Introduction to the Fiscal Sector Accounts in the Thailand FPP Framework

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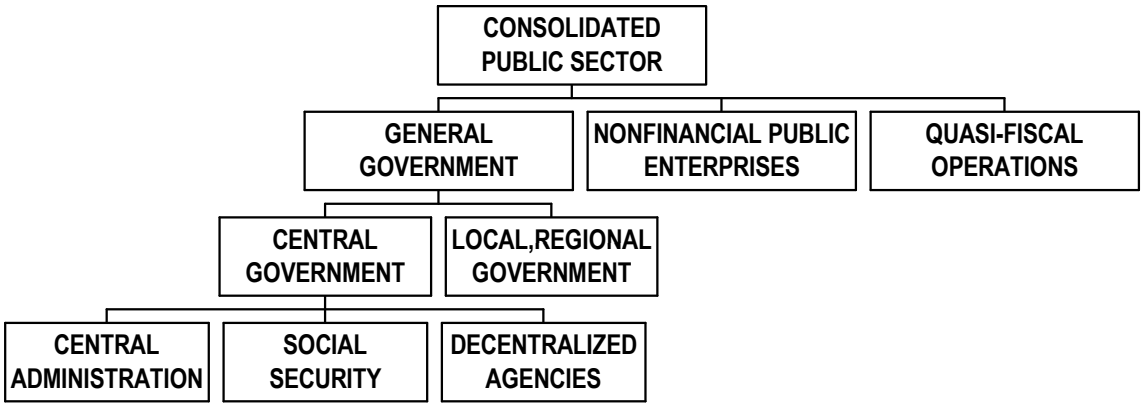
Lecture Outline

- Definition and measurement of public sector
- Basic structure of fiscal accounts
- Measures and financing of fiscal deficit
- General considerations in forecasting
- Forecasting revenue
- The concepts of elasticity and buoyancy
- Forecasting expenditure
- Forecasting budget financing

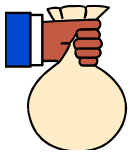
Public Sector



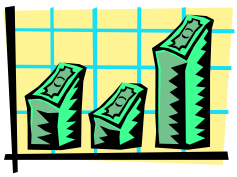
Measuring government operations

- Cash Basis versus accrual basis
  - In general on cash basis
  - A government with a cash deficit smaller than an accrual one is typically behind on its interest and other payment obligations

Basic Elements of Fiscal Accounts

Revenues 

Expenditures



Financing 

Standard Government (Fiscal) Account

Revenues and Grants
- Taxes
- Non tax
- Grants

Expenditures and Net Lending
- Current
- Capital
- Net Lending

Overall Balance

Financing (below the line)
- Foreign (net)
- Domestic
  - Non bank
  - Bank

Revenues and Grants

- **Revenues**: all non repayable receipts (i.e. receipts which do not give rise to an obligation of repayment), except grants
  - **Tax revenues**: compulsory and unrequited receipts collected by the government for public purposes.
  - **Non tax revenues:** e.g., operating surpluses of public enterprises; administrative fees; property income.

- **Grants:** unrequited receipts from other governments or international institutions.

Expenditures - 1

- **Current:** wages and salaries; goods and services; interests payments; subsidies and current transfers

- **Capital**: acquisition of fixed assets (government investment); capital transfers (transfers for the purpose of acquiring a capital asset)

- **Net Lending** (loans minus repayments): government lending to achieve public policy purposes (e.g., subsidized loans to students, emergency loans) .

Expenditures - 2

- Note **functional** vs. **economic** classification of expenditures
- Economic categories:
  - Wages and salaries
  - Goods and services
  - Subsidies (implicit and explicit)
  - Interest
  - Capital expenditures
- Functional categories:
  - Health, housing, economic services, administration, defense, etc.

Conventional Fiscal Deficit

- Overall fiscal deficit
  - Total revenues and grants

    minus

  - total expenditures and net lending

Other measures of fiscal deficit

- Public sector borrowing requirement
- Primary fiscal deficit - exclude interest payments
  - measure of discretionary spending - important in assessing sustainability of deficit

Modes of Financing

- Domestic borrowing
  - Central bank (monetization)
  - Bank financing
  - Non-bank financing
- Foreign borrowing

Effects of Fiscal Deficits

- Foreign borrowing --> external debt
- Monetary financing --> inflation
- Domestic Non bank borrowing-->crowding out, higher interest rates, domestic debt
- Running down reserves-->exchange rate crisis
- Arrears-->imbalances, slower growth, credibility problems

General Considerations for Fiscal Forecasting

- Fiscal forecasting must be based on a consistent set of macroeconomic assumptions – e.g., for GDP, BOP
- Budget components affect and are affected by changes in the macroeconomic situation – for example, changes in real growth, inflation, and the exchange rate
- Revenues typically reflect the level of economic activity, while expenditures depend more on policymakers' discretion
- Achieving consistency between the fiscal accounts and the macroeconomic environment requires an iterative process of adjustment

A Preliminary Consideration: At What Level of Disaggregation to Forecast?

- Forecasters must decide on the level of aggregation to forecast
- Forecasting at too aggregate a level (e.g., total revenue, total expenditure) may be inaccurate and frustrate identifying budget problems
- Forecasting at too disaggregated a level may require data that are unavailable
- General approach: pick most disaggregated level data will allow

Ways to Forecast Revenues

- Model-based approach (not used in this course)
- Effective tax rate approach
- Tax elasticity (buoyancy) approach

Effective Tax Rate Approach

- Uses observed revenue data to calculate the effective tax rate of a particular tax
- Approach:
  - Find the effective tax rate = Tax revenues/tax base
  - Forecast the tax base (based on appropriate proxy base)
  - Forecast revenue = forecast of tax base * effective tax rate
- Assumes unchanged a) tax base structure, b) tax system, and c) compliance ratio

Concept of a Proxy Tax Base

- The statutory tax base is usually too complex to be useful for economic analysis and forecasting
- Need an alternative or proxy tax base for forecasting purposes. Examples (see next slide):
  - GDP may be a proxy for personal income, assuming that household income grows at same rate as GDP
  - Private consumption could serve as a proxy for the base of a value added or sales tax
  - Imports may be a good proxy for imports subject to tax

Examples of Proxy Tax Bases

Tax	**Proxy Tax Base**
Individual Income Tax	Personal Income or nominal GDP
Corporate Income Tax	Corp. Profits or nominal GDP
VAT, Excise taxes	Nominal Private Consumption
Import Duties	Imports
Export Duties	Exports
Other Taxes	Nominal GDP (at Factor Prices)

Effective Tax Rate Approach: An Example Using Import Tariffs

- Suppose that data show the following:

	1996	1997	1998	1999	2000
Import duties	100	120	140	150	160
Imports, c.i.f.	1000	1200	1400	1500	1600

  - Effective tax rate = tax/tax base = 100/1000 = 10%, even if statutory rates are higher (e.g., 20%)
  - If forecast imports, c.i.f. for 2001 are 1750, import duties would be forecast at 10%*1750 = 175

Tax Elasticity Approach

- The tax elasticity (ε) is defined as the:
  - change in revenues relative to change in tax base
  - assumes an unchanged tax system!

- Elasticity = $\varepsilon = (\Delta R/R) / (\Delta B/B)$
  - R = tax revenues (assuming unchanged tax system)
  - B = tax base

- In practice, elasticity can be calculated as
  - ε = (Pct. chg in revenues) / (Pct. chg. in tax base)

Tax Elasticity Approach (cont.)

- **Elasticity depends on**:
  - Tax structure
    - If tax structure is progressive, compliance is high, and the tax base applies without ceilings, $\varepsilon > 1$ (prog. income tax)
    - If tax structure is regressive, $\varepsilon < 1$ (many excise taxes)
  - Tax administration and compliance
- If $\varepsilon > 1$
  - Tax system is <u>elastic</u>
  - Revenues grow faster than the tax base
- If $\varepsilon < 1$
  - Tax system is <u>inelastic</u>,
  - Revenues grow slower than the tax base

The Concept of Buoyancy

- When the tax system *has* changed over the period and there is *no good way* to estimate the revenue effect of the changes, "b" becomes a buoyancy
- I.e. the percentage change in *actual* revenues (AR) divided by the percentage change in the tax base:
- Buoyancy = $(\Delta AR/AR) / (\Delta B/B)$
- Rearranging
- $(\% \Delta AR) = \text{Buoyancy} * (\% \Delta B)$
- Change in tax revenues = buoyancy times change in tax base

Methods if Tax System Has Changed

- Use buoyancy but apply results *conservatively*
- For major items, such as taxes on personal and corporate income, indirect taxes on domestic goods and services, imports, could also use the effective tax rate method
- For smaller items (e.g., taxes on property, non-tax revenue), look at past ratios to GDP

Forecasting Expenditures

- Two main categories of expenditures:
  - Discretionary
    - Depend on government policies
    - Despite the title, many discretionary expenditures reflect macroeconomic developments: wages and salaries, purchases of goods and services, subsidies and transfers
    - Where data are not available, a first approximation may involve maintaining past ratios to GDP
  - Non-discretionary
    - Main example: interest payments

Discretionary Expenditures

- Wages and salaries
  - Number of employees reflects program structure and institutional reforms in government sector
  - Wage rates can be forecast using CPI
- Goods and services
  - Volumes may vary with real GDP
  - Prices: choose CPI or GDP deflator
- Subsidies and transfers
  - Forecast number of beneficiaries and avg. payment Where not available, consider maintaining past ratio of outlays to GDP
- Capital expenditures
  - Consider ongoing projects, effect of inflation

Forecasting Financing

- Financing is a residual -- derived from forecasts of fiscal revenues and expenditures
- Should assess the breakdown of financing
  - Domestic
    - Bank versus non-bank
  - External
- Check for consistency with external and monetary accounts

Domestic Financing

- Bank Financing
  - Central Bank and Commercial Banks
    - Goal is to limit borrowing from Central Bank
  - Function of
    - Interest rates, alternative lending opportunities
- Non-Bank Financing
  - Function of
    - Interest rates
    - Overall demand for domestic assets by private sector minimize crowding out private investment)
    - Market confidence (in government issues)