

ECON 1550: International Finance

National Income Accounting for
Open Economies

Announcements

- Problem Set 1 due on Wednesday before midnight
- Section
 - Nathalie: 4pm in Friedman Hall 102
 - Eric: 12pm in Salomon Center Room 202 (tentative)
- Read pages 41–57 of textbook before Wednesday lecture

Agenda

- Open economy accounting

$$GDP = C + I + G + NX \text{ and } GNP = C + I + G + CA$$

- Saving, investment, and the current account
- Start balance of payments account

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:**

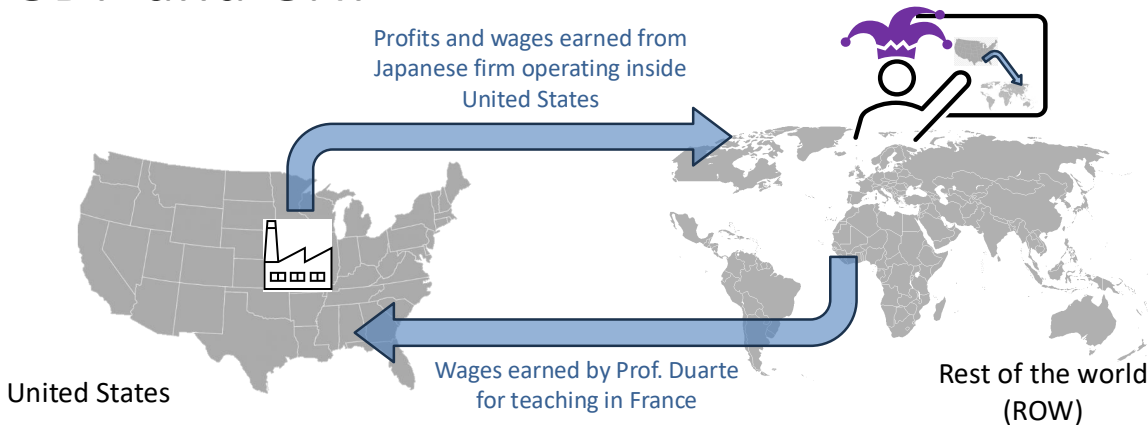
$$\text{GNP} = \text{GDP} + \text{Net Income from Abroad}$$

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

- 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**

Balance of Payments

Capital Account

11 Balance on capital account

Financial Account

12 Net U.S. acquisition of financial assets

13 Net U.S. incurrence of liabilities

14 Financial derivatives, net

15 **Net financial flows**

Statistical discrepancy