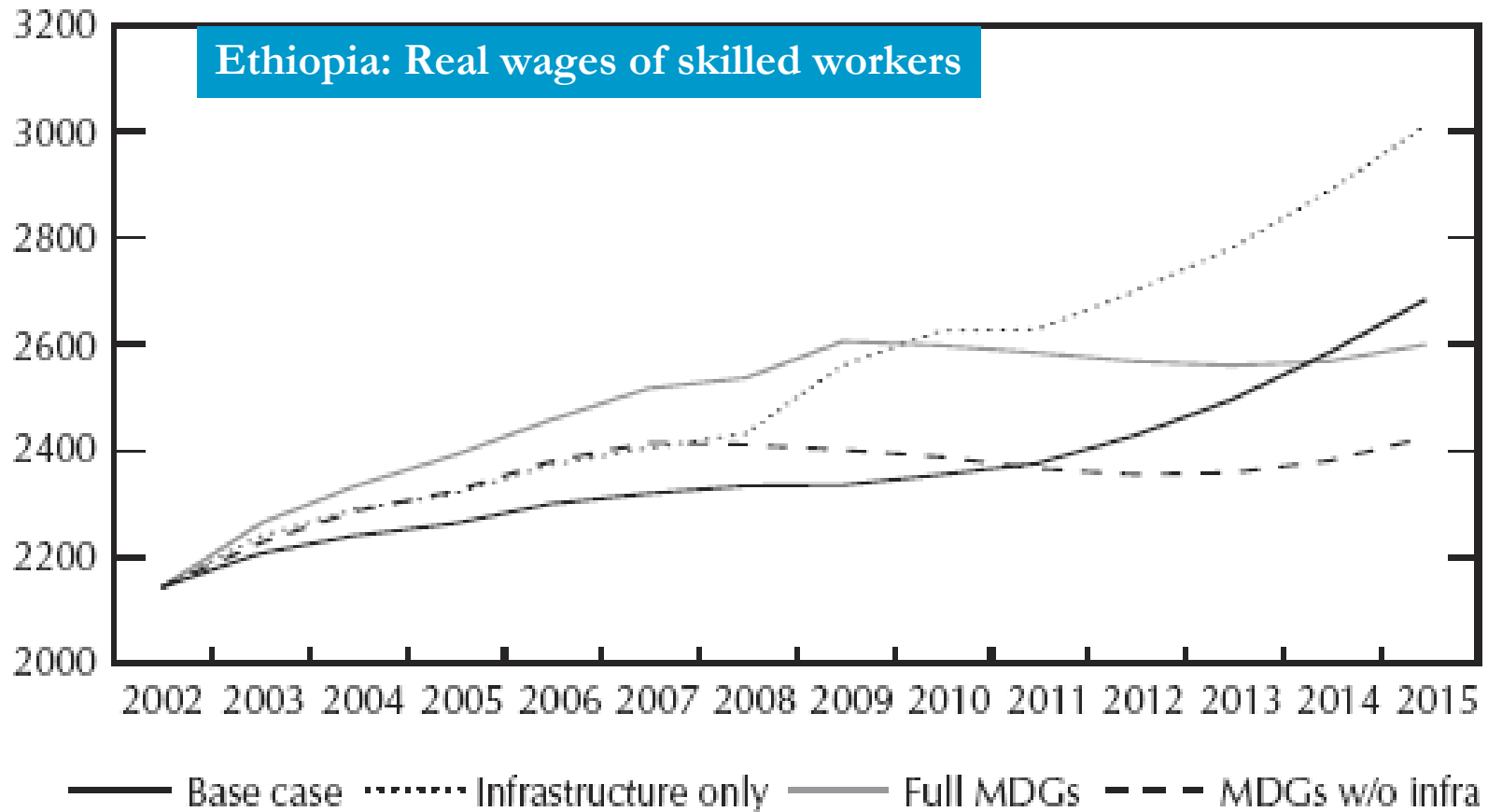
Macroeconomic influences on cost estimates

❑ Synergies among MDGs: is achieving all MDGs simultaneously cheaper than pursuing them one by one?

❑ Complementary investment requirements, especially in infrastructure

❑ Macro analysis: economy-wide effects matter for the (relative) cost estimates (labour costs and constraints, prices, growth effects)
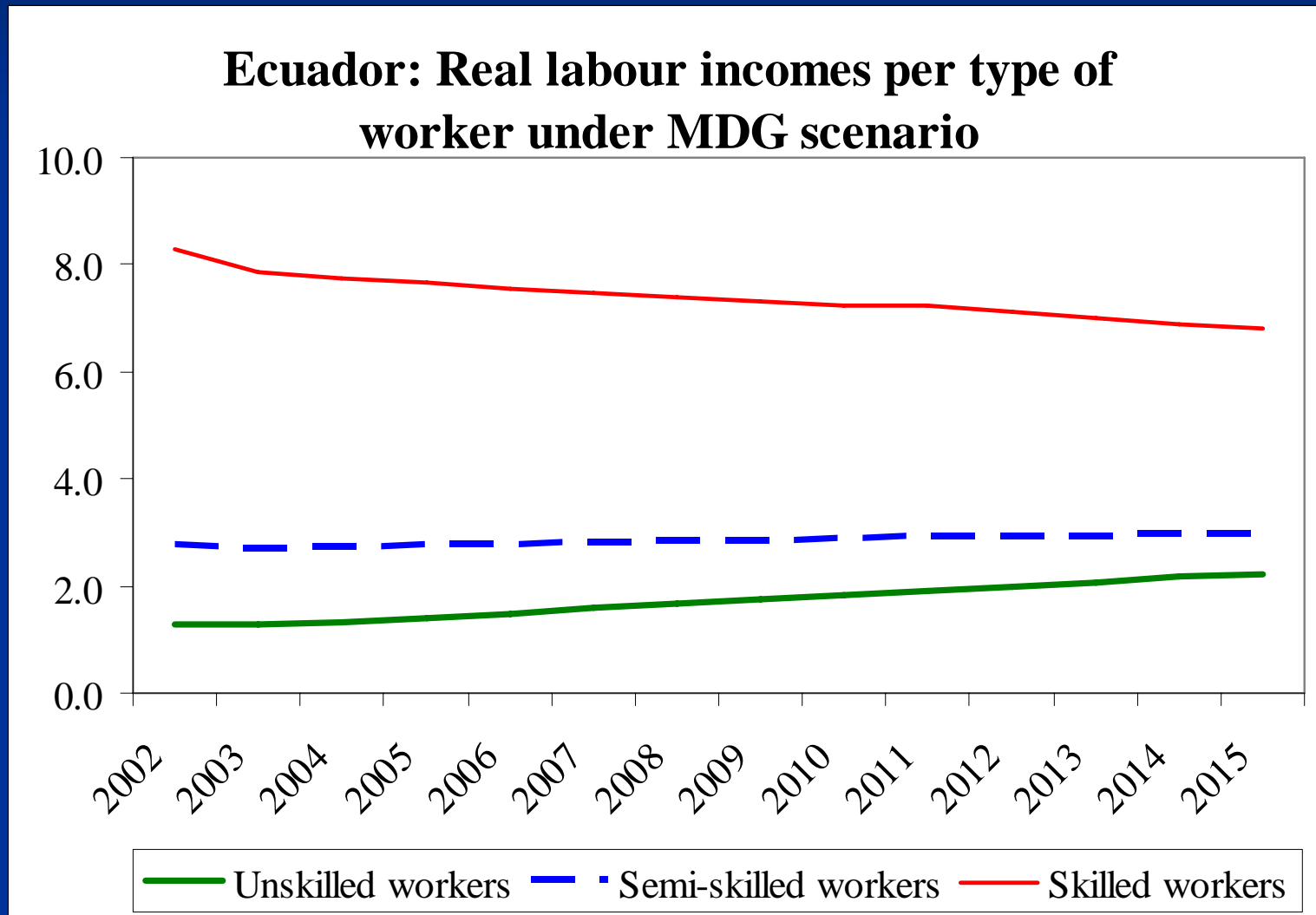
Ecuador: Cost-reducing synergy among MDGs

（MDG spending in 2015 compared to base year, as percentage of GDP)

	Base year MDG spending	Annual extra costs by 2015			
		Only MDG2	*Only MDG4&5*	*Only MDG7*	*All MDGs*
Primary education	**1.1**	**1.2**	**0.0**	**0.0**	**1.0**
- Current spending	1.0	1.2	0.0	0.0	1.0
- Investment	0.1	0.0	0.0	0.0	0.0
Health	**2.0**	**0.0**	**1.5**	**0.0**	**1.0**
- Current spending	1.6	0.0	0.9	0.0	0.6
- Investment	0.4	0.0	0.6	0.0	0.4
Water and sanitation	**0.3**	**0.0**	**0.1**	**0.5**	**0.5**
Total	**3.4**	**1.2**	**1.6**	**0.5**	**2.5**

Labour shortage and absorptive capacity versus MDG cost saving

Ethiopia: Real wages of skilled workers

Labour shortage and absorptive capacity versus MDG cost saving

Ecuador: Real labour incomes per type of worker under MDG scenario
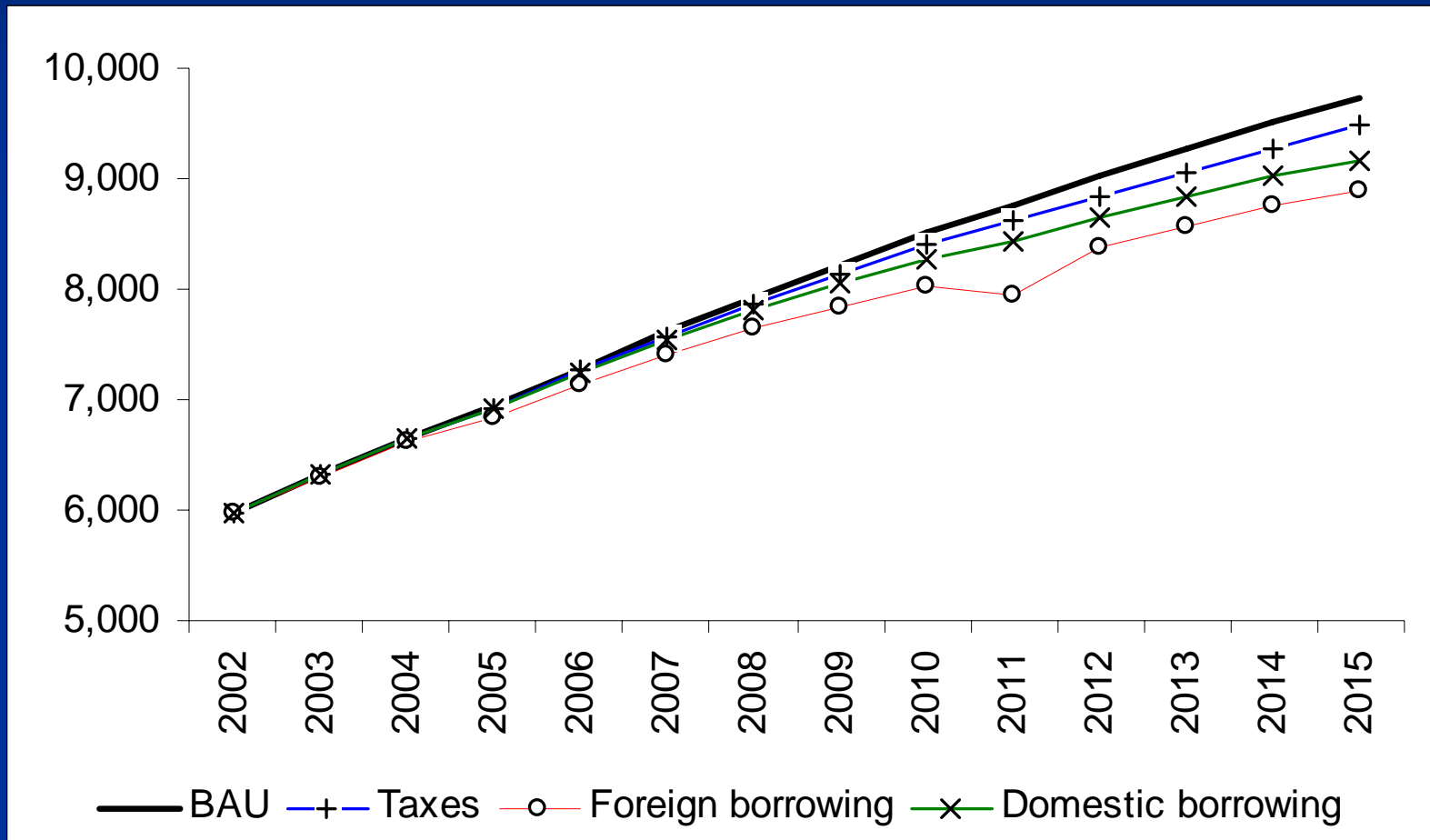
Macroeconomic trade offs

- Most of these are **intertemporal**
- Dutch disease?
  - Real exchange rate appreciation, eroding export capacity (aid driven, as well as MDG spending driven!!)
- Foreign financing versus domestic resource mobilization
  - Debt overhang and fiscal space
  - Crowding out of private spending

How severe are Dutch disease effects?

- Effects of financing on real exchange rate will depend on:
  - Impact on import demand and import intensity of MDG expenditures
  - Existing production capacity
  - Exchange rate regime and access to foreign borrowing
  - Growth and productivity externalities of MDG achievement and infrastructure investment
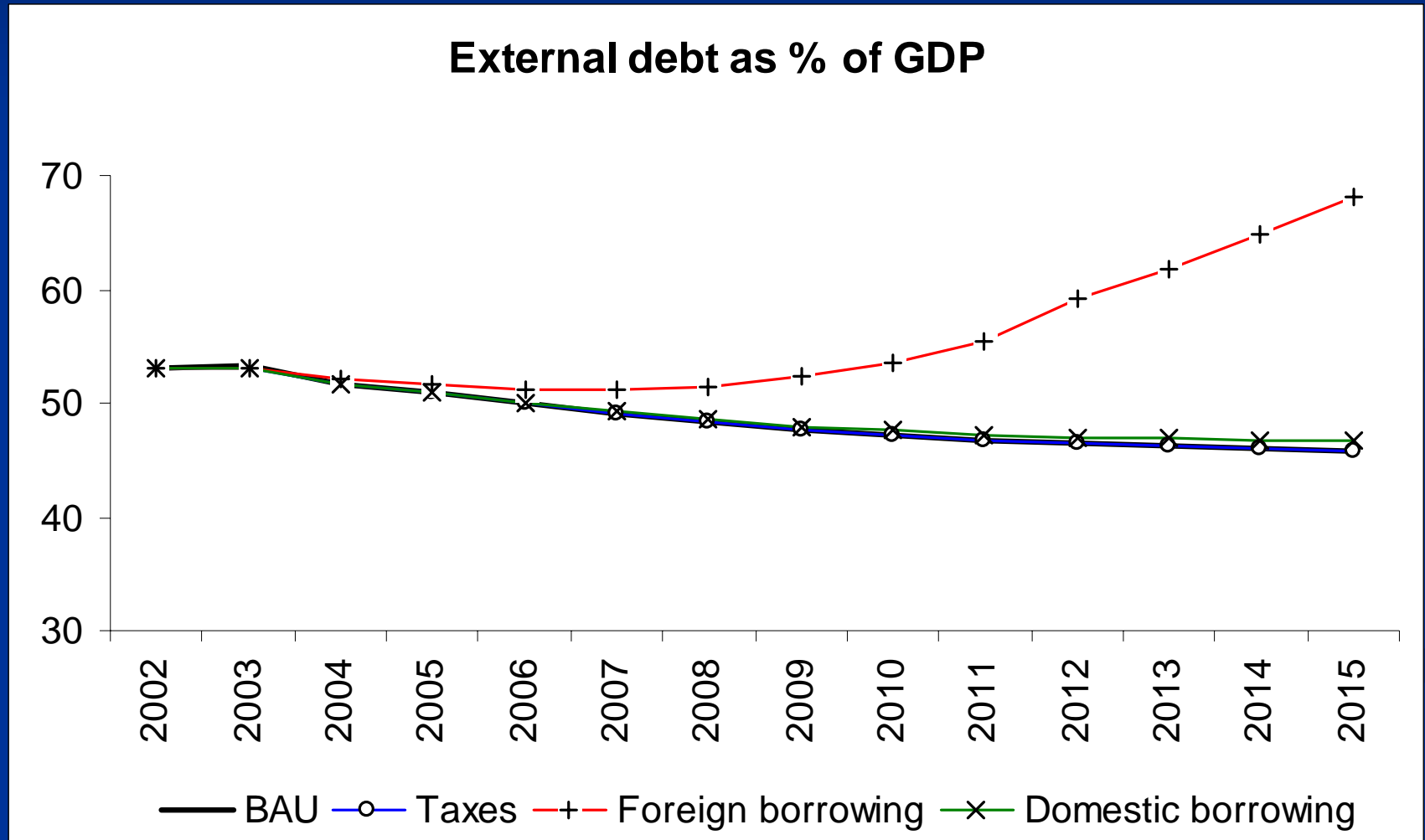
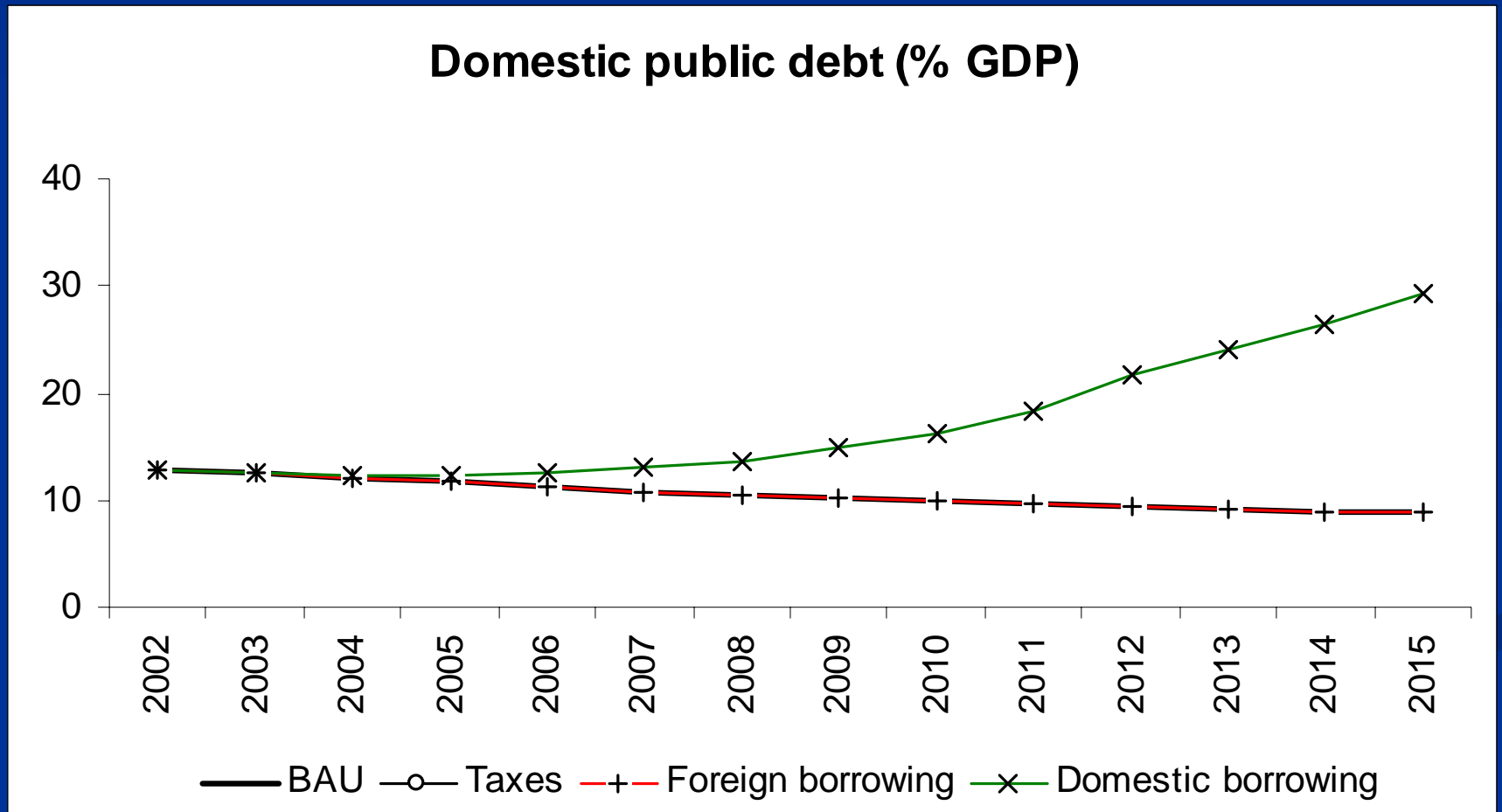# Ecuador: Trade off between export growth vs MDG spending

(Export volume in US$ mln)

Ecuador: Trade off between MDG spending and fiscal sustainability
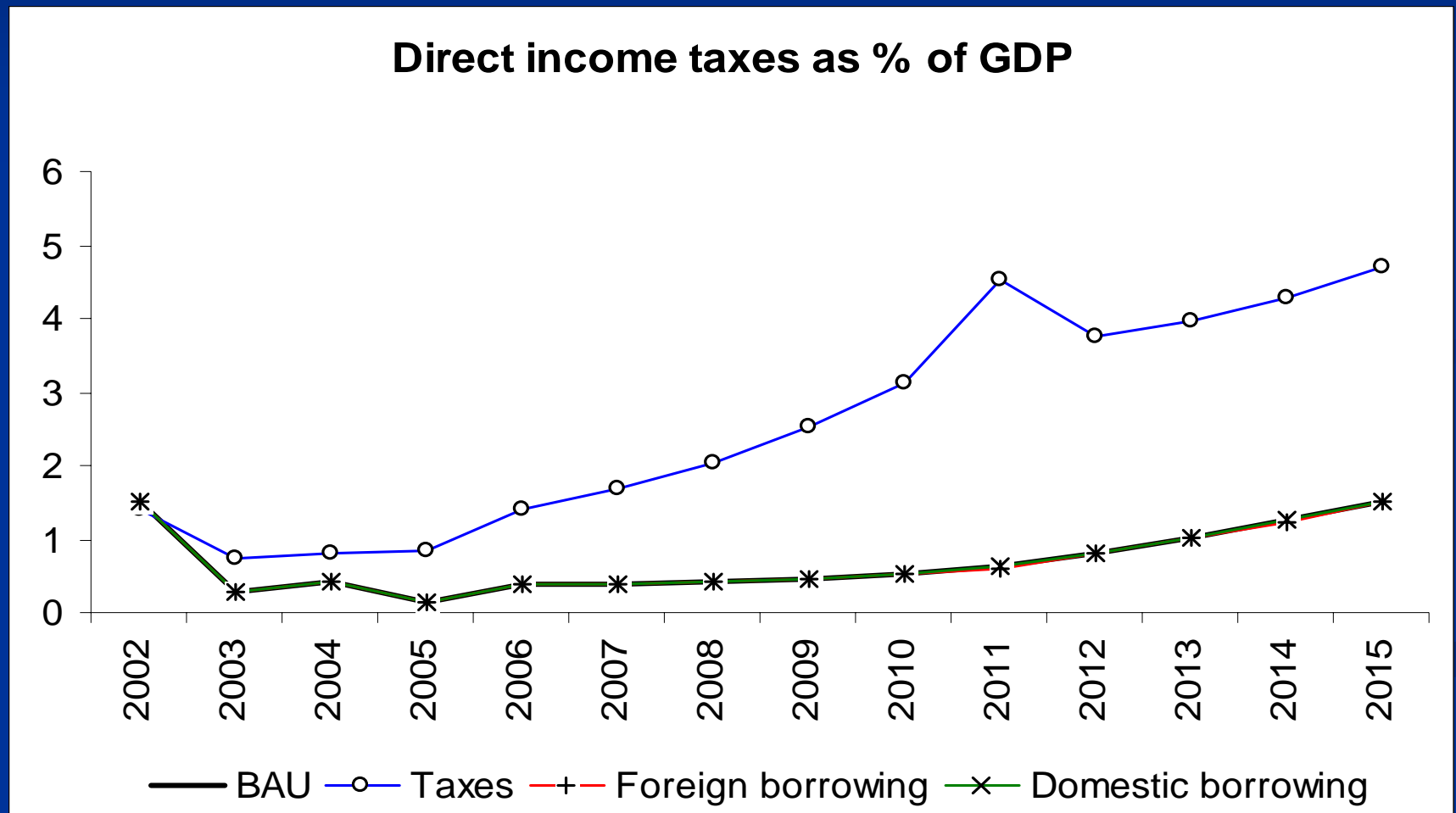**(Domestic and external debt and direct tax revenue as % GDP)**

External debt as % of GDP

Ecuador: Trade off between MDG spending and fiscal sustainability
(Domestic and external debt and direct tax revenue as % GDP)

Domestic public debt (% GDP)
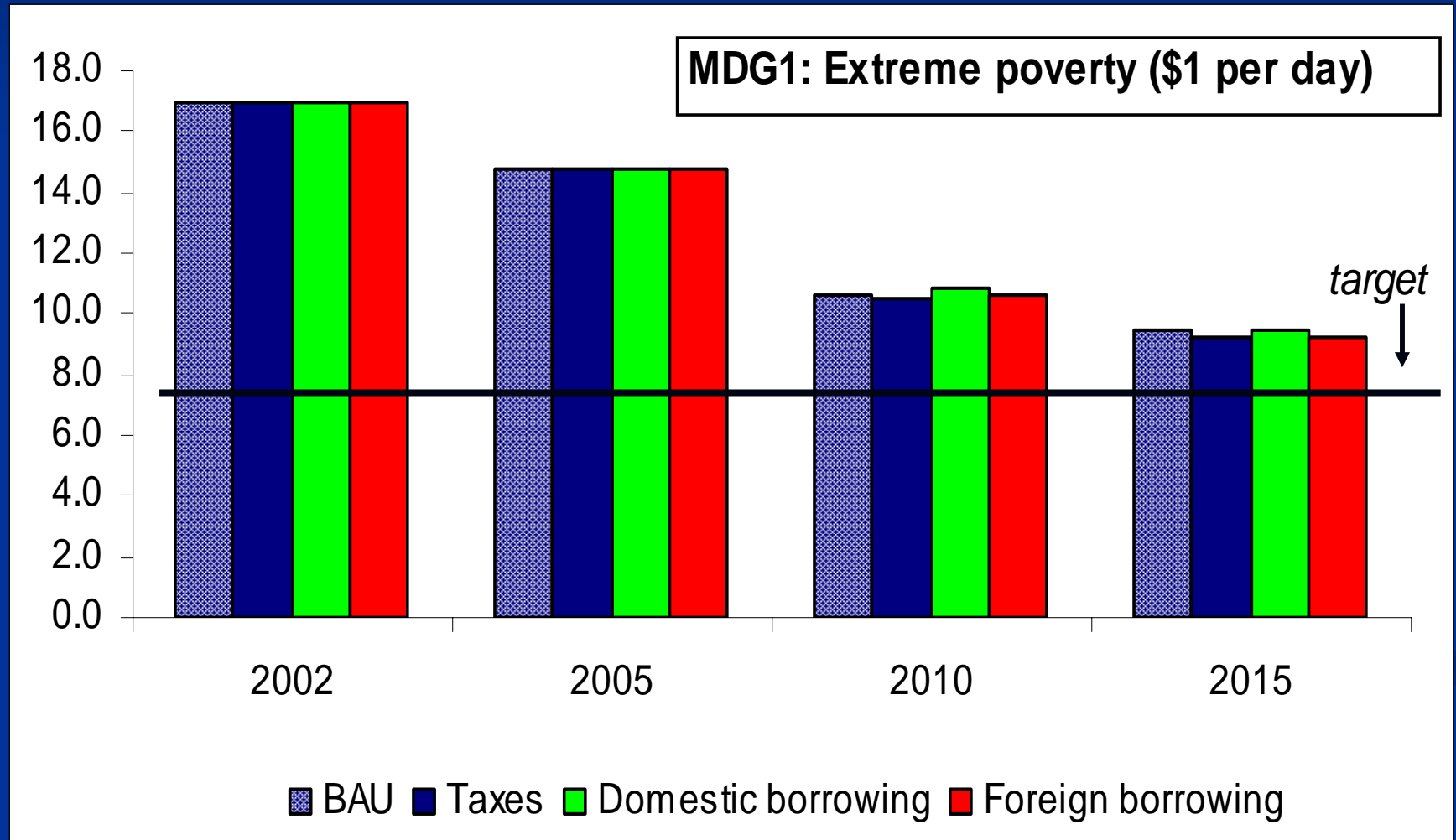
Legend: BAU — Taxes — Foreign borrowing — Domestic borrowing

Ecuador: Trade off between MDG spending and fiscal sustainability

(Domestic and external debt and direct tax revenue as % GDP)

Direct income taxes as % of GDP

Legend: BAU, Taxes, Foreign borrowing, Domestic borrowing

Ecuador: Trade off MDG1 and other MDG achievement

MDG1: Extreme poverty ($1 per day)

4. Some caveats:

Do we really need a macro or CGE model?

- A few do's and don'ts
- Don'ts
  - If you think it is a black box: DON'T!
  - If you believe data constraints deem the model incredible: DON'T
- Do's
  - Model can inform and stimulate policy dialogue
  - Model is "owned" by policy makers and transparent for other stakeholders
  - Use model framework to mobilize better information

We need sufficient data

- Social Accounting Matrix (if you don't have one we will help construct one)
- Social sector data (inputs, outputs) that can be linked to household survey data and budget data
- Recent household survey
- Access to all these data

5. Project Implementation ("Who" and "How")

- Studies implemented by national country teams (researchers and policy makers) in each country

- Adapt to country needs

- Training of country teams in analytical methodology (workshops, "teleworking")

- Continuous technical back stopping by international team of experts

- Knowledge sharing through international/regional workshops (➜ improvement methodology)

Implementation of Country Studies ("How to" in seven steps)

- 1. Country narrative:
    - Economic performance and vulnerabilities
    - Has growth been pro-poor?
    - Trends towards MDGs
    - Policy reforms: do they seem to produce pro-poor outcomes?
- 2. CGE core (without MDG) model calibration
    - Update (or construct) SAM (model database)
    - Find plausible values for key parameters
    - Calibrate static CGE
    - Calibrate recursive dynamic CGE and baseline

"How to" in seven steps

- 3. **Calibrate inputs for MDG module:**
  - MDG's 2 and 3: microeconomic analysis of determinants of schooling performance and gender inequality in education access
  - MDG 4 (and 5): microeconomic analysis of determinants of child (maternal) mortality
  - MDG 7: cost estimates and demand elasticities for access to drinking water and sanitation
  - Partial-equilibrium budget requirements for achieving MDGs

- 4. **Policy simulation analysis with full MAMS model**
  - Translate results microeconomic analysis to MDG block of CGE
  - Calibrate full CGE and baseline
  - Assess feasibility of achieving MDGs under different policy scenarios
  - Assess investment (budget) requirements for MDG achievement

"How to" in seven steps

- 5.   Microsimulations:
    - Assess poverty and inequality effects of CGE (MAMS) model outcomes
    - In principle, same methodology as in previous project but applied in dynamic setting

- 6.   Putting everything together
    - Country papers with interpretation of results and integration with country narrative.

- 7.   Comparative country analysis
    - Common patterns and country-specific conditions
    - Possibly: any broader implications of region-wide MDG achievement?
    - Lessons learned

Adaptation to country context

- MDGs: MAMS considers MDG1, 2, 4, 5, 7. What about MDG-3 (gender)?

- MDG targets: are there specific national targets?

- MDG determinants: are given determinants the most relevant? Should and can we capture others?

- What sector and social group detail is relevant?

- How does your economy function with regard to price and wage setting, fiscal adjustment, exchange rate regime and access to foreign finance, etc.? Set rules for market adjustment and macroeconomic closure rules.