

Consultancy to Develop and Implement a
Macroeconomic Model for Lesotho (DIMMoL)

Macro-Econom(etr)ic Modelling

Part 3

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Course program

- Introduction
- **Outline of macroeconom(etr)ic models (cont.)**
- Macroeconomic framework
- Econometric methodology
- Applied econometrics with EViews
- Lesotho case studies

Goods market: supply side

- Production of goods (and services) and generation of (domestic) income = use of (domestic) input factors
- Production function for capturing production possibilities
- Input factors
 - labor
 - (physical) capital stock
 - land usage
 - [Technology]
- Most common: Cobb-Douglas production function and time trend for technological progress
- Extensions: human capital, role of health, etc.
- Disaggregation by industries

Goods market: inflation

- Cost-push inflation
 - unit labor cost: wages and productivity
 - exchange rate/external prices (oil, etc.)
- Regulatory influences
 - taxes
 - administrated prices
 - Import regulations
- Demand-driven inflation
 - output-gap

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- What inflation?
 - GDP-deflator
 - Consumer price index (CPI)

example:
oil price increase

Labor market (wage block)

- Supply of labor
 - fix or real-wage dependent
 - long-run: population-dependent
(aging, health, behavior (e.g., participation rates))
- Demand for labor
 - derived from production function
- Disaggregation by skills
- Nominal wage setting
 - unemployment rate (relative bargaining power)
 - inflation expectations
 - minimum

⇒ expectation-augmented Phillips-curve

Money market 1 (interest block)

- Demand for money
 - income-dependent via velocity of circulation (income as a proxy for transaction volume)
 - interest-sensitive
- Money supply
 - monetary base controlled by central-bank
 - money creation via lending of commercial banks
- BUT: special case of Lesotho!

Money market 2 (The Lesotho case)

- Common Monetary Area: fixed exchange rate with CMA partners
- Small country within the CMA: exogenous exchange rate fluctuations (independent of domestic current account balance)
- ⇒ Money supply no longer exogenous
- ⇒ Interest rate no longer endogenous
- ⇒ Adjustment via current account and real exchange rate channel

Foreign exchange market (external block)

- Demand-side
 - imports of goods and services
 - exports of capital (portfolio or direct foreign investment)
- Supply-side
 - exports of goods and services
 - special treatment of income transfers from SA
 - imports of capital (portfolio or direct foreign investment)
- Central bank interventions
 - Linkages with monetary block
 - Sterilization policy?

Terminology: Exchange rates

- Exchange rate = price of foreign currency
(foreign currency in terms of domestic currency)
example: Euro-exchange rate: 9 [M/€]
- Appreciation
= decrease of exchange rate (example: 8 [M/€])
- Depreciation
= increase of exchange rate (example: 10 [M/€])
- Case of fixed exchange rates
appreciation = revaluation
depreciation = devaluation

Government activities (fiscal block)

- Public revenue

- taxes (including customs receipts)
- social contributions
- interest payments from public assets

- Public expenditure

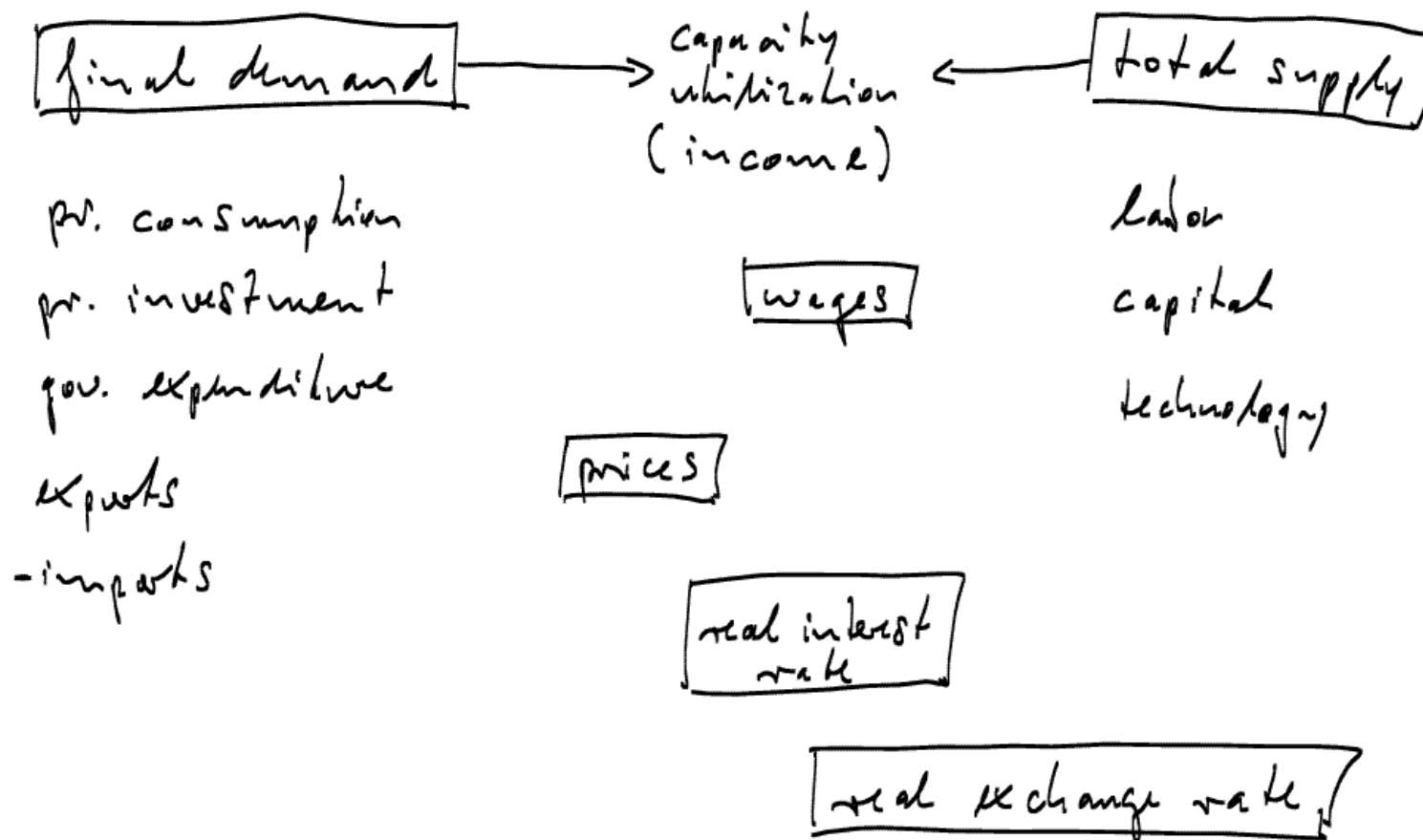
- goods and services
- social transfers
- interest payments on public debt

⇒ Budget surplus/deficit

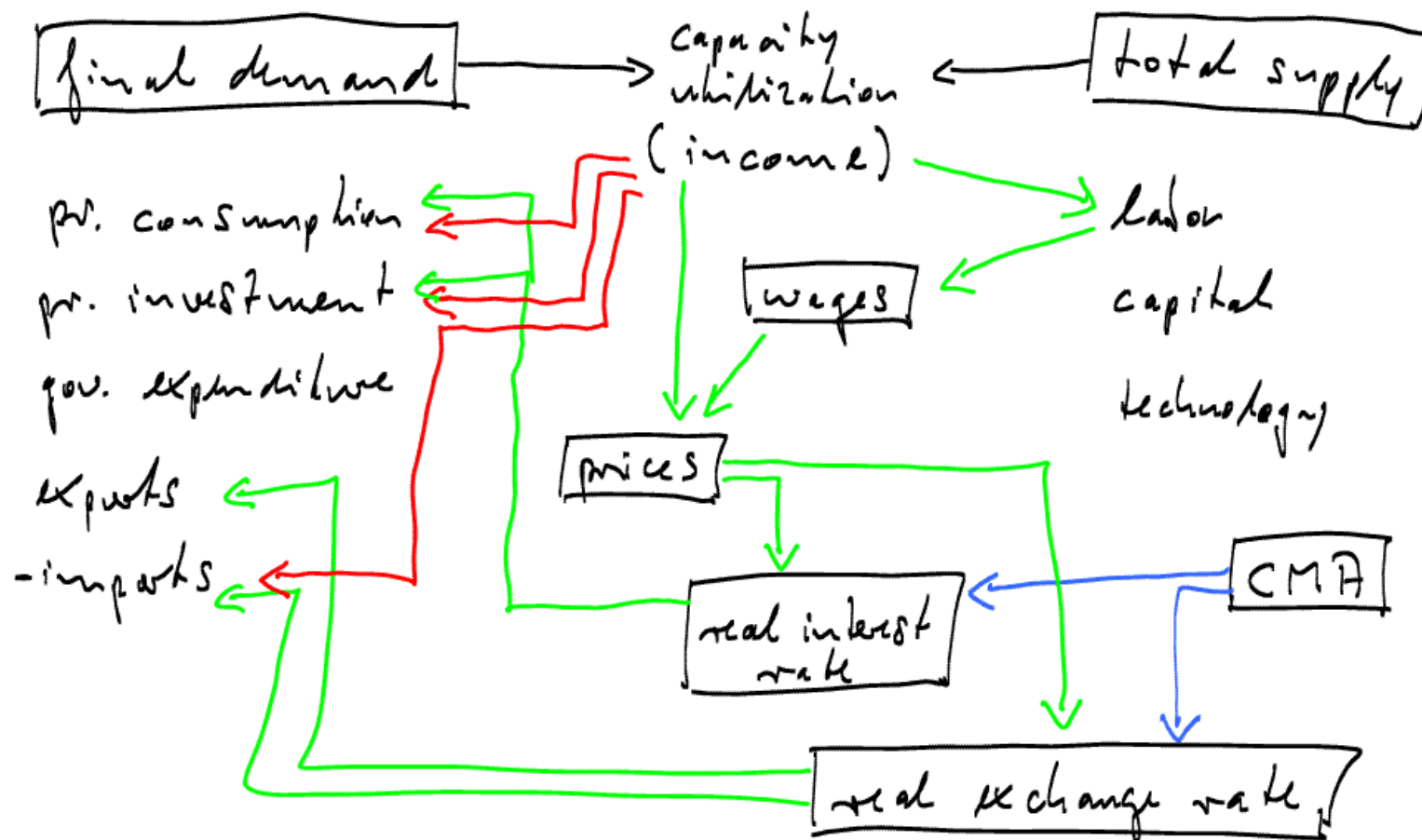
⇒ Just a model add-on in the short run

- except for existence of budgetary rules
- debt/asset dynamics relevant in the medium and long run

Putting it all together



A walk through the model



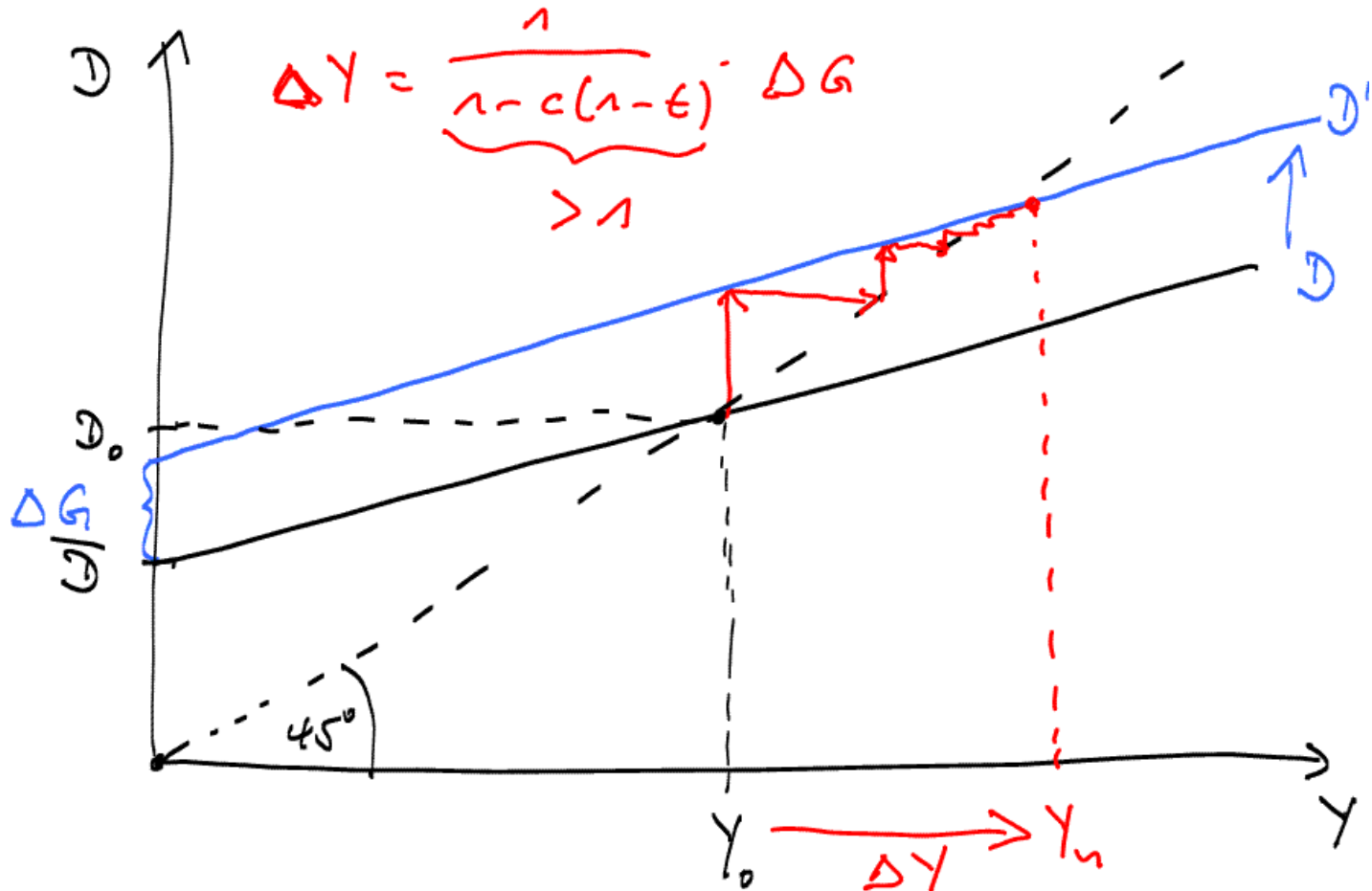
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The IS-LM/AD-AS framework: Overview

- Income-expenditure model (Keynesian multiplier)
- IS-curve
- LM-curve
- IS-LM model
- IS-LM mechanics within a monetary union
- AD-curve
- AS-curve
- AD-AS model
- AD-AS dynamics
- Inflation: DAD-DAS

Income-expenditure model: Closed economy



Income-expenditure model: Open economy

