Balance of Payments: Accounts and Analysis

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1. Balance of payments **accounts**
   - How BOP accounts are put together
   - Definitions, conventions, presentation
   - Links to other macroeconomic accounts

2. Balance of payments **analysis**
   - Economics of exports, imports, capital flows, exchange rates, etc.

3. Balance of payments **projections**

4. International investment position
   - Paul Mahoney, Director, JAI
Balance of payments accounts

Accounting system for macroeconomic analysis in four parts

1. Balance of payments
2. National income accounts
3. Fiscal accounts
4. Monetary accounts

First look at balance of payments accounts *per se*, and then look at linkages in a separate lecture
Definition of the balance of payments

The balance of payments is a statistical statement which systematically summarizes, for a specific period of time, the economic transactions of an economy with the rest of the world.
Introduction

The information on the economic transactions and financial flows between a country and the rest of the world, which are systematically summarized in its balance of payments, is necessary to analyze the external position of the country.
Introduction

The mandate of the IMF is to assess the external position of its member countries through surveillance (Article IV Consultations) as well as in the context of the use of Fund resources (program design and review).
Introduction

In a world in which national economies are more and more closely integrated, owing to both trade and financial flows, policy-makers and economists need to have balance of payments statistics which are recent, reliable, and exhaustive, compiled on the basis of a commonly accepted methodology.
Introduction

One of the roles of the IMF is to elaborate and standardize the methods needed to establish balance of payments statistics.

Since 1948, the IMF has published a *Balance of Payments Manual* laying out the main principles behind the compilation of balance of payments statistics.

Introduction

In this session, we discuss the balance of payments accounting framework as well as the main principles for the analysis of the balance of payments based on the methodology detailed in the *Balance of Payments Manual (6th ed., 2008)*
BALANCE OF PAYMENTS CONVENTIONS: Concept of Residence

- The balance of payments records transactions between residents and nonresidents.
- The notion of residence is determined by the center of economic interest of units rather than their nationality.
  - E.g., IRANIAN in AFGHANISTAN.
Concept of Residence

Individuals

- Residents of a country if the length of their stay is longer than 12 months
  - But not students and patients

Non-residents

- Visitors (tourists, plane or boat crews, seasonal workers, etc.), trans-borders workers (residents in the countries where they live), diplomats, members of the army, foreign students (regardless of the length of their stay)
Enterprises

Residents of the country where they realize their activity, given the presence of at least an establishment in the country

- E.g., branches and subsidiaries of foreign enterprises are considered to be residents of the host country
- Range of indicators, no definite rules
Public entities

Embassies, consulates, military bases, government entities are counted as residents of their country of origin
Double entry accounting

- Every transaction must result in two entries of equal amounts, one on the credit side and one on the debit side.

- Typically, a positive sign (+) is associated with an amount recorded on the credit side and a negative sign (-) is associated with an entry on the debit side.
By convention, some transactions are recorded as **credit** items (+) and others as **debit** items (-)

- Exports of goods and services  Credit (+)
- Imports of goods and services  Debit (-)
- Income and transfers received  Credit (+)
- Income and transfers paid out  Debit (-)
- Increase in foreign liabilities  Credit (+)
- Increase in foreign assets  Debit (-)
BALANCE OF PAYMENTS CONVENTIONS: Accounting principles

- A reduction in foreign liabilities is recorded on the debit side, with a negative sign (-)
- A reduction in foreign assets is recorded on the credit side, with a positive sign (+)

Due to this convention,

- An increase in foreign reserves is recorded on the debit side, i.e., with a negative sign (-)
- A reduction in reserves is recorded on the credit side, i.e., with a positive sign (+)
  - We “pay” for increased reserves like we pay for imports
  - Likewise, a decrease in reserves generates “receipts”
Unrequited transfers

- Transactions that correspond to a single flow are recorded as current transfers or as capital transfers resulting in a symmetrical entry under imports (transfers received) or under exports (transfers paid)

Example: the EU provides a country with a gift of computers (food aid)

- The computers are recorded as imports and capital transfers (current transfers)
Transactions in two major categories

1. **Real transactions**
   - Goods, services, and income
     - Current account of the BOP
     - Involve flows

2. **Financial transactions**
   - Reflect changes in foreign assets and liabilities
     - Capital and financial account of the BOP
     - Involve changes in stocks
Errors and omissions

- Double-entry recording
  - The sum of credit entries must equal the sum of debit entries
  - The sum of all transactions is zero

- Practical problems lead to errors and omissions
  - Diversity of data sources
  - Missing data: e.g., financial transactions outside banking system (informal sector)
  - Under- or overvaluation of transactions
    - Smuggling
The recording period for balance of payments flows is determined by the frequency of data collection:

- Annual
- Quarterly
- Monthly

Transactions are recorded on the date of legal change of ownership:

- Accrual basis, not cash basis
Transactions must be valued at market price, reflecting “the terms of an exchange between a willing buyer and a willing seller”

The direct exchange of one item of property for another (barter) is valued at a fictitious price used to value traded goods.
Exports and imports must be recorded "free-on-board" (f.o.b.)

- Cost of insurance and transport beyond the port of departure is not included in the value of the goods; they are recorded under services.

If exports and imports are reported in customs data on a c.i.f. basis, i.e., including the cost of insurance and transports, then the cost of insurance and transport needs to be deducted before recording in the balance of payments (e.g., on the basis of average costs and percentage).
Transactions recorded in the balance of payments must be expressed in a common unit of account (e.g., home currency or USD).

- National currency is used to compare BOP to other developments in the domestic economy.

- Dollar, SDR, or other major stable currencies are used for cross-country comparisons, as a precaution in the event of rapid depreciation of the national currency which would make it difficult to interpret the balance of payments.
In order to translate into the chosen unit of account the data which are expressed in the unit of transaction, the exchange rate at the time of the transaction should be used.

However, to translate the balance of payments from a unit of account to another (e.g., from US$ to national currency) we use the average exchange rate in the period.

Stocks vs. flows.
Presentations of the balance of payments

- Two views of the balance of payments, that is:
  - Two ways to present the balance of payments
    - Standard presentation
      - The accountant’s or statistician’s view
        - Records gross amounts, credit and debit
    - Analytical presentation
      - The economist’s view
        - Records some item on net basis, credit minus debit
Standard Presentation of the balance of payments

- From the statistician’s or accountant’s point of view, the structure of the balance of payments reflects the recording based on accounting principles
  - **Standard presentation** in which the amounts recorded (credit and debit) are gross amounts
analytical Presentation of the balance of payments

❖ From the economist's point of view, a different presentation facilitates the use of the balance of payments for analytical purposes

❖ Analytical presentation
  ○ Established on the basis of the standard presentation
  ○ For certain groups of items the accounting balance is used, that is, the difference between the amounts on the credit and debit sides
    • E.g., net capital inflow = gross inflow less gross outflow
Standard Presentation of the balance of payments

- **Current account**
  - Transactions related to goods, services, income, and current transfers between residents and non-residents
    - Transactions related to goods are those relative to the movements of merchandise
      - Exports and imports of goods
    - Transactions relative to services include different categories, e.g., transports, travel, etc.
      - Exports and imports of services
Standard Presentation of the balance of payments

Transactions relative to income are related to the remuneration of labor, capital, and land

- E.g., compensation paid to trans-border workers, interest payments on external debt, etc.

Transfers are unrequited transactions

- Public and private
- In cash or in kind
- E.g., foreign aid
analytical Presentation of the balance of payments

- Since the sums of credits and debits offset one another, how can there be an "imbalance" in the external accounts?

- Advantage of analytical presentation
  - It shows significant balances that are useful for economic analysis and shows a possible external imbalance
analytical Presentation of the balance of payments

- The balance of payments can be in **surplus** or in **deficit** once we distinguish transactions into two subgroups and we draw a **line** between these two subgroups.

- When transactions **above the line** sum up to a deficit, transactions **below the line** will sum up to a corresponding surplus, and vice versa.
analytical Presentation of the balance of payments

- Trade balance
  - Difference between exports and imports of goods

- Current account balance
  - Difference between amounts recorded on the credit and debit side of goods, services, income, and current transfers

- Overall balance
  - Current account balance plus capital and financial operations account balance considered not to be “financing” items
### External transactions

<table>
<thead>
<tr>
<th></th>
<th>Goods</th>
<th>Services</th>
<th>Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exports</strong></td>
<td>$X^g$</td>
<td>$X^s$</td>
<td>$F^x$</td>
</tr>
<tr>
<td><strong>Imports</strong></td>
<td>$Z^g$</td>
<td>$Z^s$</td>
<td>$F^z$</td>
</tr>
</tbody>
</table>

**Examples**

- **Real transactions**
- **Financial transactions**
Recording external transactions

Balance of payments

- BOP = X_g + X_s + F_x - Z_g - Z_s - F_z
- = X - Z + F
- = current account + capital account

Here
- X = X_g + X_s  Exports of good and services
- Z = Z_g + Z_s  Imports of good and services
- F = F_x - F_z  Net exports of capital =

Net capital inflow

The term “capital account” is
1. Old language (BPM4)
2. Shorthand for new language (BPM5)
Recording external transactions

Balance of payments

- \[ BOP = X_g + X_s + F^x - Z_g - Z_s - F^z \]
- \[ = X - Z + F \]
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Recording external transactions

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Recording external transactions

Balance of payments

- \( BOP = X^g + X^s + F^x - Z^g - Z^s - F^z \)
- \( = X - Z + F \)
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Here
- \( X = X^g + X^s \)  Exports of good and services
- \( Z = Z^g + Z^s \)  Imports of good and services
- \( F = F^x - F^z \)  Net exports of capital = Net capital inflow
Balance of payments and reserves

Again

- $\text{BOP} = X - Z + F = \Delta R$

where

- $R = \text{reserves}$

Note:

- $X, Z, \text{ and } F \text{ are flows}$
- $R \text{ is a stock, } \Delta R \text{ is a flow}$

$\Delta R = R - R_{-1}$
Balance of payments and reserves

- \( \text{BOP} = X - Z + F = \Delta R \)

where \( \Delta R = R - R_{-1} \)

- Implications

In practice...
From trade balance to current account

- **Trade balance**
  - \( TB = X_g + X_{nfs} - Z_g - Z_{nfs} \)
    - \( X_{nfs} = X_s - X_{fs} \) = exports of nonfactor services
    - \( Z_{nfs} = Z_s - Z_{fs} \) = imports of nonfactor services

- **Balance of goods and services**
  - \( GSB = TB + Y_f \)
    - \( Y_f = X_{fs} - Z_{fs} \) = net factor income

- **Current account balance**
  - \( CAB = GSB + TR = TB + Y_f + TR \)
    - \( TR = \) net unrequited transfers from abroad
Importance of net factor income

Net factor income from labor
- Compensation of domestic guest workers abroad (e.g., Pakistanis in the Gulf) minus that of foreign workers at home

Net factor income from capital
- Interest receipts from domestic assets held abroad minus interest payments on foreign loans (e.g., Argentina)
- Includes also profits and dividends

Transfers are unrequited transactions
- Public or private, disbursed in cash or in kind (e.g., foreign aid)
Capital and financial account

Two parts

1. **Capital account** (esp., capital transfers)
2. **Financial account**
   1. **Direct investment**
      - Involves influence of foreign owners
   2. **Portfolio investment**
      - Includes long-term foreign borrowing
      - Does not involve influence of foreign owners
   3. **Other investment**
      - Includes short-term borrowing
   4. **Errors and omissions**
      - Statistical discrepancy

*Is the world’s BOP = 0?!*
Foreign direct investment (FDI)

Investments that a non-resident entity realizes with the aim of acquiring a durable interest in a resident enterprise (long-term relationship and influence on the enterprise’s management)

The investor holds at least 10% of the shares or the voting rights in the enterprise
Capital and financial account

- Portfolio investments
  - Equity participation instruments and debt instruments, money market instruments
    - Financial derivatives: separate functional category
- Other investments
  - Trade credits, short-term and long-term loans, including loans from World Bank
  - Typically recorded on the basis of the instrument or on the basis of their maturity (short term vs. long term)
Capital and financial account

- Reserve assets
  - Financing items below the line in the balance of payments
  - Transactions involving the assets of which monetary authorities consider that they dispose in order to finance the balance of payments, including IMF loans
    - E.g., to maintain adequate foreign exchange reserves
    - Most successful IMF loans are never “used”
Overall balance of payments

Four main items below the line

1. Gold
2. SDRs
3. Reserve position in IMF
4. Foreign exchange

✓ **Three-month Rule**: Gross foreign reserve holdings should suffice to cover three months of imports of goods and services

✓ **Giudotti-Greenspan Rule**: Central Bank foreign reserves should not decrease below short-term foreign commercial bank liabilities
Transactions with IMF

- Changes in reserve position in IMF
  - Recorded in financial operations account under reserve assets, below the line

- Use of IMF resources
  - Purchase of foreign currency from IMF leads to
    - Increase in foreign assets of the Central Bank (-, negative sign)
    - Financial liability to the IMF (+, positive sign)
    - Gross reserves go up, net reserves stay put

- Use of SDRs
  - Recorded in financial account as reserve asset flows
Overview of the BOP

Current account

A. Goods
   Exports
   Imports
   Trade balance \( X - Z \)

B. Services
   Transport
   Travel

C. Income
   Compensation of workers
   Investment income

D. Current transfers
   General government
   Other sectors

Current transactions balance
\[ = (X-Z) + Y + TR_F \]

Capital and financial operations account

A. Capital
   Capital transfers
   Purchases/sales of nonproduced nonfinancial assets

B. Financial operations
   Direct investment \( \{ \text{FDI} \) \)
   Portfolio investment \( \{ \text{NFL} \) \)
   Other investment

C. Errors and omissions

Overall Balance

D. Net foreign assets

E. Exceptional financing

\( X - Z \)
\( Y \)
\( F \)
\( TR_F \)
\( FDI \)
\( NFL \)
\( NFA \)
## Overview of the BOP

### Standard presentation of the balance of payments

<table>
<thead>
<tr>
<th>Category</th>
<th>Credit</th>
<th>Debit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Current account</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Goods and Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goods</td>
<td>Exported</td>
<td>Imported</td>
</tr>
<tr>
<td>Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation</td>
<td>Exported</td>
<td>Imported</td>
</tr>
<tr>
<td>Travel</td>
<td>Exported</td>
<td>Imported</td>
</tr>
<tr>
<td>Other services</td>
<td>Exported</td>
<td>Imported</td>
</tr>
<tr>
<td>Government services n.i.e.</td>
<td>Exported</td>
<td>Imported</td>
</tr>
<tr>
<td><strong>B. Income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compensation of employees</td>
<td>Received</td>
<td>Paid</td>
</tr>
<tr>
<td>Investment income</td>
<td>Received</td>
<td>Paid</td>
</tr>
<tr>
<td>Of which: interest on external debt</td>
<td>Received</td>
<td>Paid</td>
</tr>
<tr>
<td><strong>C. Current transfers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2. Capital and financial account</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Capital account</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital transfers</td>
<td>Received</td>
<td>Paid</td>
</tr>
<tr>
<td>Acquisition/disposal of nonproduced, nonfinancial assets</td>
<td>Disposed of</td>
<td>Acquired</td>
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<td><strong>B. Financial account</strong></td>
<td></td>
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<td>Direct investment</td>
<td>From abroad</td>
<td>Abroad</td>
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<td>Portfolio investment</td>
<td>From abroad</td>
<td>Abroad</td>
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<tr>
<td>Other investment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade credits, loans, etc.</td>
<td>Borrowed</td>
<td>Loaned</td>
</tr>
<tr>
<td>Fund credit and loans</td>
<td>Purchased</td>
<td>Repurchased</td>
</tr>
<tr>
<td>Reserve assets</td>
<td></td>
<td></td>
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<tr>
<td>Monetary gold</td>
<td>Decrease</td>
<td>Increase</td>
</tr>
<tr>
<td>Special drawing rights</td>
<td>Decrease</td>
<td>Increase</td>
</tr>
</tbody>
</table>
National income accounts

\[ Y = C + I + G + X - Z \]
\[ = E + X - Z \]

where \( E = C + I + G \)

\[ CAB = X - Z = Y - E \]

Ignore \( Y_f \) and TR for simplicity

\[ S = I + G - T + X - Z \]

\[ CAB = S - I + T - G \]

\[ CAD = Z - X = E - Y = I - S + G - T \]
Links between BOP and national accounts

\[ Y = C + I + G + X - Z \]
\[ \text{GDP} = C + I + G + TB \]
\[ \text{GNP} = C + I + G + \text{CAB} \]
\[ \text{GNP} - \text{GDP} = \text{CAB} - TB = Y_f \ (\text{if } TR = 0) \]
\[ \text{GNP} = \text{GDP} + Y_f \]

- GNP > GDP in Pakistan
- GNP < GDP in Argentina

\[ \text{GNDI} = \text{GNP} + TR = \text{GDP} + Y_f + TR \]
### Links between BOP and national accounts

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<td>Goods and nonfactor services</td>
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</tr>
<tr>
<td>GNDI</td>
<td>Current account incl. transfers</td>
<td>Goods and services plus transfers</td>
</tr>
</tbody>
</table>
Fiscal accounts and links to BOP

- **Public sector**
  - \( G - T = \Delta B + \Delta D^G + \Delta D^F \)

- **Private sector**
  - \( I - S = \Delta D^P - \Delta M - \Delta B \)

Now, add them up

\[
G - T + I - S = \Delta B + \Delta D^G + \Delta D^F + \Delta D^P - \Delta M - \Delta B = \\
\Delta D^G + \Delta D^F + \Delta D^P - \Delta M = \\
\Delta D - \Delta M + \Delta D^F = -\Delta R + \Delta D^F - Z - Y
\]

- **External sector**
  - \( X - Z + F = \Delta R \)
Monetary accounts and links to BOP

Monetary survey

- \( M = D + R \)

From stocks to flows

- \( \Delta M = \Delta D + \Delta R \)

Solve for \( \Delta R \)

- \( \Delta R = \Delta M - \Delta D \)

- Monetary approach to balance of payments

- Still holds that \( \Delta R = X - Z + F \)
Balance of payments analysis

Equilibrium

Real exchange rate

Foreign exchange

Payments for imports of goods, services, and capital

Imports

Earnings from exports of goods, services, and capital

Exports
Balance of payments equilibrium

Equilibrium between demand and supply in foreign exchange market establishes

✓ Equilibrium real exchange rate
✓ Equilibrium in the balance of payments

\[ \text{BOP} = X + F^x - Z - F^z \]

\[ = X - Z + F \]

\[ = \text{current account} + \text{capital account} \]

\[ = 0 \]
Overvaluation

R moves when e is fixed

Foreign exchange

Real exchange rate

Deficit

Imports

Exports

Overvaluation
Overvaluation, again

Overvaluation works like a price ceiling

Supply (exports)

Overvaluation

Demand (imports)

Deficit
Trade balance

- Difference between exports and imports of goods
  - Provides useful information on likely future developments in the current account
  - Distinction between goods and services may appear arbitrary
  - Data on merchandise trade can be quickly obtained from customs while data on services may take more time
Terms of Trade

- Ratio of export prices to import prices: \( P_x/P_z \)
  - Typically expressed in as an index
  - \( P_x = \) Export price index
  - \( P_m = \) Import price index
    - Expressed in the same currency as the prices included in the export price index

- Indicator of the purchasing power of exports in terms of imports
  - Terms of trade improve when \( P_x/P_z \) rises
  - Terms of trade worsen when \( P_x/P_z \) falls

\[ Y = E + X - Z = \frac{E}{p_E} + \frac{X}{p_X} - \frac{Z}{p_Z} \quad (\text{GNP}) \]
\[ = \frac{E}{p_E} + \frac{X}{p_X} - \frac{Z}{p_Z} \quad (\text{GNI}) \]
Overall balance

- Another crucial indicator used to assess the external position of a country
  - A deficit in the overall balance means a decrease in the net foreign assets of the monetary authority except when exceptional financing becomes available.
  - Foreign reserves are traditionally held by the monetary authorities in order to finance payments imbalances and to defend the currency.
Overall balance

- Exceptional financing can be needed in an emergency where reserves have fallen to perilously low levels

- Three main types
  - Rescheduling of external debt obligations
    - Scheduled payments postponed in agreement with creditors
  - Debt forgiveness
    - Voluntary cancellation by creditors
  - Payments arrears on external debt service
    - Scheduled payments postponed without agreement with creditors
Overall balance

- Indicators of an appropriate level of foreign reserves
  - Ratio of reserves to monthly imports of goods and services of more than 3
  - Guidotti-Greenspan Rule

- Other considerations
  - Capital mobility
  - Exchange rate regime
  - Composition of external liabilities
  - Access to foreign borrowing
  - Seasonal nature of imports and exports
Balance of payments projections

- \( \Delta R = X - Z + F = CAB + FDI + NFL \)
- Need projections of:
  - Current account variable
  - Capital and financial operations account variables
- This gives projections of the change in net foreign assets
General considerations for BOP projections

- Developments in the global economy
- Developments and policies in the domestic economy
- Establish relations between the components of the BOP and the factors that influence these variables
Current account projections

- Exports and imports of goods
- Exports and imports of services
- Factor income
- Unrequited transfers
Import projections

- Assume small open economy
- Project volume of import demand

\[ Z = f\left( Y, \frac{P_Z}{P} \right) \]

- \( Z \) = volume of imports
- \( Y \) = domestic real GDP (+)
- \( P_Z/P \) = import prices relative to domestic GDP deflator (-)
export projections

- Assume small open economy
- Project volume of export demand

\[ X = f \left( Y^*, \frac{P_X}{P^*} \right) \]

- \( X \) = volume of exports
- \( Y^* \) = foreign real GDP (+)
- \( \frac{P_X}{P^*} \) = export prices relative to foreign GDP deflator (-)
export projections

- Assume small open economy
- Project volume of export supply

\[ X = f \left( Y, \frac{P_X}{P} \right) \]

- \( X \) = volume of exports
- \( Y \) = domestic real GDP (+)
- \( \frac{P_X}{P} \) = export prices relative to domestic GDP deflator (-)
services projections

- **Transport service (credit)**
  - Sale of transport and other business services (freight and insurance) by residents (carriers) to nonresidents
  - Depends on value of exports

- **Transport service (debit)**
  - Purchase of transport and other business services (freight and insurance) by residents from nonresidents
  - Depends on value of imports

- **Travel**
  - Depends on domestic GDP and competitiveness (prices, exchange rate)
income projections

- Compensation of employees
  - Seasonal or border workers who work in national territory but live in neighboring countries or vice versa
  - Depends on trend

- Interest payments
  - Estimated by entity responsible for managing external debt (interest rates, outstanding balance of debt, and new borrowing)

- Income from direct investment
  - Profits and dividends depend on stock of foreign investment in the country (debit side) or on the country's investment abroad (credit side)
Projections of transfers

- Private transfers
  - Transfers from emigrant workers to their country of origin
  - Depends on economic situation in country of origin and host country, exchange rate, tax regime

- Public transfers
  - Grants in cash and in kind
  - Need information from donors
  - Need compatibility with grant projections in government finance statistics
Projections of capital and financial account

- Capital transfers
  - Grants in cash (for investment) and in kind having the nature of investments
  - Need information from donors
  - Need compatibility with grant projections in the table of government finance statistics

- Foreign direct investment
  - Depends on investment opportunities, profitability of investments, tax incentives, economic growth and political and social stability of the country
Projections of capital and financial account

- Portfolio investment
  - Equity participation instruments and debt instruments, money market instruments, and, separately, financial derivatives
  - Depends on access to international markets, restrictions on capital flows, relative interest rate, exchange rate, political and social situation in the country
In conclusion

- External trade and investment are crucial determinants of economic development.
- Excessive external imbalances can jeopardize the benefits of external trade and capital flows.
- Financial programs are designed to achieve external balance by fostering the buildup of adequate foreign exchange reserves.
- Need to maintain real exchange rates at levels that are consistent with BOP equilibrium, including sustainable debt.
  - Must avoid overvaluation.