

ECON 1550: International Finance

National Income Accounting for
Open Economies

Announcements

- Problem Set 1 due today before midnight
- Solutions and Problem Set 2 posted right after
- Read pages 58–67 of textbook before Wednesday lecture
- Fill in survey for office hours and section (right now!)

Office Hours and Section Availability

Please fill in your availability:



<https://www.when2meet.com/?34820140-APJfJ>

Agenda

- Balance of payments account
- Exchange rate determination with asset approach

Macro Review: GDP

Gross Domestic Product (GDP) measures the total value of:

- **Production:** All final goods and services produced within a country
- **Income:** All income earned from production within a country
- **Value added:** Sum of value added at each stage of production

All three approaches yield the same number.

Closed Economy

$$Y = C + I + G$$

- All output is either consumed, invested, or purchased by government
- No trade with the rest of the world

Open Economy with GDP

$$GDP = C + I + G + \underbrace{EX - IM}_{NX}$$

- EX = Exports (domestic goods sold abroad)
- IM = Imports (foreign goods purchased domestically)
- NX = Net exports (trade balance)

GDP and GNP

- **GDP:** Value of production *within a country's borders*
 - Regardless of who owns the factors of production
- **GNP:** Value of production by *a country's residents*
 - Regardless of where production takes place
- **Relationship:**

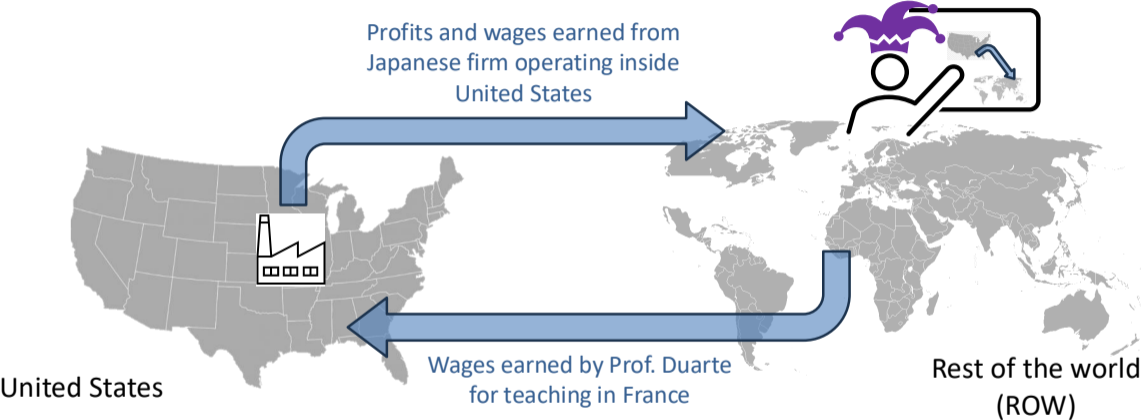
$$\text{GNP} = \text{GDP} + \text{Net Income from Abroad}$$

Open Economy with GNP

$$GNP = C + I + G + CA$$

- CA = Current account
- $CA = NX +$ Net income from abroad

GDP and GNP



Net Income = wages from Prof. Duarte teaching in France – profits and wages from firm operating inside US

United States GNP = United States GDP + Net Income

National Saving: Closed Economy

National saving = output not used for consumption or government spending

$$\begin{aligned} S &\equiv Y - C - G \\ &= (C + I + G) - C - G \\ &= I \end{aligned}$$

In a closed economy: $S = I$

National Saving: Open Economy

Starting from $Y = C + I + G + NX$:

$$S \equiv Y - C - G$$

$$= I + NX$$

In an open economy: $S = I + NX$

National Saving: Open Economy

Rearranging: $S - I = NX$

- If $S > I$: Trade surplus, country is a net lender
- If $S < I$: Trade deficit, country is a net borrower

Private Saving

Private saving = disposable income that is saved, not consumed

$$S^p \equiv Y - T - C$$

Public (Government) Saving

Government saving = tax revenue minus government spending

$$S^g \equiv T - G$$

- If $T > G$: Budget surplus ($S^g > 0$)
- If $T < G$: Budget deficit ($S^g < 0$)

Total Saving

Total national saving:

$$\begin{aligned} S &= S^p + S^g \\ &= (Y - T - C) + (T - G) \\ &= Y - C - G \end{aligned}$$

Using $S = I + NX$ from before, we get:

$$S^p + S^g = I + NX$$

Balance of Payments

| | |
|--------------------------|------|
| Current Account | -200 |
| Capital Account | -1 |
| Financial Account | -201 |

$$\begin{array}{rclcl} \text{Current} & & \text{Capital} & & \text{Financial} \\ \text{Account} & + & \text{Account} & = & \text{Account} \\ (-200) & + & (-1) & = & -201 \end{array}$$

Balance of Payments

| | |
|--------------------------------|------|
| Current Account | -200 |
| Capital Account | -1 |
| Financial Account | -201 |
| Statistical discrepancy | 0 |

$$\begin{array}{r} \text{Statistical} \\ \text{Discrepancy} \end{array} = \text{Financial} \text{ Account} - \left(\begin{array}{r} \text{Current} \\ \text{Account} \end{array} + \begin{array}{r} \text{Capital} \\ \text{Account} \end{array} \right)$$
$$0 = -201 - [(-200) + (-1)]$$

U.S. Balance of Payments Accounts for 2025-Q3 (\$ bn)

Current Account -226

Capital Account -1

Financial Account -410

Statistical discrepancy -183

$$\begin{aligned} \text{Statistical Discrepancy} &= \text{Financial Account} - \left(\text{Current Account} + \text{Capital Account} \right) \\ -183 &= -410 - [(-226) + (-1)] \end{aligned}$$

Source: BEA

Current Account

- 1 Exports total
- 2 Goods
- 3 Services
- 4 Income receipts (primary income)
- 5 Imports total
- 6 Goods
- 7 Services
- 8 Income payments (primary income)
- 9 Net unilateral transfers (secondary income)
- 10 **Balance on current account**

Capital Account

- 11 Balance on capital account
-

Financial Account

- 12 Net U.S. acquisition of foreign financial assets
 - 13 Official reserve assets
 - 14 Other assets
 - 15 Net U.S. incurrence of domestic liabilities
 - 16 Official reserve assets
 - 17 Other liabilities
 - 18 Financial derivatives, net
 - 19 **Net financial flows**
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- 20 **Statistical discrepancy**
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Bottom line to remember

Whenever goods cross borders, assets move
in the opposite direction.