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!)

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:**

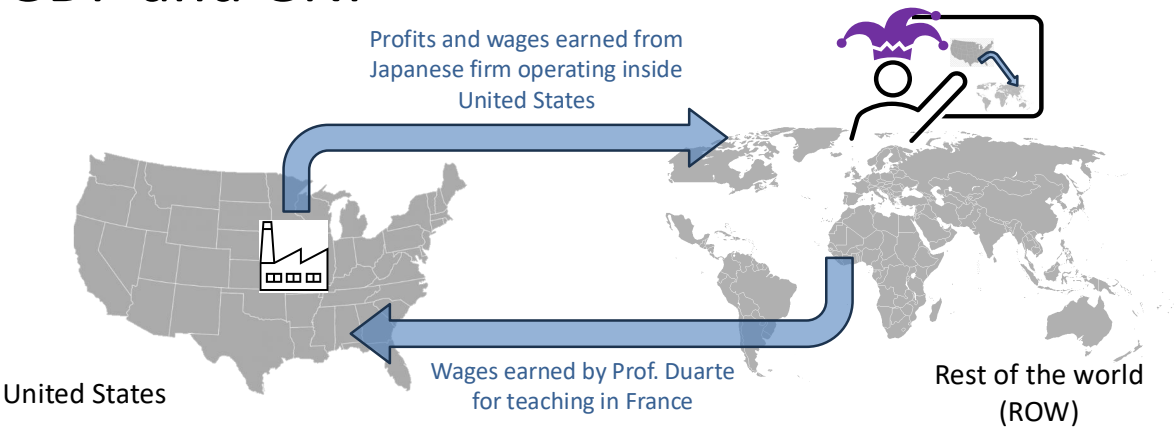
$$\text{GNP} = \text{GDP} + \text{Net Income from Abroad}$$

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

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

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

Current Account		Capital Account		Financial Account
(-200)	$+$	(-1)	$=$	-201

Balance of Payments

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

$$\underset{\text{Discrepancy}}{\text{Statistical}} = \underset{\text{Account}}{\text{Financial}} - \left(\underset{\text{Account}}{\text{Current}} + \underset{\text{Account}}{\text{Capital}} \right)$$

$$0 = -201 - [\,(-200) + (-1)\,]$$

U.S. Balance of Payments Accounts for 2025-Q3	($ bn)
Current Account	-226
Capital Account	-1
Financial Account	-410
Statistical discrepancy	-183

$$\underset{\text{Discrepancy}}{\text{Statistical}} = \underset{\text{Account}}{\text{Financial}} - \left(\underset{\text{Account}}{\text{Current}} + \underset{\text{Account}}{\text{Capital}} \right)$$

$$-183 = -410 - [\,(-226) + (-1)\,]$$

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**
20	**Statistical discrepancy**

Example: Current Account

Current Account

1	Exports total $(2) + (3) + (4)$	\$25
2	Goods	\$0
3	Services	\$25
4	Income receipts (primary income)	\$0
5	Imports total $(6) + (7) + (8)$	\$115
6	Goods	\$100
7	Services	\$0
8	Income payments (primary income)	\$15
9	Net unilateral transfers (secondary income)	\$0
10	**Balance on current account** $(1) - (5) + (9)$	**−\$90**

Example: Capital and Financial Accounts

	Capital Account	
11	Balance on capital account	\$0
	Financial Account	
12	Net acquisition of foreign financial assets	−\$50
13	Net incurrence of domestic liabilities	\$80
14	Financial derivatives, net	\$0
15	**Net financial flows** $(12) - (13) + (14)$	**−\$130**
	Statistical discrepancy $(15) - (10) - (11)$	**−\$40**

Key Takeaways

- Current account deficit of $90
  - Importing more goods/services/income than exporting
- Financial account: net inflow of $130
  - Foreign lending exceeds domestic acquisition of foreign assets
- Statistical discrepancy of −$40
  - Accounts don’t balance perfectly in practice