Introduction to the External Sector Accounts in the Thailand FPP Framework

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Lecture outline

- BOP – basic concepts and accounts

- Importance of BOP in financial program

- Forecasting BOP variables

  – Econometrics or elasticity approach provide a benchmark forecast

  – Use latest available data to make judgements to refine forecast

  – For less important variables, use information on related variables to make intelligent guesses

Balance of Payments: Analytical Presentation

1. Current Account	**CAB**
A. Goods and Services	**X – M**
Goods (Trade account)	
Services (non-factor)	
B. Income	Y_f
Compensation of employees	
Investment income	
O/w: interest	
C. Current Transfers	TR_f
2. Capital and Financial Account	ΔFI
A. Capital Account	
B. Financial Account	
Direct Investment (net)	
Portfolio investment (net)	
Other investments (net)	
3. Overall Balance	**CAB +ΔFI**
4. Reserves	ΔRES

$$CAB + \Delta FI + \Delta RES = 0$$

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Key BOP concepts

- Trade Balance

  $\rightarrow$ difference between exports and imports of goods

- Current account Balance (CAB)

  $\rightarrow CAB = (X\text{-}M) + Y_F + TR_F$

- Overall Balance

  $\rightarrow$ CAB + net capital and financial transactions (ΔFI)

<u>Below the line</u>: changes in net foreign assets of the monetary authorities (ΔRES).

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One Basic Accounting Relationship

Absorption, income and the current account balance

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

$GNDI = GDP + Y_F + TR_F = A+(X-M) + Y_F + TR_F$

But Current account balance (CAB) = X- M+ Y_F + TR_F

Therefore, GNDI = A + CAB

$$\Rightarrow \textbf{GNDI - A = CAB}$$

Saving, investment and the current account

Since GNDI - C - I = CAB

$$\Rightarrow \textbf{S - I = CAB} = \textbf{\textcolor{red}{Foreign saving}}$$

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Importance of BOP in Financial Programming

- Is the current account deficit sustainable - is external indebtedness rising too much; or can country continue without a drastic change in policies?

- If CAB deficit is unsustainable, may need to cut expenditure (or increase saving) - why?

$$CAB = GNDI - A$$

$$CAB = S - I$$

- Otherwise, country may get loaded with unsustainable financial liabilities and/or declining foreign exchange reserves

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BOP - how and what to forecast

- Look at the major parts of the balance of payments and focus particularly on the largest components
- Separate items for which we have a good theory to rely on, from those for which trends or common sense is required

Forecasting the Current Account

CAB = X - M + other services + transfers + NFI

- X, M and other services: use economic theory
- Transfers: no theory to rely on, but use past trends, correlation with other variables, etc.; use other information - any ongoing aid program?
- Net Factor Income:Use data on external debt for interest payments; and trends, etc. to look at compensation of employees

Forecasting the current account

- Forecasting exports and imports imply forecasting volume and prices of each separately

Value of X at time t =

(Value of X at time t-1)*

(1+% change in volume of X)* (1+ % change in price of X)

as decimal   as decimal

- Volume can be estimated using economic theory
- For prices - small country assumption; use historical data, commodity price forecasts and judgement on prices

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Forecasting export volumes

- XR = f(YR, ER * PD/PX, CAP, EXDD), where
- XR = volume of merchandise exports
- YR = foreign demand (e.g. by foreign real GDP)
- ER = nominal exchange rate (US$/THB)
- PD = domestic prices (e.g. GDP deflator)
- PX = average level of prices of exports
- CAP = productive capacity in export sector
- EXDD = excess demand in domestic country

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Real Exchange Rate (RER)

- RER = ER * Domestic prices/Foreign prices
  where
  ER is units of foreign currency/unit of local currency

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Effects of devaluation

- Exports likely to rise, imports likely to decline leading to lower current account deficit
- Consumption and investment likely to decline
- Interest payments on external debt to rise - possibly higher fiscal deficit for government,
- Net importers and high external debt enterprises to lose (although value of imports in domestic currency rises), net exporters benefit, consequences for financial sector and bank NPLs
- Higher inflation and nominal interest rates

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Price elasticity of exports

- Measures the percentage change in export volume (XR) associated with a 1% change in the relative price ratio $(ER \times PD / PX)$ or the RER

$$\varepsilon_P = \frac{\%\Delta \ XR}{\%\Delta \ (ER \times PD/PX)}$$

Supply elasticity of exports

- Supply elasticity of export volumes (ε_Y)

$$= \frac{\text{percentage change in export volume}}{\text{percentage change in supply}}$$

- If supply elasticity is 2, and supply is expected to rise by 4%, then export volumes are expected to rise by 8%, ceteris paribus
- Typical supply elasticities for goods are lower (e.g. close to 1)

Export Forecast using Elasticities

Projected change in export volume:

$$\%\Delta XR = \{\varepsilon_P \times \%\Delta(ER.PD/PX)\} + \{\varepsilon_Y \times \% \Delta YR\}$$

RELATIVE PRICE ELASTICITY:

	Typical estimate
Short term	
Commodities	-0.1 to -0.7
Manufactures	-0.5 to -1.0
Long term	-0.5 to -2.0

SUPPLY ELASTICITY:

Typical estimate
1.0 to 2.0

Forecasting Export Values

- Forecast export price growth ($\%\Delta PX$)

- Forecast export volume growth ($\% \Delta XR$)
  – Use estimated elasticities to get $\%\Delta XR$

- Compute export value
  – $X\_D = X\_D_{2001} \times (1+\%\Delta PX) \times (1+\% \Delta XR)$

Forecasting import volume

- MR = f(YR, ER* PD/PM, EXDD), where
- MR = volume of imports
- YR = aggregate income (real GDP)
- ER = nominal exchange rate (US$/THB)
- PD = domestic price level (GDP deflator)
- PM = average price level of imports
- EXDD = excess demand

Import Forecast using Elasticities

Projected change in import volume:

$$\%\Delta MR = \{\eta_P \times \%\Delta(ER \times PD/PM)\} + \{\eta_Y \times \%\Delta YD\}$$

RELATIVE PRICE ELASTICITY % change in import volume associated with 1% change in relative price ratio		INCOME ELASTICITY: % change in import volume associated with 1% change in domestic income
	Typical estimate	
ST (1 year)	0.1 to 0.7	Typical estimate
LT (>1 year)	0.5 to 1.5	1.0 to 2.0

Other considerations

- Look at commodity composition - if high oil importer or exporter, then may need to forecast these separately

- A large devaluation may not translate into equally high export prices, as exporters might be under pressure form clients to cut prices

- Look at import intensity of investment and consumption expenditures

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Forecasting volume of travel receipts and payments

- Travel receipts (similar to exports) depend on RER and on real income in foreign countries from which majority of tourists come

- Travel payments depend on RER and on real domestic income

- For tourists from Western European countries income, as well as price, elasticity for travel expenditures estimated around 2 to 3.

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Transfer payments

- No explicit economic theory
- Look at recent trends and try and associate with other economic variables such as global GDP, domestic GDP, exports, real exchange rate, etc.
- Consider average growth rates and ratios to associated variables mentioned above

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Forecasting financial flows - 1

- Extremely difficult to model
- Depend on relative risk-adjusted rates of returns
- Expectations are key to measuring risk-adjusted returns
- Since expectations can change rapidly, and there is no reliable way to measure them, very difficult to forecast

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Forecasting financial flows - 2

- Nonetheless, look at the following:
- Real exchange rate - overvaluation may imply declining capital inflows
- RER of competing nations
- Are your competitors capturing your market share?

Forecasting financial flows - 3

- FDI - recent levels, profitability of specific sectors, scope for FDI in new sectors; profitability of large investors in their home countries
- Portfolio inflows and lending - growth rate of profits and trends in stock market prices - GDP growth differential may be irrelevant
- Market conditions in investor countries; interest rate differentials for borrowing

Errors and omissions

- Conceptually should be forecast as zero.
- However, this may involve a substantial adjustment in other items; may be best to keep at previous year's level

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