# Why is Fiscal Policy important for FPP?

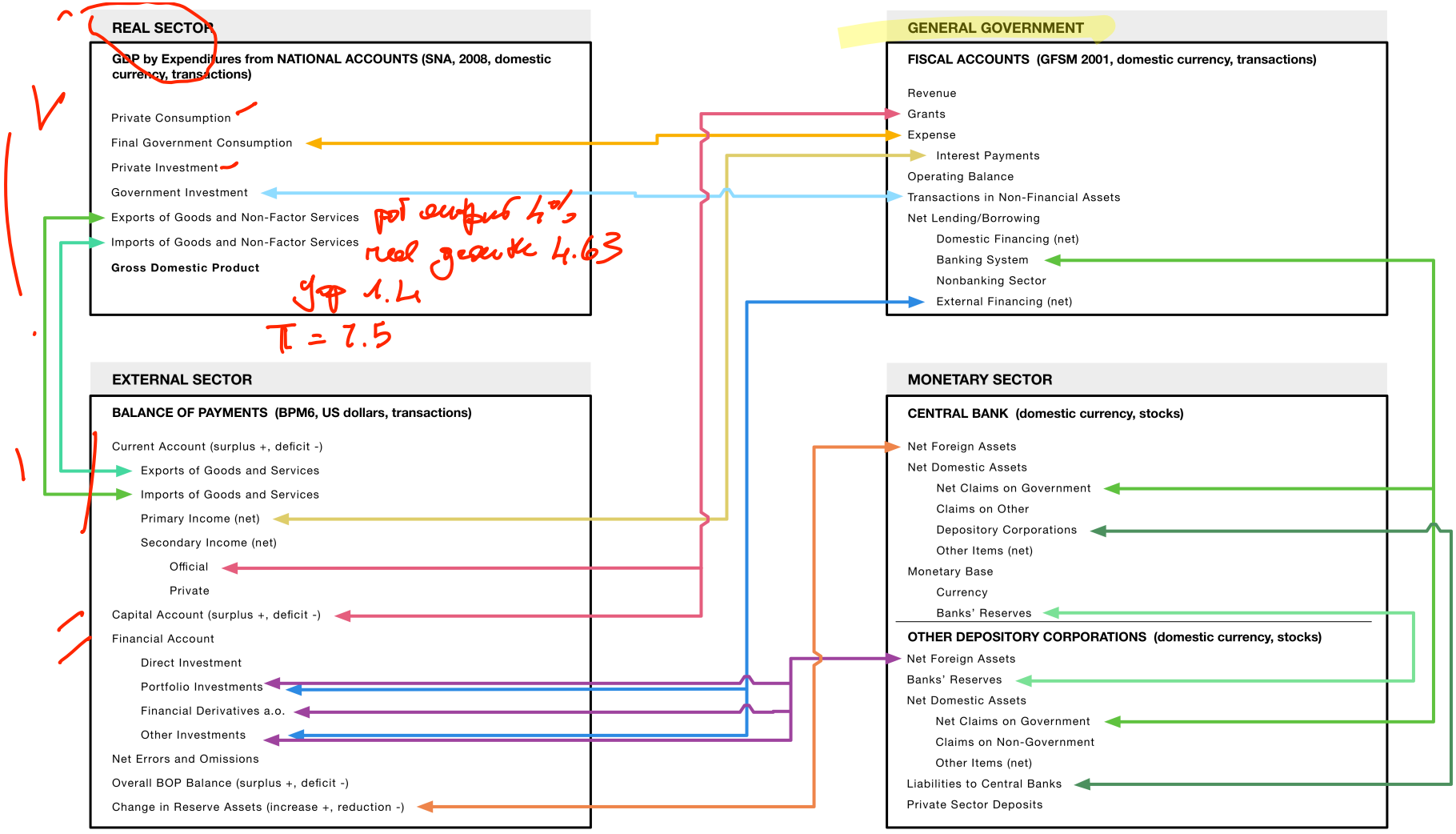
1. Fiscal Policy is related to the level and composition of Aggregate Demand (AD) as a stabilization tool in short-run

2. Fiscal Policy may be inflationary

3. Fiscal Policy may affect the Current Account balance through Saving-Investment balance

4. Fiscal Policy may trigger a Capital Account crisis by triggering a sudden stop (i.e. sudden reversal of capital flows) and/or exchange rate depreciation.

5. Impact of Fiscal Policy on Monetary Accounts


REAL SECTOR
GDP by Expenditures from NATIONAL ACCOUNTS (SNA, 2008, domestic currency, transactions)
Private Consumption
Final Government Consumption
Private Investment
Government Investment
Exports of Goods and Non-Factor Services
Imports of Goods and Non-Factor Services
Gross Domestic Product
GENERAL GOVERNMENT
FISCAL ACCOUNTS (GFSM 2001, domestic currency, transactions)
Revenue
Grants
Expense
Interest Payments
Operating Balance
Transactions in Non-Financial Assets
Net Lending/Borrowing
Domestic Financing (net)
Banking System
Nonbanking Sector
External Financing (net)
EXTERNAL SECTOR
BALANCE OF PAYMENTS (BPM6, US dollars, transactions)
Current Account (surplus +, deficit -)
Exports of Goods and Services
Imports of Goods and Services
Primary Income (net)
Secondary Income (net)
Official
Private
Capital Account (surplus +, deficit -)
Financial Account
Direct Investment
Portfolio Investments
Financial Derivatives a.o.
Other Investments
Net Errors and Omissions
Overall BOP Balance (surplus +, deficit -)
Change in Reserve Assets (increase +, reduction -)
MONETARY SECTOR
CENTRAL BANK (domestic currency, stocks)
Net Foreign Assets
Net Domestic Assets
Net Claims on Government
Claims on Other
Depository Corporations
Other Items (net)
Monetary Base
Currency
Banks' Reserves
OTHER DEPOSITORY CORPORATIONS (domestic currency, stocks)
Net Foreign Assets
Banks' Reserves
Net Domestic Assets
Net Claims on Government
Claims on Non-Government
Other Items (net)
Liabilities to Central Banks
Private Sector Deposits

# I. Fiscal Policy and Aggregate Demand

$$GDP = C + I + (X - M)$$

$$where\ C = C_P + C_{G,}\ and\ I = I_P + I_G$$

Fiscal policy affects C, I, X, and M.

We'll see this analytically via the "IS curve".

# II. Fiscal Policy and Inflation

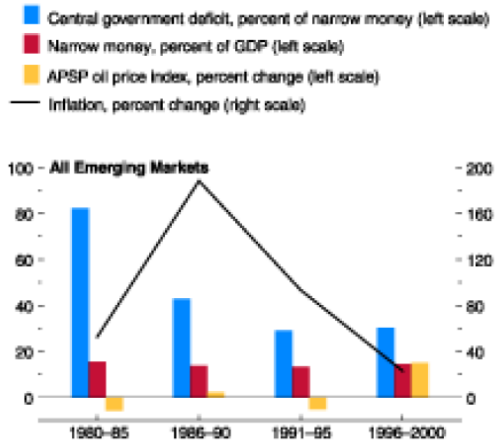
Fiscal expansions can be inflationary through different channels:

- **Demand**: by lifting the economy above potential GDP (positive output gap) thus causing inflationary pressures;
- **Supply**: via an increase in public sector wages, or administered price changes.
- **Expectations**: through expectations on inflation, interest rates, and confidence.
- **Financing** : in the long run, with direct money creation from the central bank to finance the government deficit.

# Fiscal policy and Inflation: the evidence

**Figure 4.3. Inflation and Its Determinants in Emerging Markets**
*(Simple annual averages)*

In the late 1990s, improved fiscal balances and restrained monetary growth have lowered inflation in Latin America, Europe, and the Africa/Middle East regions. Other factors, such as world inflation and oil prices, have also played a role.




Fiscal consolidation
played a central role in the disinflation process in EME countries during 1990s and 2000s (WEO 1991, Ch. 4)

Source: http://www.imf.org/external/pubs/ft/weo/2001/01/

## III. Fiscal Policy and the Current Account

$$CAB = GNDI - (C + I), where\ C + I = A\ or\ Absorption$$

$$CAB = GNDI - R + TR + R - TR - C - I$$

$$CAB = [\underbrace{Y_p - C_p - I_p}_{S_p}] + [\underbrace{R - C_g - TR - I_g}_{S_g}]$$

$$CAB = \underbrace{[S_p - I_p]}_{\text{Private Sector Gap}} + \underbrace{CAB}_{\text{Public Sector Gap = overall balance}}$$

# IV. Fiscal Policy and the Capital Account

**Fiscal sustainability matters for debt levels and the external sector.**

If fiscal policy is unsustainable, it can trigger a BOP crisis.

- Large and sudden capital outflows can lead to a sharp devaluation.
- Financing the budget externally builds up external debt, increasing risk of crisis.

# V. Impact of Fiscal Policy on Monetary Accounts

Fiscal policy determines the government's demand for bank financing (NCG). This affects total…

- domestic credit (DC);
- net domestic assets (NDA); and
- broad money (M)

Higher deficit financing will require more money expansion.

# How does fiscal stabilization work in practice?

There are two ways to do fiscal stabilization:

1. deliberate actions by governments, for instance when recessions hit government decide to cut taxes and increase public spending to reduce the fall in output.

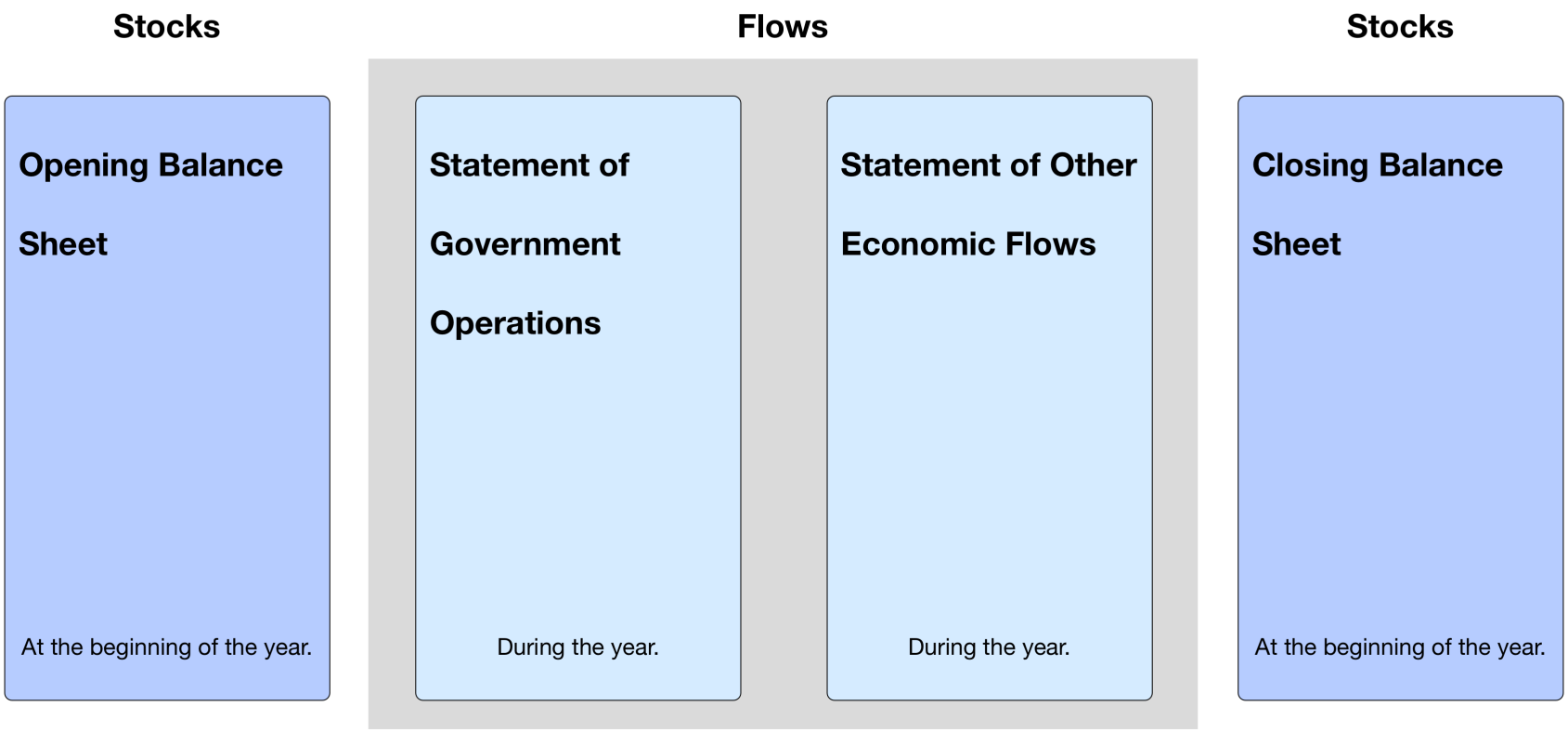
2. The second is simply to do nothing and let the so-called automatic stabilizers do their job. Example: social transfers and safety nets such as unemployment benefits or revenues on consumption

## Monitoring Developments of the Government Sector

**Two sets of statistics are mainly used to monitor developments in the government sector:**

| Statement of Government Operations (SGO) [Flows] | Balance Sheet [Stocks] |
| --- | --- |
| ▪ The SGO records the transactions of the government sector … over a period of time.<br>▪ Revenue minus Expense = Net Operating Balance (NOB) | ▪ The BS records the stock of assets and liabilities of the government sector … at a point in time.<br>▪ Assets minus liabilities = Net Worth |

## Recapping FPP1x: The Government Sector



## GFSM 2001: STATEMENT OF GOVERNMENT OPERATIONS

A. REVENUES

B. EXPENSES

A – B = NET OPERATING BALANCE (NOB)

C. NET ACQUISITION OF NONFINANCIAL ASSETS (NANA)

D. NET LENDING (+)/BORROWING = NOB +NANA

# Revenues: Forecasting

**Approaches:**

- Effective Tax Rates
- Marginal tax Rates
- Buoyancy

# 1. Tax Approach: Effective Tax Rate (ETR)

Statutory tax rate = legal tax rate schedule

Effective tax rate = actual tax revenue / tax base (proxy or legal)

**Forecast:**

1. compute the ETR ;
2. Forecast Tax revenue by using ETR and tax base forecast

$$ETR : Tax_t = Tax base_t * (ETR_t) / 100$$

## Suggested Proxy Bases for Tax Revenue

| Taxes | Suggested Proxy Tax Base |
|---|---|
| Tax on net income and profits | |
| Corporate | Profits derived from national accounts, or nominal GDP |
| Individual | Wages and salaries, or Nominal GDP |
| Taxes on Good and Services | Private consumption at current prices, GDP |
| Excise duties | Private consumption at current prices, GDP |
| Taxes on international trade | Value and volume of imports in local currency |

# 2. Tax Approach: Marginal Tax Rate (MTR)

Statutory tax rate = legal tax rate schedule

Marginal tax rate = change in actual tax revenue / change in tax base (proxy or legal)

**Forecast:**

1. compute the MTR;
2. Forecast Tax revenue by using MTR and the change tax base forecast

$$\Delta \, in \, Tax \, Revenue = Marginal \, Tax \, Rate * \Delta \, in \, Proxy \, Tax \, Base$$

# Tax Approach: Tax Elasticity (E)

$$Elasticity = \frac{\Delta T / T}{\Delta GDP / GDP}$$

**Forecast:**

1. Compute the elasticity;
2. Forecast tax revenue by using elasticity and the % change in the tax base

$$Tax_t = Tax_{t-1} * (1 + elasticity * \Delta\%Tax\ base_t) / 100$$

# Tax Approach: Tax Buoyancy (TB)

$$Buoyancy = \frac{\Delta T / T}{\Delta GDP / GDP}$$

**Forecast:**

1. Compute the buoyancy;
2. Forecast tax revenue by using Buoyancy and the % change in the tax base

$$Tax_t = Tax_{t-1} * (1 + (Buoyancy\,rate * \Delta\%Tax\,base_t) / 100)$$

# Tax Approach: Tax Elasticity/Buoyancy

**Sources of estimates for elasticities:**

- Historical experience, judgmental analysis
- Econometric analysis,

**In general, elasticities tend to be:**

- slightly less than 1 for Taxes on consumption
- close to 1 under proportional or ad valorem (VAT)
- close to or >1 if progressive taxes (Income tax)
- Land/property or excise: usually low <<1 (very inelastic demand)
- Elasticities can decline in presence of high inflation

# 3. Tax Approach: Tax Elasticity/Buoyancy

**Elasticity:**

- Ignores tax code changes;
- Assumes steady administrative/compliance trends;
- Typically, this method simply measures actual collections, not receivables; and
- May overestimate revenue.

**Buoyancy**

- Same as elasticity but includes any change in the tax code

# Revenues: Evaluation of Tax Collection

- Buoyancy: Growth in tax collection T relative to GDP growth (or tax base).

$$\beta = \%\triangle T / \triangle GDP$$

- Elasticity: Growth in tax collection adjusted for tax measures (AT) relative to tax base (TB).

$$\varepsilon = \%\triangle AT / \%\triangle TB$$

# Revenues: Elasticity-Buoyancy

**Elasticity-Buoyancy depends on:**

- Tax structure
- Tax administration and compliance

**If $\varepsilon > 1$:**

- Tax system is elastic
- Revenues grow faster than the tax base

# Revenues: Evaluating Elasticity-Buoyancy

**Tax system likely to be elastic with respect to GDP when:**

- Taxes levied on growing sectors;
- Tax rates are progressive and ad valorem and evasion is not a problem; and
- Taxes are collected promptly.

# Forecasting Other Revenues and Grants

**Nontax Revenue:**

- Diverse items
- Central Bank profits
- Other categories
- Forecast: % of GDP, Trend growth

**Grants:**

- Official transfers from BOP
- Forecast: extrapolate past trends

# Categories of Expenditure

**Discretionary:**

- Depend on government policies
- Can be changed in the short term

**Nondiscretionary:**

- Outside the control of the government
- Governed by previous decisions, demographic factors, and the economic situation

# Wage Bill

**The wage bill depends upon:**

- Government policy
- Size of civil service
- Average salary
- Wage developments in the private sector
- Changes in the cost of living

# Subsidies and Transfers

**Subsidies and transfers depend upon:**

- Government policy
- Consumer prices of basic goods and services
- Producer prices of main agricultural goods
- Volume of goods and services demanded or produced
- Growth rate of number of beneficiaries

# Other Goods and Services

**Expenditure on goods and services depends upon:**

- Government policy
- Size of civil service
- Inflation

## Non-Interest Expenses

**Forecast:** $EXP_t = EXP_{t-1} *(1+ \Delta P/100) *(1+ \Delta Q/100)$

| Category | ΔP | ΔQ |
|---|---|---|
| ▪ Wages<br>▪ Goods and Services<br>▪ Pensions<br>▪ Subsidies and Transfers<br>▪ Net Acquisition of Non-Financial Assets (NANA) | ▪ CPI, policy<br>▪ PGDP, policy<br>▪ CPI, policy<br>▪ CPI, policy | ▪ Policy<br>▪ GDP, policy<br>▪ Demographics<br>▪ Economic activity |

# Interest Payments – 1

**Interest payments depend upon:**

- Stock of public debt
- Composition of debt
- Interest rate
- Exchange rate

# Interest Payments – 2

Interest Payments on Domestic Debt:

$$INT = i_t /100^* \text{ average } (D_t , D_{t-1})$$

Interest Payments on Foreign Debt:

$$INT^{\$} = i^{\$}_t/100^*\text{average}(D^{\$}_{t-1}, D^{\$}_t)^* ER_t$$

# Interest Payments – 3

**Simultaneity problem:**

- Know current level of debt
- Need also future debt levels, which depend on future borrowing, which depends on interest costs

**Iterative Approach:**

- Make an initial estimate of interest costs and of domestic net borrowing
- Use this information to calculate overall balance and to re-evaluate fiscal stance
- Recalculate estimates of interest costs
- Repeat as necessary

# Net Acquisition of Non-Financial Assets (NANA)

**Capital expenditures depend upon:**

- Government policy (real growth of public investment)
- External financing
- Current projects and commitments
- Exchange rate
- Investment deflator

$$\mathbf{EXP_t = EXP_{t-1} *(1+ \Delta P/100) *(1+ \Delta Q/100)}$$

**Where $\Delta P$ = I deflator; $\Delta Q$ = real I growth**

## GFSM 2001: STATEMENT OF GOVERNMENT OPERATIONS

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# Sources of Financing

Derive financing as a residual from forecasts of net operating balance and NANA

Assess the breakdown of financing…

- External
- Domestic (Bank vs. nonbank)

# Types of Budget Financing

**Foreign financing:**

- Borrowing generates external debt
- Foreign exchange reserves

**Domestic financing:**

- Central bank
- Nonbank
- Commercial bank

**Arrears:**

- Undermines government credibility

# Budget Finance Forecasting

**Baseline scenario**

Identify scheduled disbursements and amortization of already contracted debt.

Determine the additional financing requirement and its viability ➡ financing gap?

- Domestic sources (bank, nonbank)
- Foreign (multilateral, bilateral, capital markets)

**Program scenario**

➡ Viable and sustainable financing ➡ Desired fiscal balance