Saving and Investment in the Open Economy

Balance of Payments Accounts

<table>
<thead>
<tr>
<th>Transactions</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imports (goods and services)</td>
<td>$720</td>
</tr>
<tr>
<td>Exports (goods and services)</td>
<td>$800</td>
</tr>
<tr>
<td>Net exports and services</td>
<td>$800</td>
</tr>
<tr>
<td>Non-factor income</td>
<td>$120</td>
</tr>
<tr>
<td>Balance of payments balance</td>
<td>$880</td>
</tr>
<tr>
<td>Current account balance</td>
<td>$880</td>
</tr>
</tbody>
</table>

Balance of Payments Accounting

- The Balance of Payments Accounts are a summary of a country’s net international transactions.
  - Credit items represent international receipts.
  - Debit items represent international payments.
Balance of Payments Accounting

• Basic Principles:
  - Credit items (+) are funds flowing into a country.
    - Exports of goods and services,
    - Investment income on foreign assets owned by domestic residents,
    - Transfers to domestic residents,
    - Net purchases of domestic assets by foreign residents.
  - This represents the demand for the domestic currency (in the foreign exchange market).

• Basic Principles:
  - Debit items (−) are funds flowing out of a country:
    - Imports of goods and services,
    - Investment payments on domestic assets owned by foreign residents,
    - Transfers to foreign residents,
    - Net purchases of foreign assets by domestic residents.
  - This represents the supply for the domestic currency (in the foreign exchange market).

Balance of Payments Accounting

• The Balance of Payments Accounts consists of:
  - The current account balance, CA,
  - The capital and financial account balance, KFA, and
  - The official settlements account balance, OSA.

Balance of Payments Accounting

• The Current Account balance, CA, consists of:
  - Net exports of goods and services (NX),
  - Net income from abroad (NFP), and
  - Net unilateral transfers (NUT).
Balance of Payments Accounting

• The Current Account balance, $CA$:
  ➢ Net exports of goods and services, $(NX)$:
    • Exports, $X$, (a credit item).
    • Imports, $M$, (a debit item).
    • For most countries, net exports, $X - M$, are the largest part of the current account and they are hugely negative for the U.S.

Balance of Payments Accounting

• The Current Account balance, $CA$:
  ➢ Net income from abroad $(NFP)$:
    • Investment income on foreign assets owned by domestic residents, (a credit item).
    • Investment payments on domestic assets owned by foreign residents, (a debit item).
    • For most countries, net income from abroad is a relatively small part of the current account and is about equal to net factor payments, $NFP$.

Balance of Payments Accounting

• The Current Account balance, $CA$:
  ➢ Net unilateral transfers $(NUT)$:
    • Transfers to domestic residents, (a credit item).
    • Transfers to foreign residents, (a debit item).
    • For some countries, net unilateral transfers are a substantial (positive) part of the current account; for the U.S., net unilateral transfers have been increasingly negative.

Balance of Payments Accounting

• The Current Account balance, $CA$, is given by:

$$CA = NX + NFP + NUT$$

• When $CA > 0$, there is a current account surplus.
  • More funds flowing into than out of a country.

• When $CA < 0$, there is a current account deficit.
  • Fewer funds flowing into than out of a country.
Balance of Payments Accounting

• The Capital and Financial Account balance, \( KFA \):
  - The capital and financial account balance is the net international transactions in existing real and financial assets.
    - Real assets like real estate.
    - Financial assets like stocks and bonds.

Balance of Payments Accounting

• The Capital and Financial Account balance, \( KFA \), consists of:
  - The Capital Account balance, and

Balance of Payments Accounting

• The Capital and Financial Account balance, \( KFA \):
  - The capital account balance is the net flow of unilateral transfers of assets into or out of a country.

Balance of Payments Accounting

• The Capital and Financial Account balance, \( KFA \):
  - The financial account balance is the net flow of:
    - Net purchases of domestic assets by foreign residents, (a credit item)
    - Net purchases of foreign assets by domestic residents, (a debit item).

**MINUS**
  - Net purchases of foreign assets by domestic residents, (a debit item).

• Most international transactions are in the financial account part of the capital and financial account.
Balance of Payments Accounting

• The Capital and Financial Account balance, \( KFA \):
  - Foreign direct investment:
    - A foreign firm buys or builds domestic capital goods.
    - Increases the capital and financial account balance.
  - Portfolio investment:
    - Foreigners acquire U.S. securities.
    - Increases the capital and financial account balance.

Balance of Payments Accounting

• The Official Settlements Account balance, \( OSA \):
  - The Official Settlements Account balance is the net transactions between central banks using official reserve assets to make international payments in the foreign exchange market.
  - Official reserve assets include:
    - Foreign government securities,
    - Bank deposits, and
    - SDRs of the IMF, and
    - Gold.

Balance of Payments Accounting

• The Official Settlements Account balance, \( OSA \):
  - Central banks buy (or sell) official reserve assets with (or to obtain) their own currencies.
  - The \( OSA \) is also called the “balance of payments”.
    - The net change in a country’s official reserve assets.
      - The change in the domestic government’s reserve assets
        - \( \text{MINUS} \)
      - The change in foreign central bank holdings of domestic assets.
  - A balance of payments surplus means a country is increasing its official reserve assets.
  - A balance of payments deficit means a country is reducing its official reserve assets.
Balance of Payments Accounting

- The relationship between the \( CA \) and the \( KFA \):
  
  - Every exchange of goods, services, and/or assets requires a payment.
  
  - Therefore, the current account plus the capital and financial account must sum to zero.

\[
CA + KFA = 0
\]

or

\[
CA = -KFA
\]

Balance of Payments Accounting

- The relationship between the \( CA \) and the \( KFA \):
  
  - In practice, \( CA + KFA \) does not equal 0 because of measurement problems.
    
    - These are recorded as a statistical discrepancy.

Balance of Payments Accounting

- Net foreign assets and the balance of payments accounts:
  
  - Net foreign assets are a country’s total foreign assets minus its total foreign liabilities.
    
    - Net foreign assets can change because of the acquisition or disposition of new assets or liabilities.
    
    - Net foreign assets may also change because of an change in the value of existing assets or liabilities.

Balance of Payments Accounting

- Net foreign assets and the balance of payments accounts:
  
  - The net increase (decrease) in foreign assets equals a country’s current account surplus (deficit).
    
    - A current account surplus implies a capital and financial account deficit, and a net increase in holdings of foreign assets (a financial outflow).
    
    - A current account deficit implies a capital and financial account surplus, and a net decline in holdings of foreign assets (a financial inflow).
Balance of Payments Accounting

- Equivalent measures of a country’s international trade and finance:
  - Current account surplus (deficit):
    - capital and financial account deficit (surplus), or
    - net acquisition (disposition) of foreign assets, or
    - net foreign lending (borrowing), or
  - net exports surplus (deficit)
  - If \( NFP \) and \( NUT \) are zero.

Goods Market Equilibrium, Open Economy

- National saving is given by:
  \[ S = I + CA = I + (NX + NFP) \]
  - National saving has two uses:
    - Increase the capital stock by domestic investment.
    - Increase net foreign assets by lending to foreigners.
  - For simplicity, assume \( NFP = NUT = 0 \).

Goods Market Equilibrium, Open Economy

\[ S = I + CA = I + NX \]

- Goods market equilibrium requires that national saving and investment must equal their desired levels:
  \[ S^d = I^d + NX \]
  - or
  \[ I^d = S^d - NX \]
  - or
  \[ NX = S^d - I^d \]

Small Open Economies

- A small open economy, SOE, is an economy too small to affect the world real interest rate.
  - World real interest rate \( (r^w) \):
    - The world real interest rate is the real interest rate in the international capital markets.
  - Key assumption: Residents of a SOE can borrow or lend any amount at the expected \( r^w \).
A SOE that neither lends or borrows abroad

A SOE that lends abroad

A SOE that borrows from abroad

Saving and Investment in a SOE

- \( r^w \) may be such that \( S^f > P_l \), \( S^f = P_l \), or \( S^f < P_l \).
  - If \( S^f > P_l \), the excess saving is lent internationally.
    - Net foreign lending is positive and \( NX > 0 \).
  - If \( S^f = P_l \), no net foreign lending and \( NX = 0 \).
  - If \( S^f < P_l \), the excess investment is financed by borrowing internationally.
    - Net foreign lending is negative and \( NX < 0 \).
Saving and Investment in a SOE

- Economic shocks in a SOE.
  - Anything that changes desired national saving.
    - Changes in current output, future output, $G$, etc.
  - Anything that changes desired investment.
    - Changes in the $MPK_f$, $\tau$, etc.

An increase in desired saving in a SOE

- Economic shocks in a SOE:
  - An increase in desired saving (at a given world interest rate):
    - Increases the current account balance, and
    - Increases net foreign lending or decreases net foreign borrowing.

An increase in desired investment in a SOE
An increase in desired investment in a SOE

- Effects of economic shocks in a SOE:
  - An increase in desired investment (at a given world interest rate):
    - Reduces the current account balance, and
    - Reduces net foreign lending or increases net foreign borrowing.

Large Open Economies

- A large open economy, LOE, is an economy that is large enough to affect the world real interest rate.
  - Suppose there are just 2 economies in the world.
    - The home or domestic economy.
      - Saving = $S$, investment = $I$.
    - The foreign economy, representing the rest of the world.
      - Saving = $S_{For}$, investment = $I_{For}$.

Saving and Investment in LOE

- The world real interest rate, $r^w$, will adjust to equilibrate desired international lending by one country with desired international borrowing by the other.
  - The equilibrium world real interest rate is determined such that a current account surplus in one country is equal in magnitude to the current account deficit in the other.

Determination of $r^w$ with two LOEs
Saving and Investment in LOE

• Economic shocks in a LOE:
  ➢ Anything that changes desired national saving.
    • Changes in current output, future output, G, etc.
  ➢ Anything that changes desired investment.
    • Changes in the MPK, τ, etc.

An increase in desired saving with LOEs

• Economic shocks in a LOE:
  ➢ An increase in desired saving in one LOE will:
    • Increase that country’s current account balance,
    • Increase that country’s net foreign lending, and
      – Or decrease that country’s net foreign borrowing.
    • Cause the world real interest rate to decline.

An increase in desired investment with LOEs
An increase in desired investment with LOEs

- Economic shocks in a LOE:
  - An increase in desired investment in a LOE will:
    - Reduce that country’s current account balance,
    - Reduce that country’s net foreign lending, and
    - Increase that country’s net foreign borrowing.
    - Cause the world real interest rate to rise.