Strengthening Macroeconomic and Social Policy Coherence

Overview of capacity development

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Inception workshop on "**Strengthening Macroeconomic and Social Policy Coherence through Integrated Macro-Micro Modelling**", Manila, 2-3 October, 2012.

UN-DESA's capacity development activities

- Training and advice to developing countries' policymakers to enhance their analytical capacities in:
  - designing coherent macroeconomic, social and environmental policies and strategies;
    - relevant in current UN discussion on post-2015 strategies
  - enabling LDCs make the most adequate use of benefits derived from the LDC category;
  - reducing vulnerability to volatility in the global economy.
- Training in the use of modeling tools, applied in different country contexts.
- More details on these activities:
  - http://www.un.org/en/development/desa/policy/capacity/index.shtml

Key area so far:
Financing Human Development

- Policy coherence between macro, sector and social policies
- Policy questions related to achieving millennium development goals (MDGs) at centre:
  - What does it take to achieve the MDGs?
  - Do we know how much it will cost and can we afford achieving the goals on time?
  - Does it matter how we finance the MDG strategy?
  - What might be economy-wide trade-offs and synergies?
    - Effects on growth and export sectors?
    - Effects on employment and real wages?
    - Effects on public indebtedness?
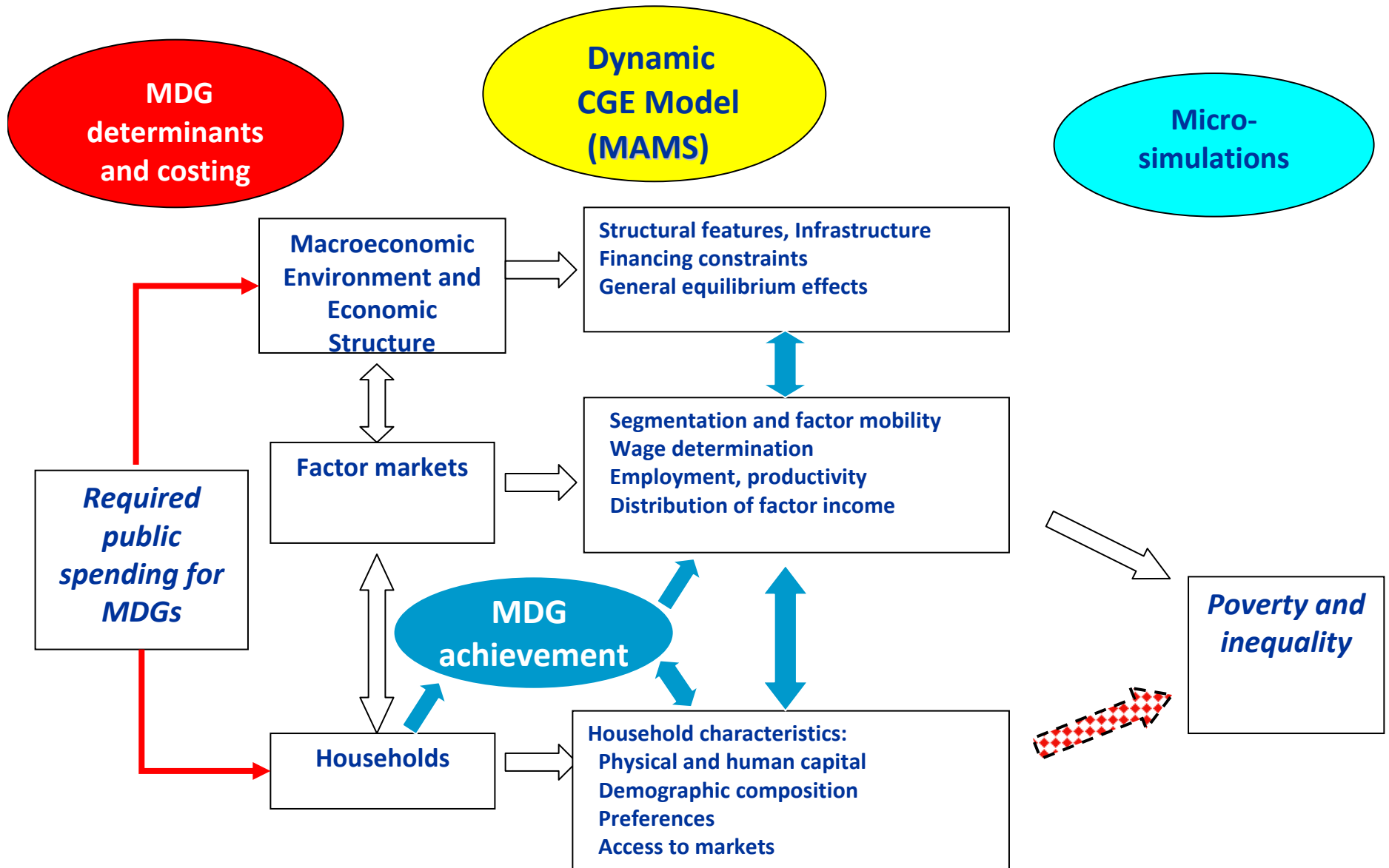   - Short versus long-run effects?

Key assumptions and methodology

- Key role for public policies
- Public spending policies targeting the MDGs and their financing mechanisms have strong effects throughout the economy.
- These feed back on the MDG indicators through markets for labour, capital, commodities, and foreign exchange.
- → Hence:
  - → Economy-wide framework to assess MDG …
  - → … to complement social sector studies (education, health, etc.)…
  - → … and micro level analysis of poverty and inequality impact

Integrated macro-micro modelling

- **MAMS: *Maquette* for MDG Simulations**
  - Economy-wide (dynamic-recursive CGE) model to analyze MDG financing strategies in different countries.
  - Dynamic MDG module, with MDG determinants
- **Sector analysis of determinants (including interventions)** needed to achieve outcomes in education (i.e. increase promotion), health (i.e., reduce mortality), water and sanitation (i.e. increase coverage)
  - Microeconomic analysis of determinants
  - Cost-effectiveness analysis
  - Key parameter values to inform the calibration of MAMS' MDG module
- **Microsimulation approach**
  - Translate outcomes of CGE simulations into impact on poverty and inequality at household level using micro datasets

Macro-micro linkages

MDG determinants and costing

Dynamic CGE Model (MAMS)

Micro-simulations

Required public spending for MDGs

Macroeconomic Environment and Economic Structure

Structural features, Infrastructure
Financing constraints
General equilibrium effects

Factor markets

Segmentation and factor mobility
Wage determination
Employment, productivity
Distribution of factor income

MDG achievement

Households

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

Poverty and inequality

MAMS: economy-wide framework

- Originally developed by the World Bank.
- Refinements and extensions made through UN-DESA's capacity development projects.
- Most features are familiar from standard open-economy, dynamic-recursive CGE models.
- Dynamic MDG block
    - Typically covers a number of MDGs (see next slide)
    - Feeds back on labour market, prices, etc.
- Flexible in classification of commodities, production sectors, labour categories, institutions.
- Assess trade-offs of alternative financing strategies and accounts for synergies during MDG achievement

MDG indicators considered

- **MDGs 2, 4, 5 and 7w & 7s**: universal primary education, reduce child and maternal mortality, increase access to drinking water and sanitation
  - All endogenous in MAMS and can be influenced by sector-specific public spending interventions
- **MDG 1 (income poverty reduction):** no specific policies to redress, but seen as outcome of overall economic process
  - General equilibrium results used to generate poverty incidence indicators using a full income distribution → microsimulations
- **MDG 3 (gender):** partly implicit as part of MDG 2 (education)
- **MDG 6 (HIV/AIDS, etc.):** "under construction" → pilot study

Determinants of MDG outcomes in MAMS

MDG	Service per capita or student	Consump-tion per capita	Wage incen-tives	Public infra-structure	Other MDGs
2–Primary schooling behaviour	X	X	X	X	4
4-Under-five mortality	X	X		X	7w,7s
5-Maternal mortality	X	X		X	7w,7s
7w-Water	X	X		X	
7s-Sanitation	X	X		X	

MAMS scenarios

- **Baseline or reference scenario**:
  - Plausible benchmark for comparisons; designed depending on purpose of analysis.
    - Business-as-usual: GDP growth calibrated to historical trend and social spending policy maintained.
    - Or, implies national development plans' or other projections
  - ➔ MDG indicators endogenous: are targets met in a particular year?
- **Alternative scenarios, e.g.**
  - Oil price shock ➔ impose change in world oil price
  - Global crisis ➔ e.g., impact through reduced export earnings or recalibrate baseline to capture crisis conditions
  - MDGs (2, 4, 5 and 7) achieved in a particular year
    - exogenous changes in public spending
    - or, model scales up public spending to meet targets given exogenous trend of MDG indicators
    - financing strategies: taxation, domestic or foreign borrowing, foreign aid, reallocation of spending, or a combination.
  - Analysis ➔ compare results with the baseline's

Example: MDGs are not achieved under a BAU scenario

% of target achieved by 2015 under a BAU scenario

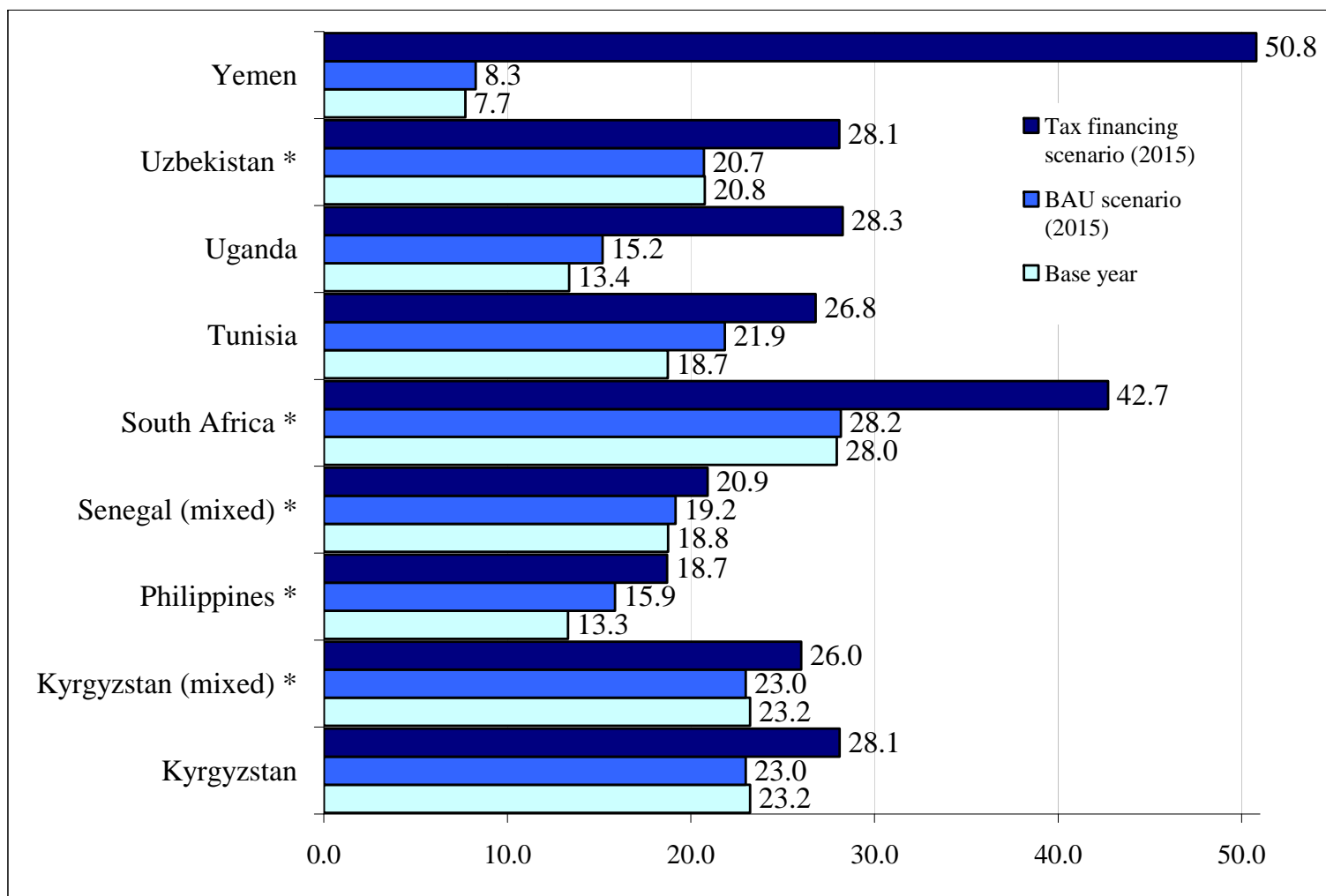|	MDG 1	MDG 2	MDG 4	MDG 5	MDG 7w	MDG 7s
Egypt	60.4	91.8	100.9	153.9	101.1	95.7
Kyrgyzstan	181.7	93.8	45.9	46.6	99.9	70.0
Philippines	82.7	61.1	98.2	82.6	105.0	107.0
Senegal	69.7	80.9	99.8	40.0	102.6	67.6
South Africa	110.2	72.0	27.0	78.7	87.4	95.4
Tunisia	117.0	98.1	94.8	56.8	99.7	95.2
Uganda	114.8	51.7	52.0	39.1	86.4	74.8
Uzbekistan	93.6	98.7	84.9	81.9	97.7	92.6
Yemen	59.3	55.8	59.5	n.a.	71.2	43.0

So: how much would it cost to achieve the MDGs?

MDG-related public spending in the base year and simulated scenarios
(per cent of GDP per year)

	Byr	BAU	Additional spending under financing scenarios			
			Foreign aid	Foreign borrowing	Domestic borrowing	Taxation
Egypt	1.48	1.50	0.26	0.26	0.27	0.28
Kyrgyzstan	5.58	4.88	7.83	7.83	n.a.	8.21
Philippines	2.21	2.00	6.30	6.30	7.17	7.41
Senegal	6.66	7.18	8.04	8.04	n.a.	n.a.
South Africa	5.91	3.07	n.a.	n.a.	n.a.	9.08
Tunisia	5.28	5.09	5.56	5.56	6.10	6.09
Uganda	3.89	4.24	6.73	6.73	9.47	9.21
Uzbekistan	5.94	6.28	n.a.	4.76	4.81	4.62
Yemen	5.37	16.04	10.39	10.39	18.76	17.39

What are feasible financing scenarios?

Tax revenue required for financing MDG-related public spending by 2015 (per cent of GDP)


Legend:
- Tax financing scenario (2015)
- BAU scenario (2015)
- Base year

Country	Tax financing scenario (2015)	BAU scenario (2015)	Base year
Yemen	50.8	8.3	7.7
Uzbekistan *	28.1	20.7	20.8
Uganda	28.3	15.2	13.4
Tunisia	26.8	21.9	18.7
South Africa *	42.7	28.2	28.0
Senegal (mixed) *	20.9	19.2	18.8
Philippines *	18.7	15.9	13.3
Kyrgyzstan (mixed) *	26.0	23.0	23.2
Kyrgyzstan	28.1	23.0	23.2

Note: For Kyrgyzstan and Senegal tax financing is combined with foreign-aid financing.
* indicates that tax financing is a recommended option (alone or combined with foreign aid).

What are feasible financing scenarios?

Foreign aid required for financing MDG-related public spending by 2015 (per cent of GDP)
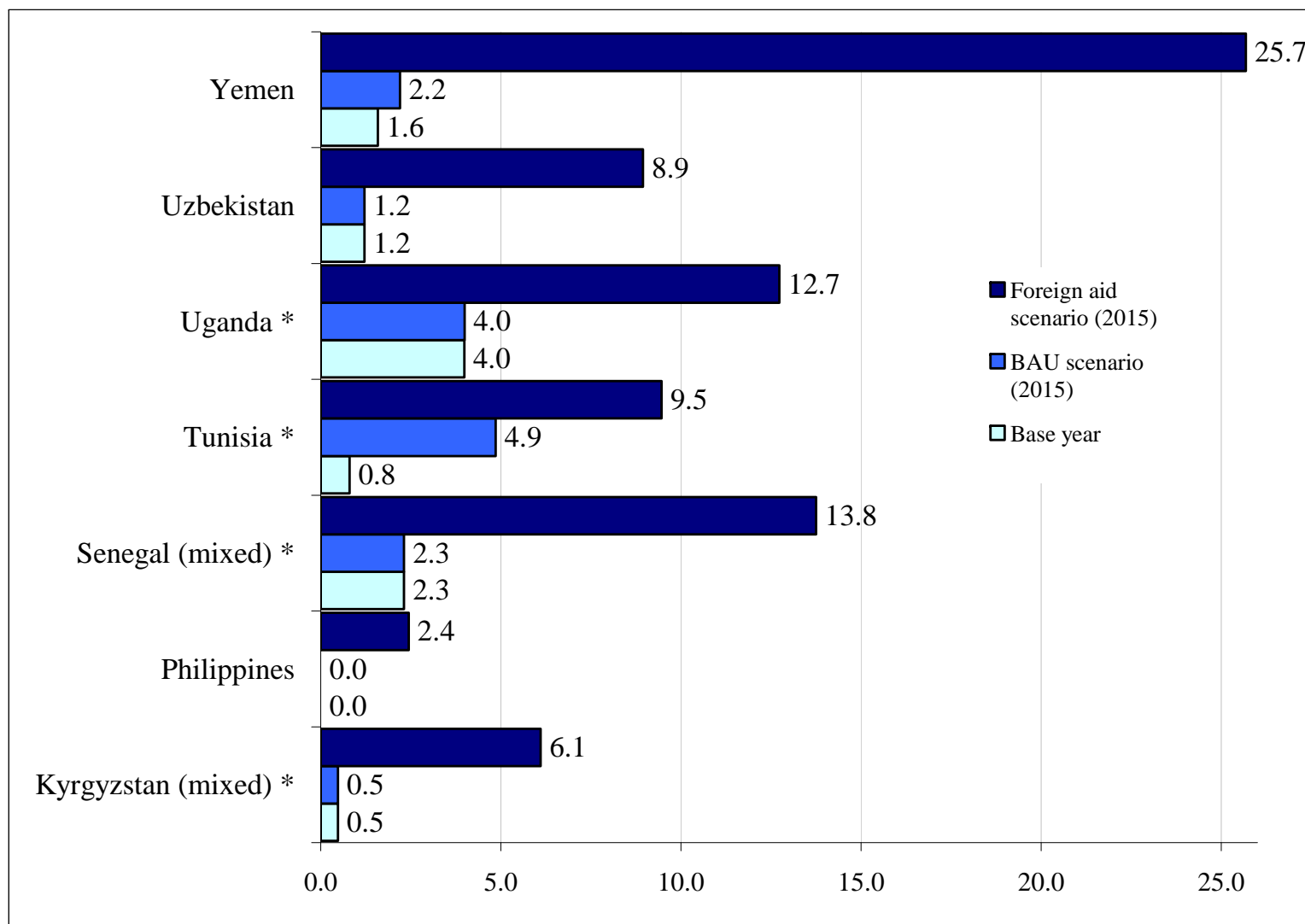
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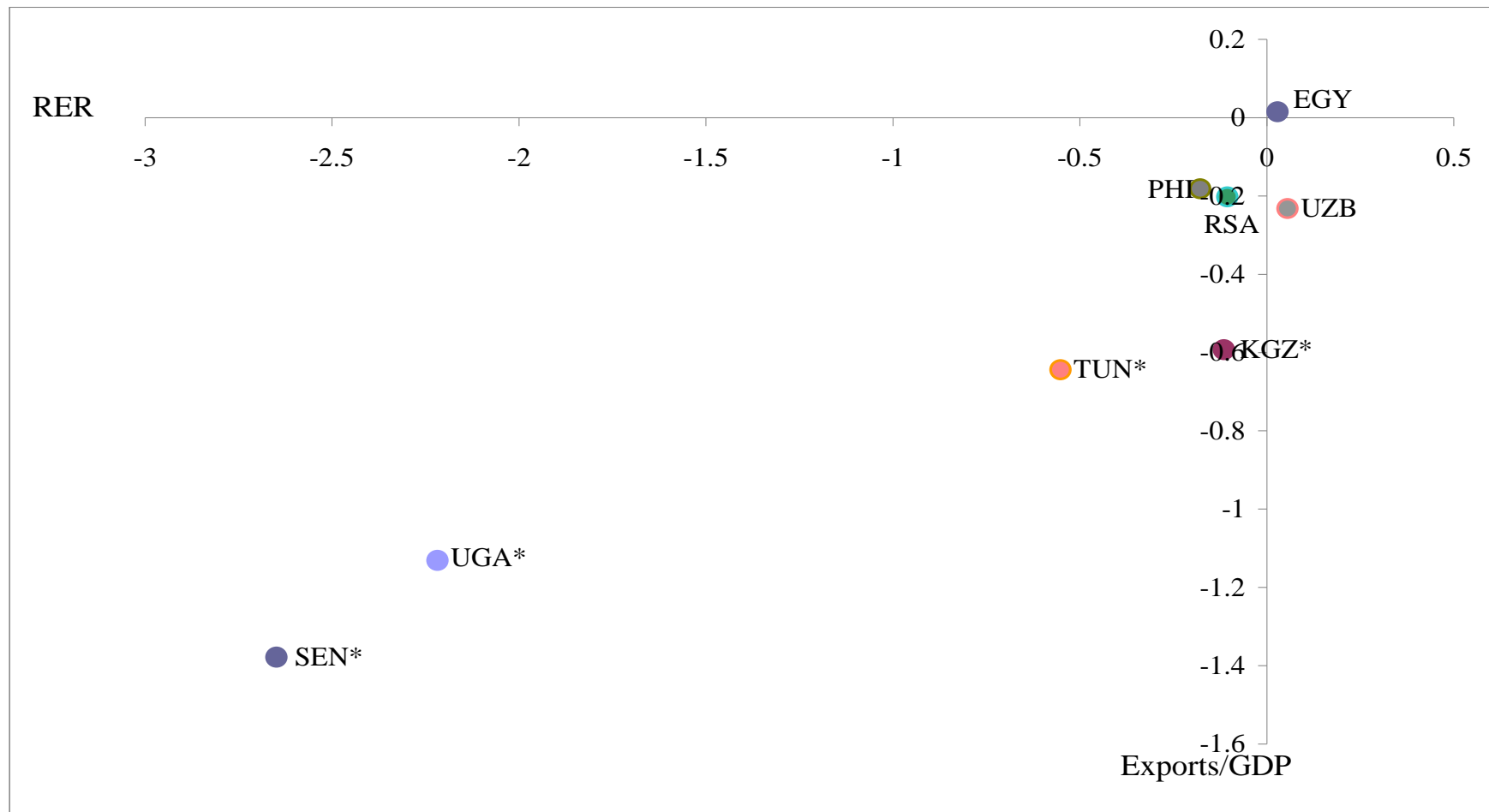* indicates that aid is a recommended option (alone or combined with foreign aid).

What are feasible financing scenarios?

Total public debt in the base year and 2015 in the baseline and borrowing scenarios
(per cent of GDP)

	Byr	BAU scenario	Foreign borrowing	Domestic borrowing
Egypt	118.7	121.1	123.0	125.0
Kyrgyzstan	77.1	26.0	71.8	n.a.
Philippines	61.8	56.6	85.6	135.0
Senegal	48.9	84.9	148.7	n.a.
Tunisia	56.6	33.2	73.8	n.a.
Uganda	19.5	22.9	67.5	188.2
Uzbekistan	27.5	6.8	34.1	49.0
Yemen	39.8	53.6	140.2	82.6

Another potential macroeconomic trade-off: Dutch disease effects

Change in RER and export-to-GDP ratio under the recommended MDG-financing scenario compared with the BAU scenario, 2010-2015 (in per cent; annual averages)
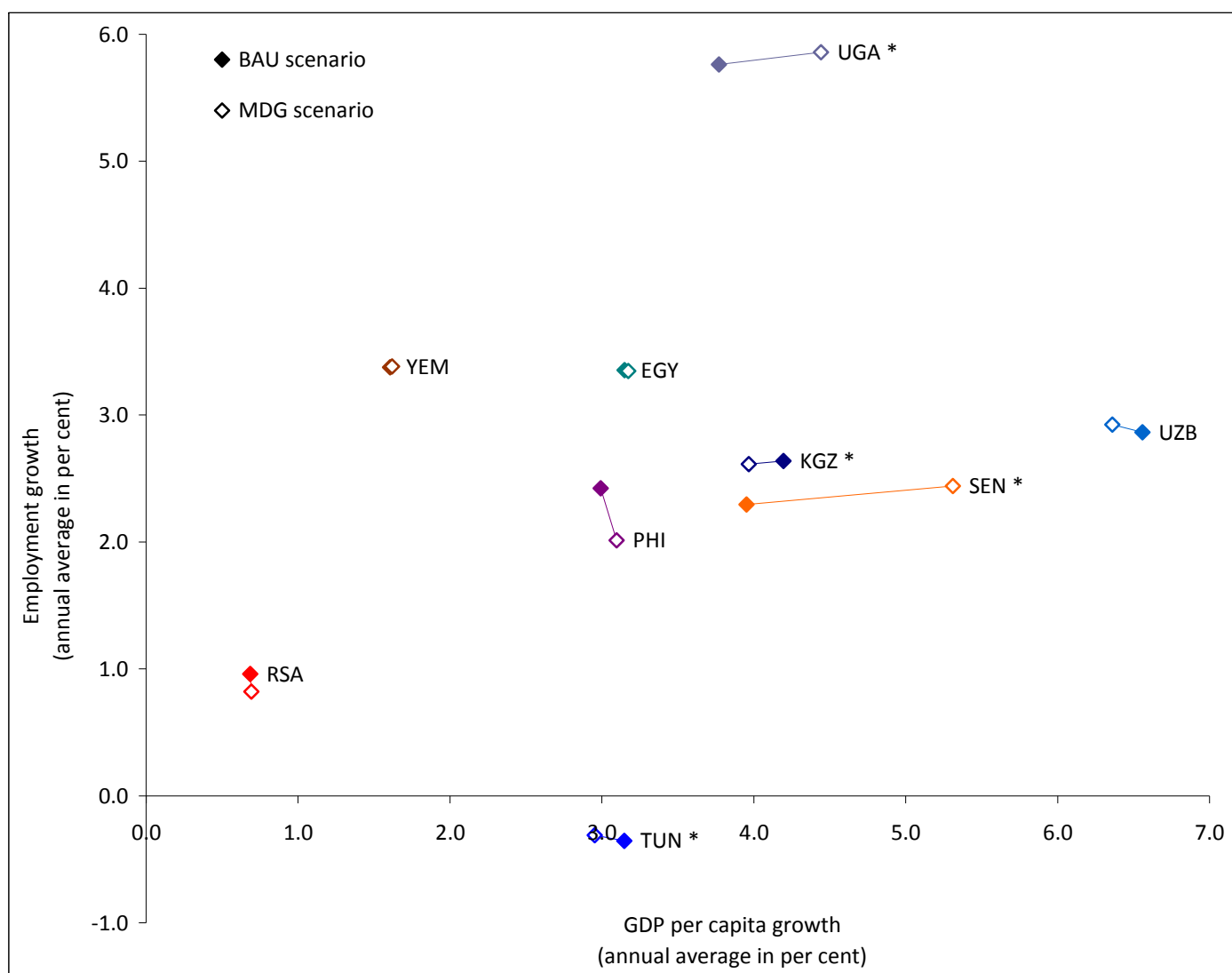

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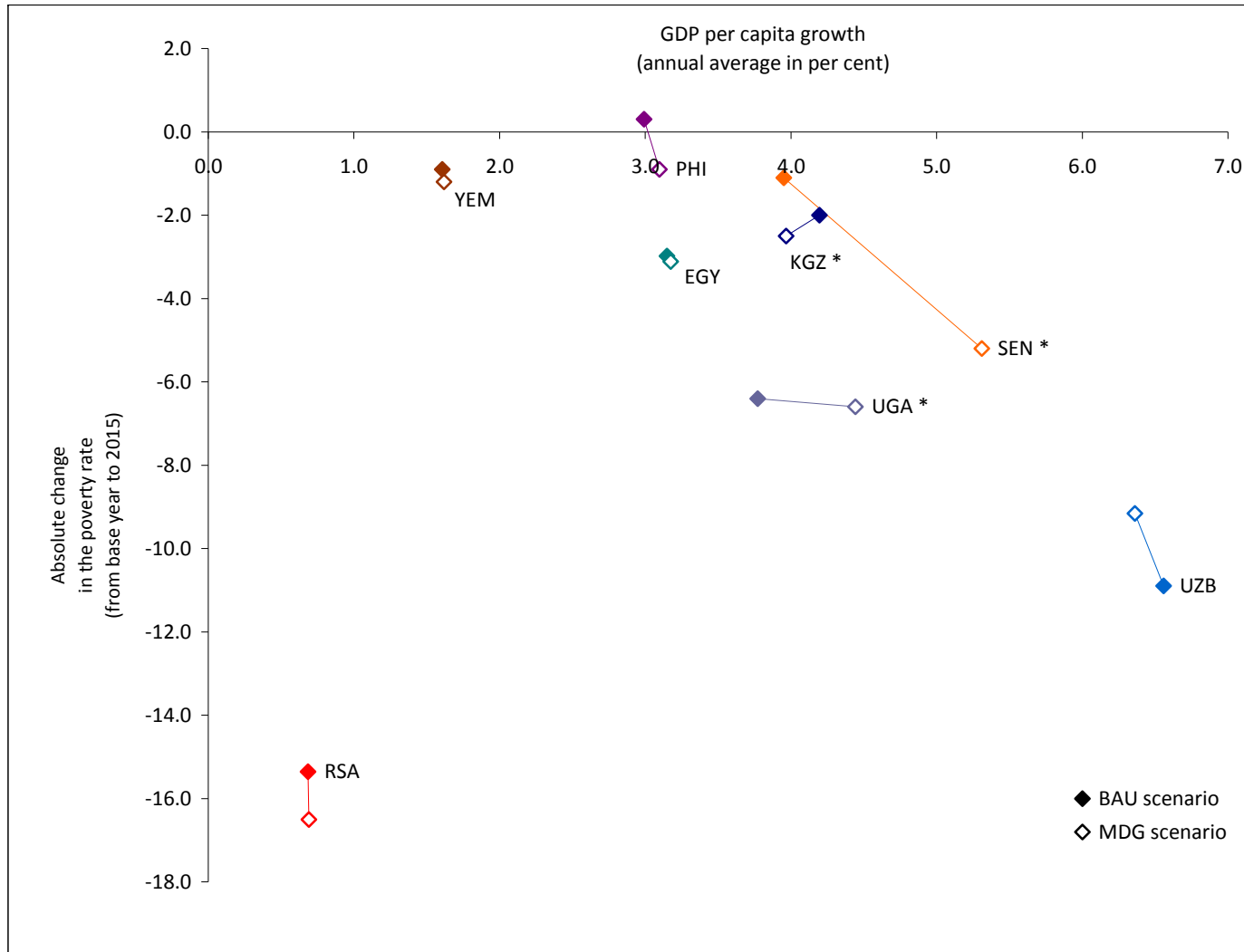
Effects on growth and employment

Employment-output nexus under the BAU scenario and the recommended MDG-financing scenario

* indicates that aid is a recommended option (alone or combined with foreign aid).

Growth and poverty

Change in income poverty and GDP per capita growth under the BAU scenario
and the recommended MDG-financing scenario

GDP per capita growth
(annual average in per cent)

Absolute change
in the poverty rate
(from base year to 2015)

PHI
YEM
EGY
KGZ *
SEN *
UGA *
UZB
RSA

◆ BAU scenario
◇ MDG scenario

* indicates that aid is a recommended option (alone or combined with foreign aid).

Framework extensively applied

- UN-DESA/UNDP/World Bank application in 19 Latin America and the Caribbean countries (with support from UN-ECLAC and IADB)
    - Lessons learned to improve modelling framework
    - Publication with Palgrave
- Follow-up applications (UN-DESA/UNDP/World Bank) covered:
    - 5 Arab States (Egypt, Jordan, Morocco, Tunisia and Yemen)
    - 3 Asian countries (Uzbekistan, Kyrgyzstan and **Philippines**)
    - 3 African countries (Senegal, South Africa and Uganda)
    - Publication with Bloomsbury forthcoming (some key results were presented in previous slides)
- Lessons learned on how to strengthen capacities in developing countries in support of policymaking
- This new project → 9 countries (Bolivia, Costa Rica, Ecuador, Honduas Nicaragua, Uganda, Jordan, Kyrgyzstan and **the Philippines)**

How is the new project different?

- UN-DESA collaborates with governments (and UNDP Cos) to continue strengthening governments' capacity to :
  - assess policies that are conducive to achieving human development goals <u>even beyond 2015</u>,
    - if MDGs are not attained by 2015, help policymakers assess development strategies and estimate further resource requirements under different scenarios.
  - <u>be better prepared to anticipate and respond to external adversities (e.g., high food and energy prices, drops in export demand or declines in worker remittances) to avoid future setbacks in human development.</u>
  - support builds on the accumulated work of previous projects and targets a "technical team" or group of national experts from various Government entities <u>to institutionalize use of policy modelling tools.</u>

How is the new project different? - cont

- **NEDA and PIDS are UN-DESA's partners in this project!**
- More gradual approach to training → Instead of regional workshops (usually 4 during the lifetime of the project), shorter but more regular training sessions.
  - For example, 4 hours a week during a period of time
  - PIDS leads the training in Manila and receives technical support from UN-DESA in New York.
- Before country chapters were elaborated for publication; this time round, trainees expected to use modelling tools to elaborate notes that address key policy issues.
- At the end, high-level event where policy notes are presented and discussed.

Project implementation in eight steps

1. **Inception workshop**
   - Crucial step to present the project and define implementation strategy, data availability, and so on.
2. Formation and consolidation of "technical team"
3. Building of dataset for MAMS
   - Disaggregation/updating of Social Accounting Matrix
   - Use of updated trends for baseline (growth, debt stocks, etc.)
   - Re-estimation of elasticities?
   - Use of information not previously available?
4. Calibration of MAMS with updated dataset → new reference
5. Training:
   - Basic CGE modelling?
   - Social Accounting Matrix (standard and MAMS')
   - Dataset construction and updating?
   - MAMS (system of equations, closures and rules, etc.)
   - ISIM-MAMS (uploading a data set, runs of scenarios, etc.)
   - Microsimulations

Steps 3-4 and 5 could be implemented simultaneously!

MVS

Project implementation in eight steps – cont

6. Implementation of policy simulations, analysis of results and elaboration of policy notes in selected areas

7. Final (policy) seminar and working meetings:
   - presentation/discussion of policy notes with high-level policymakers
   - definition of follow-up steps for institutionalization and maintenance (updating) of policy modelling tools
   - definition of uses to support policymaking and engagement of policymakers in a dialogue.

8. Dissemination of policy notes to promote a policy dialogue and identification of new demands for policy analysis

Objectives of inception workshop

- Present and discuss some of the key policy questions to be addressed through the capacity building activities.
- Explain and confirm agreement on the institutional arrangements under which capacity building activities will be undertaken.
- Describe the integrated macro and micro modelling framework.
- Present results of recently completed projects on MDG financing strategies and real-time simulation results as an introduction to the application of the modelling framework.
- Take stock of data availability and agree on future data collection.
- Agree on a timeline.

Programme: main sessions

- Overview of envisaged capacity development activities: objectives and modelling framework
- Assessment of financing strategies to achieve MDGs in the Philippines
- Explain core elements of the modelling tools:
  - MAMS
  - Core data base: SAM for MAMS and rest data set
  - How to identify MDG determinants
  - Microsimulation approach to assess poverty and inequality impact
  - ISIM-MAMS interface: an introduction and real-time simulations
- Summary of workshop; define next steps

Discussion: What would be key policy questions for the Philippines?

- Policy coherence between macro, sector and social policies
- Policy questions related to achieving MDGs at centre:
  - How does previous cost estimates change after proper accounting of the global financial crisis effects and other recent economic events?
  - What would be feasible financing strategies?
  - What might be economy-wide trade-offs and synergies?
    - Effects on growth?
    - Effects on employment and real wages?
    - Effects on public indebtedness?
    - Short versus long-run effects?
  - What if MDGs can not be achieved by 2015?
  - What would be feasible strategies to prevent setbacks in human development when confronting unfavourable shocks?

Discussion: What would be key policy questions for the Philippines? – cont

- Conditional Cash Transfer (CCT)?
  - Over-all impact (economy-wide, poverty and human development)
  - Cost-effectiveness vs other social programs
  - Synergies with other social programs or human development policies
  - Fiscal feasibility and sustainability
  - Cash transfers, yes; but, conditionality?
- Job-Skills Mismatch?
  - Strategies to turn human resource development policies and jobs generation coherent
    - Public spending in education to increase the supply of certain types of skills?
    - Fiscal incentive to production sectors and/or investments in public infrastructure that promote economic growth?
- Impact (of crises) on remittances?

Discussion: What would be key policy questions for the Philippines? – cont

- Any other?
  - After having seen an general overview of the modeling tools today, think about any other policy issue you may like to address using these tools.
  - Let's have a discussion at the end of the workshop.