

Plenary Session VIII: MAMS Closure Rules and Definition of Scenarios in Excel

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Outline

- Context and options for different types of closures
 - macro
 - factor markets
 - commodity markets
- Closures for key project scenarios

1. Macro Closures

- Clearing mechanisms (assuring that receipts = outlays) for three macro balances
 1. Balance of Payments
 2. Savings-Investment Balance
 3. Government budget
- The following slides discuss these three macro balances.

Balance of Payments

- Non-trade-related payments (transfers, foreign investment) are non-clearing, determined by their own rules (exogenous values in foreign currency; exogenous shares of GDP; shares of domestic income flows).
- The exchange rate (in the model is local currency per unit of foreign currency) clears the balance by influencing export and import quantities.
- Excel file and sheet: *<app>-data-general.xls, rowclos0*.

Balance of Payments

- A BoP deficit (e.g. due to a decline in foreign aid) → depreciation (↑ exchange rate) →
 - for domestic producers: increased price for exports relative to domestic sales [increased real exchange rate] → larger share of output to exports
 - for domestic demanders: increased price of imports relative to domestic commodities [increased real exchange rate] → smaller share of demand to imports
- Vice versa for the case of a BoP surplus.
- In both cases, the exchange rate will change as much as needed to bring about the export and import changes needed to eliminate the imbalance.

Savings-Investment Balance

- Government investment
 - typically determined by needs for capital stocks in government service production
 - government closure rule (discussed below) assures that it is financed
- Foreign Direct Investment (FDI): “savings” (financing) determines investment spending.
- Savings-investment closure rule affects link bt household savings and household private investment.
- Excel file and sheet: *<app>-data-general.xls, siclos0.*

Rules for Clearing Saving- Investment Balance

No.	household investment	household saving
1	clearing variable: investment quantities; endogenous GDP and absorption shares	rule-determined savings rate for households
2	exogenous absorption share	clearing variable: uniform savings rate point change for selected households
3	exogenous absorption share	clearing variable: uniform savings rate scaling for selected households
4	exogenous GDP share	clearing variable: uniform savings rate point change for selected households
5	exogenous GDP share	clearing variable: uniform savings rate scaling for selected households

Rules for Clearing Government Budget

- The choice of rule (= variable) for clearing the government budget is an important part of many counterfactual scenarios.
- The following table shows alternative rules.
- See the Excel file and sheet *<app>-data-general.xls, govclos0*.

Rules for Clearing the Government Budget

No.	Variable clearing the budget
1	all domestic tax rates (direct and indirect): uniform scaling
2	direct tax rates: uniform point change for selected households
3	direct tax rates: uniform scaling for selected households
4	transfers to government from the rest of the world (grant aid)
5	foreign borrowing;
6	domestic government borrowing (interest paid on debt)
7	government borrowing via monetary sector
8	separate treatment of current and capital budgets:* a. current budget: direct tax rates: uniform scaling for selected households (same as 3) b. capital budget: domestic government borrowing (same as 6) exogenous government savings*
9	government spending on one or more commodities (specified by government spending rule)

*To separate the two, government saving (current receipts - current spending) is exogenous; for all other rules, it is endogenous.

Rules for Non-Clearing Government Spending and Receipts Items

- Separate rules required for spending and receipt items that do not play the role of clearing the government budget.
- The following two tables show available options for such spending and receipt items.
- See the Excel file and sheets <app>-*data-general.xls*; *govrulespnd0* or *govrulerec0*.

Rules for Government Spending

No. Rule (disaggregated by commodity)

- 1 Fixed real growth rates for government consumption*
- 2 Fixed GDP share
- 3 Fixed absorption share
- 4 Fixed educational quality for cycle of commodity**
- 5 All items under 1-4 are flexible***

*For infrastructure, fixed growth rate for capital, not consumption;

**Only for education services (one per level or cycle);
quality = [service level]/[enrollment].

***If other rule controls spending. Required for at least one commodity if government closure 9; required for MDG-related services when MDGs are targeted.

Rules for Government Receipts

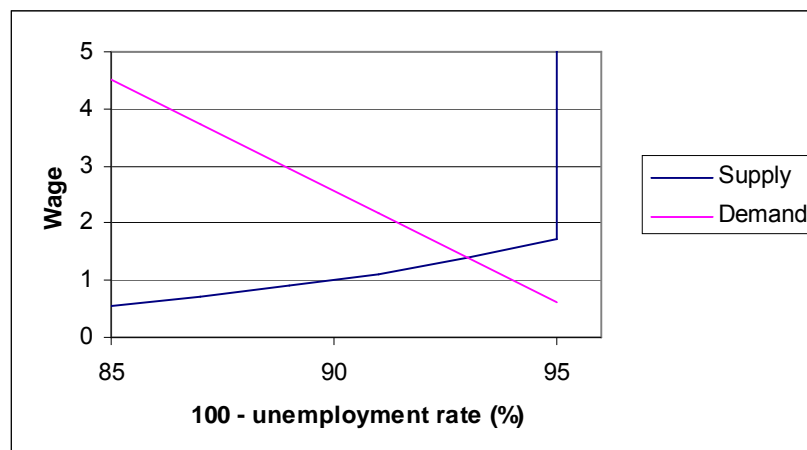
	Fixed	
	1	2
Direct taxes	rate	GDP share
Import taxes	rate	GDP share
Export taxes	rate	GDP share
Other indirect taxes	rate	GDP share
Transfers from RoW	value (FCU)**	GDP share
Government borrowing		
-- bond	value	GDP share
-- monetary system	value	GDP share
Foreign borrowing	value (FCU)	GDP share

*In addition, selected receipts may be flexible as part of the over-all government closures; if so, items 1 and 2 are both flexible. **FCU = foreign currency units.

2. Market-Clearing Variables for Factors

- Factors. Two alternatives
 1. exogenous unemployment: wage clears.
 2. endogenous unemployment. Two regimes:
 - a. unemployment above minimum rate: unemployment rate clears (influencing reservation and market wage)
 - b. unemployment at minimum rate (= full employment): wage clears
- See the Excel file and sheets *<app>-data-general.xls*; *facclos0*; and *uerat00*, *ueratmin*, *wfreselas*.

Factor Market with Endogenous Unemployment



3. Market-Clearing Variables for Commodities

- Commodities. Three categories
 - domestic output sold at home: prices
 - exports: quantities demanded (small-country assumption) *or* international constant-elasticity demand function
 - imports: quantities supplied
- Multiple options only specified for exports. See the Excel file and sheets *<app>-data-general.xls*
 - the sheet *sam-related-sets*, the set *ced* (empty if small-country assumption, the typical case)
 - the sheet *tradelas*, the parameter *tradelas(c,'rhoe')*

4. Closures for Key Project Scenarios

- In the core project scenarios, the government adjusts its consumption spending in one or more service areas sufficiently to achieve one or more MDGs, with a flexible financing source.
- Rule for government consumption of relevant services (*govrulespnd0*): 5 (government consumption is a free variable; no restrictions in terms of growth, GDP or absorption shares, or services per student [if education]).

Closures for Key Project Scenarios

- Rules for clearing government budget
 - 1 (scaling of domestic direct and indirect tax rates)
 - 4 (grant aid)
 - 5 (domestic borrowing with interest payments on the resulting debt) or
 - 6 (foreign borrowing with interest payments on the resulting debt)