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PROJECT NOTE:
DEVELOPMENT STRATEGY ANALYSIS WITH MAMS

The World Bank (DEC) is engaged in a work program aimed at developing and applying a tool for economywide analysis of strategies for achieving the Millennium Development Goals (MDGs) and, more broadly, policies for medium- and long-run growth and poverty reduction in developing countries. The tool – named MAMS (Maquette for MDG Simulations) – is a dynamic, country-level Computable General Equilibrium (CGE) model. It is designed to address questions about the effects over time of different government and foreign aid policies on social and economic performance. The government policies that typically are considered include recurrent and investment spending in different areas (including education, health, and infrastructure) and policies for taxation and subsidies (including those related to foreign trade). Typical performance indicators cover poverty and other MDG targets; growth in macro aggregates (private and government consumption and investment; exports; imports); macro balances (government budget, balance of payments); and the sectoral structure of production, employment, factor incomes, and trade.

Compared to other models of this type, MAMS is significantly extended to cover the processes that determine the MDGs and educational outcomes and their feedbacks to the rest of the economy. MAMS may also be run without the MDG module. The benefit of this is reduced and more flexible data requirements – the database for a macro-oriented version can quickly be put together from readily available data sources. This benefit comes at the cost of excluding analysis of MDG issues.

The rest of this webpage provides an overview of the work program – background, summary of activities undertaken, and appendices that credit the contributors to the program and list the project outputs, divided into written outputs and presentations.

BACKGROUND

At the UN Millennium summit of September 2000, the leaders of the world committed themselves to the achievement of the Millennium Development Goals (MDGs), a set of time-bound targets related to poverty, gender, education, health, and access to water and sanitation. Since 2000, the MDGs have remained at the top of the world development agenda.

As part of its ongoing support of the achievement of the MDGs, the World Bank in 2004 initiated a work program aimed at developing and applying a tool for economywide analysis of country-level MDG strategies. This focus on an economywide approach reflected the realization that, especially in low-income countries,

- (a) the implementation of MDG strategies typically have strong economywide effects, significantly affecting GDP growth, the government budget, the balance of payments, production and trade in different sectors, and the markets for labor and others factors; and
- (b) existing economywide models were not fit for the analysis of MDG strategies, especially given the fact that they did not explicitly consider the “production” of MDGs (with human development services and other determinants as inputs) or their influence on growth and other aspects of economic development.

The new model was named MAMS (Maquette for MDG Simulations).

Since July 2005, the project “Poverty reduction and human development: Analysis of alternative strategies within an economywide framework,” housed in DECPG and financed by the KCP (Knowledge for Change Program), has been the main vehicle for this work program. The project aims at

- (a) developing a user-friendly framework for dynamic economywide analysis of strategies for poverty reduction and human development, including MDG strategies;
- (b) generating empirical insights about the consequences of such strategies in selected countries in sub-Saharan Africa; and
- (c) strengthening the capacity of developing-country analysts to apply the framework.

Apart from providing resources needed to meet the above-mentioned project objectives, the KCP project has also served as a catalyst for a wider range of activities that uses the MAMS framework, both inside the World Bank and together with the UN system and institutions (government and academic) in developing countries

ACTIVITIES TO DATE

The achievements of this work program may be divided into three parts: (1) tool development; (2) country applications; (3) presentations and workshops.

Tool development

MAMS, which was developed under this work program, is a multi-purpose, dynamic CGE model.¹ Its originality is to fully integrate social services and their impact on the economy, including MDG indicators, within an otherwise standard economy-wide dynamic framework. The model is flexible in terms of structural features, disaggregation (and related data requirements), and the number of time periods for which it is solved.²

¹ The key author of the model and the computer code is Hans Lofgren, with major contributions from Carolina Diaz-Bonilla and Martin Cicowiez. The coding and the general development of the model has benefited greatly from inputs and discussions with Francois Bourguignon, Maurizio Bussolo, Jouko Kinnunen, Denis Medvedev, Sherman Robinson, Hans Timmer, and Dominique van der Mensbrugge.

² So far, it has been used for simulation periods ranging from 5 to 28 years. It may also be used for comparative-static analysis.

MAMS is rooted in the tradition of open-economy CGE modeling that was developed at the World Bank in the late 1970s and early 1980s.³ Its more specific starting point is the standard CGE model developed by Lofgren and coauthors.⁴ The fact that it draws on a literature that already is familiar to a large number of analysts facilitates use and understanding of the model. As opposed to other models, it incorporates a module with a relatively detailed representation of “social sectors,” linking MDG achievements (in health, education, and water-sanitation) to the provision of services and other determinants. These services may be provided by the government and the private sectors. The performance of the educational system influences the size and composition (in terms of educational achievement) of the labor force, thereby providing a feedback from MDG achievements to the rest of the economy. Growth is endogenous, determined by growth in factor employment and total factor productivity (TFP). TFP is influenced by the composition of the labor force (across labor types that differ in educational achievement), growth in government capital stocks (especially in public infrastructure), and changes in economic openness. User-selected elasticity values determine the importance of changes in government capital stocks and economic openness. MAMS tracks foreign and domestic debt stocks and related interest payments.

The multi-purpose capabilities of MAMS are demonstrated by the fact that it is or has been used to analyze a fairly wide range of issues, including strategies for MDGs and poverty reduction, fiscal policy, trade-offs between different allocations of government spending, foreign aid, foreign debt, labor market issues, demographics, and long-run growth.

The user can control the treatment of various structural features, most importantly the rules for clearing the different macro balances (for the government, savings-investment, and foreign exchange) and factor markets, including the treatment of un-/under-employment in the labor market.

If the analysis is not focused on issues related to MDGs and education, MAMS may be run in a non-MDG mode with reduced data requirements. If so, the growth of the labor force (which still may be split into multiple categories) has to be exogenous.

In the computer files underlying MAMS (written in GAMS and Excel), the database, which determines model disaggregation and selected model features, is clearly separated from the rest of the code. This makes it easy to apply MAMS to new country databases. The disaggregation of households, private production sectors, and non-labor factors is invariably flexible. For the non-MDG version, the disaggregation of labor and government sectors is also flexible; the minimum required disaggregation is three factors (labor, private capital, and government capital), two sectors (government and non-government), and three institutions (government, household, and rest of world).

³ See Dervis, Kemal, Jaime de Melo, and Sherman Robinson. (1982) *General Equilibrium Models for Development Policy*. New York: Cambridge University Press.

⁴ See Lofgren, Hans, Rebecca Lee Harris, and Sherman Robinson, with assistance from Moataz El-Said and Marcelle Thomas. (2002) *A Standard Computable General Equilibrium (CGE) Model in GAMS*. *Microcomputers in Policy Research*, Vol. 5. Washington, D.C.: IFPRI

Such a database can be constructed from readily available World Bank datasets.

Applications

MAMS applications have been completed or are underway in close to 30 countries. The work has been carried out in two contexts: World Bank analytical work (primarily direct inputs into economic and sector work in sub-Saharan Africa and Latin America and the Caribbean) and the project “Assessing Development Strategies to Achieve the Millennium Development Goals in Latin America”, carried out by the World Bank together with the UNDP (the lead institution) and the UN Department of Economic and Social Affairs (UNDESA).

In the context of World Bank analytical work, MAMS has been turned into a multi-purpose tool, responding to the demands in each specific context. Table 1 shows the countries and the issues that are covered in completed and on-going work. (Appendix B includes references and links.)

Table. MAMS applications feeding into the context of World Bank analytical work

Country	Year	Issues addressed	Context/Product
DRC	2007	Debt sustainability and fiscal space	PER (in progress)
Ethiopia	2005	MDG strategy	Input to government MDG Needs Assessment Synthesis Report
	2005	Poverty reduction strategy	Input to World Bank review of government strategy
	2006	Aid and absorptive capacity	Sundberg and Lofgren
	2006	Fiscal space, aid, government trade-offs	Report: Review of Public Finance
	2006	Demographics	Report: Capturing the Demographic Bonus in Ethiopia
	2007	Labor market flexibility and rural-urban migration	Report: Urban Labour Markets in Ethiopia
	2007	MDG strategy	Forthcoming chapter in Bourguignon and Bussolo, eds.
Ghana	2007	MDG strategy	CEM (available in draft form)
Honduras	2007	MDG strategy	PER (available in draft form)
Kenya	2007	Long-run growth; government trade-offs	CEM (in progress)
Madagascar	2007	MDG strategy	Not yet determined
Malawi	2007	Government spending composition and trade-offs	PER (available in draft form)
Tanzania	2007	MDG strategy	CEM (in progress)
Uganda	2006	Growth, government trade-offs and efficiency	CEM: Beyond Recovery - Investment and Behavior Change for Growth
	2007	Demographics and same topics as for CEM	PER (in progress)
Venezuela	2007	Sustainable poverty reduction strategies	Poverty Assessment (in progress)

* PER = Public Expenditure Review

** CEM = Country Economic Memorandum

Note: This table does not cover work under the World Bank - UNDP - UNDESA project "Assessing Development Strategies to Achieve the Millennium Development Goals in Latin America."

In terms of the second context, MAMS is the core model for 19 country studies in the UNDP-UNDESA-World Bank project on Latin America and the Caribbean. Each study has addressed the consequences of raising the supply of different types of government services sufficiently to achieve MDGs 2 (universal completion of primary school), 4 (reduced under-five mortality rates), 5 (reduced maternal mortality rates), and 7 (increased access to improved water and sanitation services). These targets were simulated under alternative assumptions about the source of the additional financing required (direct taxes, domestic borrowing, foreign borrowing, or foreign grants). After having received comments from the core project team, the authors are currently revising their studies. Most of the studies have been done by teams made up of analysts in academia and government in the different countries. World Bank staff carried out two of the country studies (the Dominican Republic and Honduras) in coordination with country authorities and the two World Bank country teams.

Presentations

Since its inception, the MAMS work program has emphasized outreach activities that disseminate research findings, raise the level of awareness of MAMS (both inside and outside the World Bank), and pave the way for model applications by a larger group of analysts. These activities have reached a diverse audience, including staff and consultants at the World Bank and other international organizations, and government officials and policy analysts in developing countries. As shown in Appendix C, presentations related to MAMS have been given on more than 30 occasions, including

- two three-day courses (in Washington, DC in 2006 and in Accra, Ghana in 2007)
- two PREM Learning week half-day courses (in 2005 and 2006);
- international conferences (the Global Trade Analysis Project [GTAP] and PEP [Poverty and Economic Policy] Research Network meetings in Addis Ababa in 2006);
- World Bank seminars on MAMS-related topics, including public finance, demography, and macroeconomic policy;
- collaborative research projects with UNDP and UNDESA (four two-five-day workshops in Latin America and two in the Middle East);
- high-level meetings at the UN (three presentations in New York, given in 2004, 2005, and 2006; presentation via video link at workshop in Bangkok in 2007);
- World Bank missions (in Ethiopia, Ghana, Kenya, and Madagascar);
- meetings with other development partners, including NGOs and the IMF

One result of these activities is that a relatively large number of analysts have developed skills that they subsequently have used in different MAMS applications, expanding the core group of WB staff and consultants who are capable of running MAMS.

APPENDICES

A. Contributors to Work Program

The following World Bank staff, consultants, and colleagues from other institutions have contributed to this work program (unless otherwise noted from the World Bank): Rahimaisa Abdula, Hashim Ahmed (Ethiopian Development Research Institute), François Bourguignon, Maurizio Bussolo, Luc Christiaensen, Martin Cicowiez (CEDLAS-UNLP and CEI), Bernard Decaluwé (Laval University), Sébastien Dessus, Carolina Diaz-Bonilla, Ishac Diwan, Boniface Essama-Nssah, Shahrokh Fardoust, Enrique Ganuza (UNDP), Ahmed Kamaly (American University in Cairo), Jouko Kinnunen (Åland Statistics and Research Bureau, Finland), Jeni Klugman, Praveen Kumar, John McArthur (UN Millennium Project), Dino Merotto, John Page, Jorgen Levin (University of Örebro, Sweden), Jeff Lewis, Hans Lofgren, Pavel Lukyantsau, Denis Medvedev, Antonio Nucifora, Luiz Pereira da Silva, Sherman Robinson (University of Sussex), Caterina Ruggeri-Laderchi, Marco Sanchez (UNDESA), Mark Sundberg, Shuo Tan, Hans Timmer, and Dominique van der Mensbrugge, and Rob Vos (UNDESA). Their individual contributions are recognized in Appendices B and C.

B. Written Outputs

2004

1. Bourguignon, François, Maurizio Bussolo, Luiz A. Pereira da Silva, Hans Timmer and Dominique van der Mensbrugge. (2004) "MAMS – MAquette for MDGs Simulation: a simple Macro-Micro Linkage Model for a Country-Specific Modeling of the Millennium Development Goals or MDGs." March 21.

2005

2. World Bank. (2005) *Global Monitoring Report: Millennium Development Goals: From Consensus to Momentum*. Box titled "Addressing absorptive capacity: the case of Ethiopia" (pp. 164-165). It was prepared by Mark Sundberg and Hans Lofgren.
3. FDRE (The Federal Democratic Republic of Ethiopia) (2005). "Ethiopia: The Millennium Development Goals (MDGs) Needs Assessment Synthesis Report," Ministry of Finance and Economic Development, Addis Ababa, December, Addis Ababa. Chapter IV (The Macroeconomic Impact of the MDG Strategy/Plan, pp. 45-52) is based on simulations with a macro version of MAMS, carried out by Hans Lofgren and Carolina Diaz-Bonilla.
4. Lofgren, Hans, and Carolina Diaz-Bonilla (2005). Macroeconomic Consequences of Alternative SADEP Scenarios: A Background Note. Note prepared as an input to the preparation of Ethiopia's SADEP (Strategy for Accelerated Development to Ending Poverty, Ethiopia's PRS equivalent). October 29.

2006

5. Sundberg, Mark, and Hans Lofgren. (2006) "Absorptive Capacity and Achieving the MDGs: The Case of Ethiopia," pp. 141-167 in eds. Peter Isard, Leslie Lipschitz, Alex Mourmouras, and Boriana Yontcheva. *The Macroeconomic Management of Foreign Aid: Opportunities and Pitfalls*. Washington, DC: IMF.
6. Diaz-Bonilla, Carolina and Cristina Savescu. (2006) "Simulations of Economic Impacts of Official Development Assistance and Oil Price Increases: Ethiopia." mimeo. DECPG, World Bank, Washington, DC. March. Background paper into the Global Development Finance (GDF), 2006.
7. Lofgren, Hans. Constructing a Macro SAM for MAMS in Excel. (Excel file programmed to aid in the construction of a Country Macro SAM for MAMS.) April.
8. World Bank Report. Ethiopia. Review of Public Finance. Poverty Reduction and Economic Management Unit. Country Department for Ethiopia. Africa Region.

- Draft. June 15, 2006. For MAMS-based inputs, prepared by Hans Lofgren and Rahimaisa Abdula, see pp. 13-14, 41-47 and 89-93.
9. Lofgren, Hans, and Rahimaisa Abdula. 2006. Domestic Policies and Foreign Aid: Alternative Scenarios for Ethiopia, 2006-2010. Background Paper for Ethiopia. Review of Public Finance. Poverty Reduction and Economic Management Unit. Country Department for Ethiopia. Africa Region. Draft. June 15.
 10. Lofgren, Hans and Carolina Diaz-Bonilla. (2006) "Economywide Simulations of Ethiopian MDG Strategies." Paper prepared for presentation at the Ninth Annual Conference on Global Economic Analysis, held in Addis Ababa in June.
 11. Lofgren, Hans and Carolina Diaz-Bonilla. (2006) "MAMS: An Economywide Model for Analysis of MDG Country Strategies: Technical Documentation." Mimeo. World Bank. Paper prepared for presentation at the Ninth Annual Conference on Global Economic Analysis, held in Addis Ababa in June.
 12. Ahmed, Hashim A., Carolina Diaz-Bonilla, Sherman Robinson, and Hans Lofgren. (2006) "Growth Strategies to Reach the Millennium Development Goals (MDGs) in Ethiopia." World Bank. Paper presented at the Ninth Annual Conference on Global Economic Analysis, held in Addis Ababa in June.
 13. Kamaly, Ahmed. (2006) On the Determinants of Selected Health and Education Outcomes in sub-Saharan Countries: A Quantitative Analysis. Draft. July 3.
 14. Lofgren, Hans and Carolina Diaz-Bonilla. (2006) Patterns of Growth and Public Spending in Uganda: Alternative Scenarios for 2003-2020. Background paper for Country Economic Memorandum. Draft. October 11.
 15. World Bank. (2006) Uganda: Beyond Recovery – Investment & Behavior Change, For Growth. Country Economic Memorandum. Volume 1: Summary and Recommendations. Poverty Reduction and Economic Management Unit. Africa Region. Draft. October 18.
 16. World Bank. (2006) Uganda: Beyond Recovery – Investment & Behavior Change, For Growth. Country Economic Memorandum. Volume 2: Overview. Poverty Reduction and Economic Management Unit. Africa Region. Draft. October 17.
 17. "Improving Country-Level Modeling in the World Bank", brief prepared by DECVP (Jeff Lewis and Francois Bourguignon) with inputs from DECPG (Hans Lofgren and Hans Timmer).

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18. Bussolo, Maurizio, and Denis Medvedev. (2007) “Millennium Development Goals for Honduras: current achievements and forthcoming challenges.” Paper prepared for the project “Public Policies for MDGs in Latin America and the Caribbean,” carried out jointly by the UNDP, UNDESA, and the World Bank. Draft. February.
19. World Bank Report No. 38665-ET. Urban Labour Markets in Ethiopia: Challenges and Prospects. Volume I: Synthesis Report; Volume II: Background Papers. Poverty Reduction and Economic Management Unit, Africa Region. March, 2007. For MAMS-based inputs, prepared by Hans Lofgren and Rahimaisa Abdula, see Vol. I pp. 71-73 and Vol. II, pp. 167-175. March
20. Bourguignon, Francois, Carolina Diaz-Bonilla, and Hans Lofgren. (2007) “Aid, service delivery and the MDGs in an economy-wide framework.” Draft. April 16. Forthcoming in eds. François Bourguignon, Luiz Pereira da Silva and Maurizio Bussolo, The impact of economic policies on poverty and income distribution - Macro-Micro Evaluation Techniques and Tools. New York: Palgrave.
21. World Bank. (2007) Honduras Public Expenditure Review. Preliminary Draft. (MAMS contribution by Maurizio Bussolo and Denis Medvedev.) April.
22. Bogetić, Željko, Maurizio Bussolo, Xiao Ye, Denis Medvedev, Quentin Wodon and Daniel Boakye. (2007) Ghana CEM: Meeting the Challenge of Accelerated and Shared Growth. CEM draft for review. April.
23. Diaz-Bonilla, Carolina, Hans Lofgren, Pavel Lukyantsau, and Antonio Nucifora. (2007) “Trade-Offs between Human Development and Infrastructure Spending in Malawi”. Chapter for forthcoming Malawi Public Expenditure Review. Preliminary Draft. May.
24. Government of Malawi and World Bank. 2007. Malawi: Public Expenditure Review. Draft. May (pp. 12-15 and 114-120 are based on MAMS).
25. World Bank Report No. 36434-ET. Capturing the Demographic Bonus in Ethiopia: The Role of Gender Equitable Development and Demographic Actions. Poverty Reduction and Economic Management 2 (AFTP2). Country Department for Ethiopia. Africa Region. Green Cover. June 27, 2007. For MAMS-based inputs, prepared by Hans Lofgren and Rahimaisa Abdula, see pp. viii-ix and 105-114.
26. Díaz-Bonilla, Carolina, Hans Lofgren, and Martín Cicowiez. 2007. Public Policies for the MDGs: The Case of the Dominican Republic. Paper prepared for the project “Public Policies for MDGs in Latin America and the Caribbean,” carried out jointly by the UNDP, UNDESA, and the World Bank. Draft. August.

27. Lofgren, Hans and Praveen Kumar. 2007. The Challenges of Achieving Kenya's Vision 2030: A Macro Perspective. Background paper for Country Economic Memorandum. Draft, August. World Bank.
28. Lofgren, Hans and Carolina Diaz-Bonilla. (2007) "MAMS: An Economywide Model for Analysis of MDG Country Strategies: Technical Documentation." Mimeo. World Bank. (1st version prepared in 2004).

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29. Diaz-Bonilla, Carolina and Jose Molinas. (2006) "Policy Simulations for Venezuela." Background paper for Venezuela's Poverty Assessment. Poverty Reduction and Economic Management. Bolivia, Ecuador, Peru, and Venezuela Country Management Unit. LAC region. Draft. August 20.
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30. World Bank Report No. 39370-VE. Bolivarian Republic of Venezuela, An Assessment of Poverty and Selected Misiones Sociales (In Two Volumes). Poverty Reduction and Economic Management. Bolivia, Ecuador, Peru, and Venezuela Country Management Unit. LAC region. ?? Cover. April 4, 2007. For MAMS-based inputs, prepared by Carolina Diaz-Bonilla and Jose Molinas, see pp. 73-76 (Vol. 1) and 182-189 (Vol. 2).

C. Presentations, Workshops, and Missions

2004

1. New York, December 2. Presentation by François Bourguignon titled "Toward Achieving the MDGs in Ethiopia: Economywide Analysis of Alternative Scenarios Using MAMS" at meeting with the UN Millennium Project. The presentation was prepared by François Bourguignon, Maurizio Bussolo, Hans Lofgren, Hans Timmer and Dominique van der Mensbrugge

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2. Maputo, Mozambique, March 14-15. Presentation of a MAMS-based case study on Ethiopia given by Mark Sundberg (DECVP) as part of the session "Aid Absorption: Recognizing and Avoiding Macroeconomic Hazards" of the "Seminar on Foreign Aid and Macroeconomic Management", organized by the IMF Institute and African Department.

3. New York, March 17. Keynote address by François Bourguignon titled “Towards Achieving the MDGs: Addressing Absorptive Capacity Constraints,” delivered at the UN ECOSOC High Level Policy Dialogue.
4. Montevideo, Uruguay, April 4-6. Workshop for the joint UNDP – UNDESA – World Bank project “Public Policies for MDGs in Latin America and the Caribbean,” covering 19 countries in the region. Presentations were given by Carolina Diaz-Bonilla (World Bank), Enrique Ganuza (UNDP), Hans Lofgren (World Bank), Sherman Robinson (University of Sussex), and Rob Vos (ISS). Maurizio Bussolo, and Denis Medvedev (both World Bank) served as resource persons.
5. Washington, D.C., April 27. Presentations and program at the PREM Learning Week course “MAMS: Maquette for MDG Simulations”. The program: 1. Overview (Hans Lofgren); 2. MAMS: Why the framework is needed (Hans Timmer); 3. An application to Ethiopia (Carolina Diaz-Bonilla); 4. The structure of the MAMS framework (Hans Lofgren); 5. MDG and micro-simulation modules – alternative approaches (Maurizio Bussolo); 6. Data needs and a demonstration run (Carolina Diaz-Bonilla); 7. General discussion and wrap-up.
6. Washington, D.C., May 19. Presentation titled “MAMS: Model Structure and an Application to Ethiopia” given by Hans Lofgren and Carolina Diaz-Bonilla to IMF and World Bank economists working on Africa, including a video link to the World Bank office in Ethiopia, May 19.
7. Washington, D.C., July 22. Presentation titled “Achieving the MDGs in Ethiopia: Alternative Strategies and Foreign Aid Constraints” given by Hans Lofgren and Carolina Diaz-Bonilla to World Bank staff in DC and, via video link, World Bank and Ethiopian government staff in Addis Ababa.
8. Washington, D.C., July 26. Presentation titled “MAMS: Model Structure and an Application to Ethiopia,” given by Hans Lofgren to representatives of the National Treasury of South Africa and World Bank staff in the Africa region (prepared with Carolina Diaz-Bonilla).
9. Addis Ababa, Ethiopia, September 23. Presentation titled “Economic Policy Analysis in Ethiopia: Issues and Macro-Micro Approaches” given by Hashim A. Ahmed (Ethiopian Development Research Institute [EDRI], Addis Ababa), Sherman Robinson (the Institute for Development Studies [IDS], Sussex), Ricardo Gottschalk (IDS), Hans Lofgren, and Carolina Diaz-Bonilla to Ethiopian economists and donors at the EDRI.
10. Washington, D.C., October 13. Lecture titled “MAMS: A CGE Model for MDG Analysis” given by Hans Lofgren (prepared with Carolina Diaz-Bonilla) as part of the course “Simulating the Poverty Impact of Macroeconomic Policies within the

PAMS Framework,” organized by Essama Boniface-Nssah of the World Bank Poverty Reduction and Economic Management Network and offered to World Bank and IMF staff.

11. Washington, D.C., October 13. Presentation titled “Public Expenditure Analysis with MAMS” given by Hans Lofgren (prepared with Carolina Diaz-Bonilla) as part of a Technical Roundtable on Approaches to Improve the Composition of Public Expenditures, organized by PRMPR and PRMPS in cooperation with ECSPE.
12. Washington, D.C., October 18. Presentation titled “Economy-Wide Simulations of MDG Strategies: Approach and Lessons from Ethiopia” given by Hans Lofgren and Carolina Diaz-Bonilla as part of a World Bank Africa region (AFRCE and AFR PREM) Breakfast Seminar.
13. Caracas, Venezuela, November 7-10. Workshop for the joint UNDP – UNDESA – World Bank project “Public Policies for MDGs in Latin America and the Caribbean,” which covers 19 countries in the region. Presentations were given by Martin Cicowiez (CEDLAS-UNLP and CEI), Carolina Diaz-Bonilla (World Bank), Enrique Ganuza (UNDP), Hans Lofgren (World Bank), Marco Sanchez (ECLAC), and Rob Vos (ISS). Maurizio Bussolo and Denis Medvedev (both World Bank) served as resource persons.

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14. Antigua, Guatemala, January 23-28. Maurizio Bussolo (World Bank), Martin Cicowiez (CEDLAS-UNLP and CEI), Carolina Diaz-Bonilla (World Bank), Denis Medvedev (World Bank), and Marco Sanchez (UNDESA) gave presentations and served as resource persons at a workshop for the Central American country teams in the joint UNDP – UNDESA – World Bank project “Public Policies for MDGs in Latin America and the Caribbean.”
15. Washington, D.C., February 1. Presentation titled “Introduction to MAMS Application in a Country Study” given by Carolina Diaz-Bonilla at World Bank (DECPG) meeting.
16. Washington, D.C., March 15. Presentation titled “Analyzing MDG Strategies” given by Hans Lofgren (prepared with Carolina Diaz-Bonilla) at the Workshop “Experiences with Ex-Ante Poverty Impact Assessments of Macroeconomic Policies in Bangladesh, Cameroun, Ghana, the Philippines, and Nepal,” organized by the New Rules for Global Finance Coalition and held at IMF Headquarters.
17. Washington, D.C., April 4-6. Three-day course titled “Economy-Wide Analysis of Strategies for Achieving the MDGs in Sub-Saharan Africa,” with 25 participants, including researchers from six countries in sub-Saharan Africa (Ethiopia, Ghana, Kenya, Madagascar, Malawi, and Uganda) and World Bank

staff and consultants, designed by Hans Lofgren and offered at World Bank HQ. Presentations were given by François Bourguignon (World Bank Chief Economist and Senior Vice President), Maurizio Bussolo (Senior Economist, Development Economics – Prospects Group, World Bank), Bernard Decaluwé (Professor of Economics, Laval University, Quebec, Canada), Carolina Diaz-Bonilla (Consultant, Development Economics – Prospects Group, World Bank), Boniface Essama-Nssah (Senior Economist, Poverty Reduction and Economic Management, World Bank), Ahmed Kamaly (Assistant Professor in Economics, American University in Cairo, Cairo, Egypt), Hans Lofgren (Senior Economist, Development Economics – Prospects Group, World Bank), John W. McArthur (Deputy Director, UN Millennium Project), John Page (Chief Economist, Africa Region, World Bank), Sherman Robinson (Professor of Economics, University of Sussex, UK), Mark Sundberg (Lead Economist, Development Economics – Office of the Chief Economist, World Bank), and Hans Timmer (Manager, Development Economics – Prospects Group, World Bank).

18. Washington, D.C., May 2. Half-day PREM Learning Week course on MAMS, “MAMS: A Tool for Analysis of MDG Strategies,” including the following presentations: 1. Introduction and Overview (Hans Timmer/Hans Lofgren); 2. The structure of the MAMS framework (Hans Lofgren); 3. Data requirements (Carolina Diaz-Bonilla); 4. MDG Scenarios in MAMS: Defining and simulating (Denis Medvedev); 5. Small group work: Analyzing simulations for country X (Medvedev); 6. General discussion and wrap-up.
19. Cairo, May 4-5. Presentation titled “MAMS: Structure and Data Requirements” given by Hans Lofgren at the UNDP – UNDESA – World Bank – League of Arab States workshop “Assessing Development Strategies to Achieve the MDGs,” held at the League of Arab States.
20. Washington, D.C., June 1. Presentation titled “An Econometric Analysis of the Determination of Health and Education Outcomes in sub-Saharan Africa” given at World Bank HQ by Ahmed Kamaly.
21. Addis Ababa, Ethiopia, June 15-17. Session titled “Economywide Analysis of MDG Strategies,” at the Annual Conference on Global Economic Analysis “Multilateralism, Bilateralism, and Development”, organized by the Center for Global Trade Analysis, Purdue University and held at the Economic Commission for Africa. The presentations: (a) Hans Lofgren. MAMS: A Framework for Analyzing MDG and Poverty Reduction Strategies; (b) Carolina Diaz-Bonilla. Economywide Simulations of Ethiopian MDG Strategies; and (c) Maurizio Bussolo. Millennium Development Goals for Honduras: Current Achievements and Forthcoming Challenges.
22. Addis Ababa, June 18-22. Presentation titled “Analysis of Strategies for Achieving the Millennium Development Goals” by Hans Lofgren and Carolina

- Diaz-Bonilla at the Fifth General Meeting of the PEP (Poverty and Economic Policy) Research Network, held at the Economic Commission for Africa.
23. Antananarivo, Madagascar, June 22. Presentation titled “MAMS: Outil pour la diagnostique de l’achèvement des ODM et son application au cas de Madagascar” given by Dominique van der Mensbrugge (prepared together with Shuo Tan).
 24. Addis Ababa, Ethiopia, July 10. Presentation titled “Capturing the Demographic Bonus in Ethiopia” given by Kathleen Beegle and Hans Lofgren at the National Symposium “Population Issues and the PASDEP: From Concept to Action.” The symposium was attended by representative of Ethiopia’s government, international organizations, research institutions, and NGOs interested in population issues in Ethiopia.
 25. New York, August 15. Presentation by François Bourguignon titled “MDG Strategy Analysis: Issues, Methods and Agenda for Future Work” (prepared together with Hans Lofgren and Jeff Lewis) at meeting on Approaches to MDG Analysis Organized by the Poverty Group, Bureau for Development Policy, UNDP.
 26. Santiago, Chile, September 4-6. Workshop for the joint UNDP – UNDESA – World Bank project “Public Policies for MDGs in Latin America and the Caribbean,” which covers 19 countries in the region. Presentations were given by Carolina Diaz-Bonilla (DECPG), Enrique Ganuza (UNDP), Rob Vos (UNDESA), Marco Sanchez (UNDESA), and the different country teams.

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27. Washington, D.C., February 19-21. Presentation by Jeff Lewis titled “MDG Strategy Analysis: Issues, Methods and Agenda for Future Work” (prepared together with François Bourguignon and Hans Lofgren) at the “Technical Workshop on MDG based Planning and Development of a Pro-Poor Policy Framework”, held in Bangkok (presentation made via video connection).
28. Nairobi, February 19. Presentation by Hans Lofgren titled “Macro Scenarios for Vision 2030,” as part of a mission for work on a Country Economic Memorandum for Kenya. The presentation was given to representatives of Kenya’s Ministry of Finance Ministry of Planning and Economic Development.
29. Accra, Ghana, February 6-8. As part of a CEM mission, Maurizio Bussolo gave a three-day course on MAMS to 18 officials coming from the Ministry of Finance and Economic Development, the National Development Planning Commission and the Bank of Ghana.
30. Cairo, Egypt, April 2-5. Hans Lofgren gave presentations titled “MAMS: What is it? Why use it?,” MAMS: Core CGE and MDG Modules,” and “Some Practical

Hints for MAMS-Related Project Tasks,” at the Inception and Training Workshop of the project “Assessing Development Strategies to Achieve the MDGs in the Arab Region”, carried out by the World Bank in partnership with UNDP – UNDESA – World Bank – League of Arab States. The workshop was held at the League of Arab States. For further details, see:
www.un.org/esa/policy/cairo_mdgs.html

31. Washington, D.C., April 19. Presentation by Luc Christiaensen (EASRE) titled “Benefits from accelerating the demographic transition – evidence from Ethiopia” (with inputs from Hans Lofgren and Rahimaisa Abdula) given at the “Economists Forum” held at World Bank Headquarters, April 19. The presentation was based on World Bank Report No. 36434-ET. Capturing the Demographic Bonus in Ethiopia: The Role of Gender Equitable Development and Demographic Actions. Poverty Reduction and Economic Management 2 (AFTP2). Country Department for Ethiopia. Africa Region. Green Cover. July 18, 2006.
32. Washington, D.C., April 27. Presentation by Hans Lofgren, Carolina Diaz-Bonilla, and Hans Timmer titled “MAMS: A Tool for Public Finance and Development Strategy Analysis” offered as part of the “Public Finance Analysis and Management Core Course,” PREM Learning Week. Course background material is found on the World Bank at:
www1.worldbank.org/publicsector/pe/pfma07/
33. Pavia, Italy, July 12. Presentation by Hans Lofgren titled “Policy Modelling of the MDGs: the MAMS Approach” (prepared with Carolina Diaz-Bonilla) at the workshop “Policy Modelling and Simulation for Well-Being Assessment: A Comparison of Methodological Tools” organized by the Human Development, Capability, and Poverty International Research Centre (HDCP-IRC) of the Institute for Advanced Study (IUSS) of the University of Pavia.

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