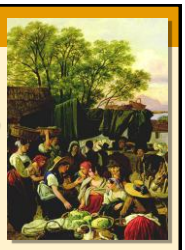
N. Gregory Mankiw

Principles of
Macroeconomics
Sixth Edition



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Open-Economy Macroeconomics: Basic Concepts

Premium PowerPoint Slides by Ron Cronovich

In this chapter, look for the answers to these questions:

- How are international flows of goods and assets related?
- What's the difference between the real and nominal exchange rate?
- What is "purchasing-power parity," and how does it explain nominal exchange rates?

Introduction

- One of the Ten Principles of Economics from Chapter 1:
  Trade can make everyone better off.
- This chapter introduces basic concepts of international macroeconomics:
  - The trade balance (trade deficits, surpluses)
  - International flows of assets
  - Exchange rates

Closed vs. Open Economies

- A **closed economy** does not interact with other economies in the world.
-

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The Flow of Goods & Services

- **Exports**:
  domestically-produced g&s sold abroad
- **Imports**:
  foreign-produced g&s sold domestically
-

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ACTIVE LEARNING 1

Variables that affect NX

What do you think would happen to U.S. net exports if:

A. Canada experiences a recession (falling incomes, rising unemployment)

B. U.S. consumers decide to be patriotic and buy more products "Made in the U.S.A."

C. Prices of goods produced in Mexico rise faster than prices of goods produced in the U.S.

ACTIVE LEARNING 1

Answers

Variables that Influence Net Exports

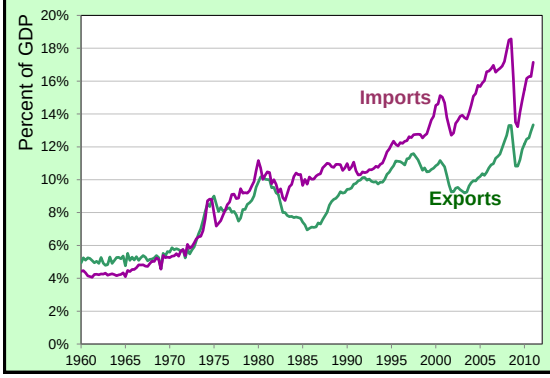
- Consumers' preferences for foreign and domestic goods
-
-
-
- Transportation costs
- Govt policies

Trade Surpluses & Deficits

NX measures the imbalance in a country's trade in goods and services.

- **Trade deficit**:
- **Trade surplus**:
- **Balanced trade**:

The U.S. Economy's Increasing Openness



The Flow of Capital

- **Net capital outflow (NCO)**:

- ***NCO*** is also called

The Flow of Capital

The flow of capital abroad takes two forms:

- **Foreign direct investment**:
  Domestic residents actively manage the foreign investment, e.g., McDonalds opens a fast-food outlet in Moscow.
- **Foreign portfolio investment**:
  Domestic residents

The Flow of Capital

NCO measures the imbalance in a country's trade in assets:

- When ***NCO*** > 0,
- When ***NCO*** < 0, "capital inflow"
  Foreign purchases of domestic assets exceed domestic purchases of foreign assets.

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Variables that Influence NCO

-
-
-
- Govt policies affecting foreign ownership of domestic assets

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The Equality of NX and NCO

- An accounting identity: ***NCO*** = ***NX***
  - arises because

    (and vice versa)
- When a foreigner purchases a good from the U.S.,

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The Equality of NX and NCO

- When a U.S. citizen buys foreign goods,
  -
  - the U.S. buyer pays with U.S. dollars or assets, so

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Saving, Investment, and International Flows of Goods & Assets

$Y = C + I + G + NX$	accounting identity
	rearranging terms
	since $S = Y - C - G$
	since $NX = NCO$

- When $S > I$,
- When $S < I$,

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Case Study: The U.S. Trade Deficit

- The U.S. trade deficit reached record levels in 2006 and remained high in 2007–2008.
- Recall, $NX = S - I = NCO$.
  A trade deficit means
- In 2007, foreign purchases of U.S. assets exceeded U.S. purchases of foreign assets by $775 million.
- Such deficits have been the norm since 1980…

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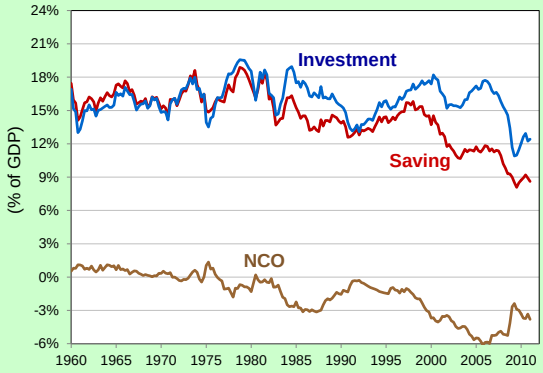
U.S. Saving, Investment, and NCO, 1950–2011



Case Study: The U.S. Trade Deficit

Why U.S. saving has been less than investment:

- In the 1980s and early 2000s,
- In the 1990s,
  national saving increased as the economy grew,
  but

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Case Study: The U.S. Trade Deficit

- Is the U.S. trade deficit a problem?
  - The extra capital stock from the ’90s investment boom may well yield large returns.
  - The fall in saving of the ’80s and ’00s, while not desirable, at least did not depress domestic investment, since firms could borrow from abroad.
- A country, like a person, can go into debt for good reasons or bad ones.
  A trade deficit is not necessarily a problem, but might be a symptom of a problem.

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Case Study: The U.S. Trade Deficit

as of 12-31-2009

People abroad owned $21.1 trillion in U.S. assets.
U.S. residents owned $18.4 trillion in foreign assets.
U.S.' net indebtedness to other countries = $2.7 trillion.
Higher than every other country's net indebtedness:

- So far, the U.S. earns higher interest rates on foreign assets than it pays on its debts to foreigners.
- But if U.S. debt continues to grow, foreigners may demand higher interest rates, and servicing the debt would become a drain on U.S. income.

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The Nominal Exchange Rate

- **Nominal exchange rate**:

- We express all exchange rates as foreign currency per unit of domestic currency.

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Appreciation and Depreciation

- **Appreciation** (or "strengthening"):

  as measured by the amount of foreign currency it can buy
- **Depreciation** (or "weakening"):

  as measured by the amount of foreign currency it can buy
- Examples: During 2007, the U.S. dollar…
  - depreciated 9.5% against the Euro
  - appreciated 1.5% against the S. Korean Won

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The Real Exchange Rate

- **Real exchange rate**:

- Real exchange rate =

  where

  P =

  P* = foreign price (in foreign currency)

  e = nominal exchange rate, i.e., foreign currency per unit of domestic currency

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Example With One Good

- A Big Mac costs $2.50 in U.S., 400 yen in Japan
- ***e*** = 120 yen per $
- ***e*** x ***P*** =

- Compute the real exchange rate:

$$\frac{e \times P}{P^*} = \frac{\text{yen per U.S. Big Mac}}{\text{yen per Japanese Big Mac}}$$

=

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Interpreting the Real Exchange Rate

"The real exchange rate =
0.75 Japanese Big Macs per U.S. Big Mac"

Correct interpretation:

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ACTIVE LEARNING 2

Compute a real exchange rate

e = 10 pesos per $

price of a tall Starbucks Latte
P = $3 in U.S., ***P**** = 24 pesos in Mexico

A. What is the price of a U.S. latte measured in pesos?

B. Calculate the real exchange rate, measured as Mexican lattes per U.S. latte.

The Real Exchange Rate With Many Goods

P =
measures the price of a basket of goods

P* =

Real exchange rate
= (***e*** x ***P***)/***P****
=

- If U.S. real exchange rate appreciates,

The Law of One Price

- **Law of one price**:
  - Suppose coffee sells for $4/pound in Seattle and $5/pound in Boston, and can be costlessly transported.
  - There is an opportunity for _____, making a quick profit by buying coffee in Seattle and selling it in Boston.
  -

Purchasing-Power Parity (PPP)

- **Purchasing-power parity**:
- based on the law of one price
- implies that

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Purchasing-Power Parity (PPP)

- Example: The "basket" contains a Big Mac.
  P = price of U.S. Big Mac (in dollars)
  P* = price of Japanese Big Mac (in yen)
  e = exchange rate, yen per dollar
- According to PPP,
- Solve for ***e***:

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PPP and Its Implications

- PPP implies
- If the two countries have different inflation rates, then
  - If inflation is higher in Mexico than in the U.S.,
  - If inflation is higher in the U.S. than in Japan, then ***P*** rises faster than ***P****,

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Limitations of PPP Theory

Two reasons why exchange rates do not always adjust to equalize prices across countries:

-
  - Examples: haircuts, going to the movies
  -
-
  - E.g., some U.S. consumers prefer Toyotas over Chevys, or vice versa
  -

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Limitations of PPP Theory

- Nonetheless, PPP works well in many cases, especially as an explanation of long-run trends.
- For example, PPP implies:

  (relative to a low-inflation country like the US).
- The data support this prediction…

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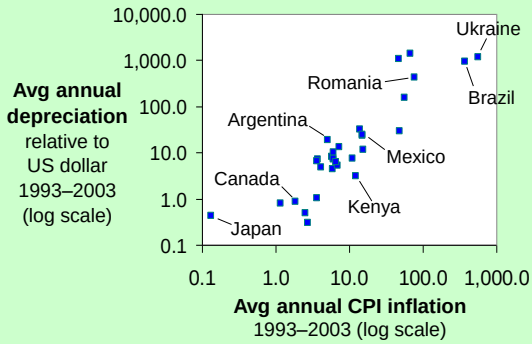
Inflation & Depreciation in a Cross-Section of 31 Countries



ACTIVE LEARNING 3

Chapter review questions

1. Which of the following statements about a country with a trade deficit is <u>not true</u>?

- **A.** Exports < imports
- **B.** Net capital outflow < 0
- **C.** Investment < saving
- **D.** $Y < C + I + G$

2. A Ford Escape SUV sells for $24,000 in the U.S. and 720,000 rubles in Russia.

If purchasing-power parity holds, what is the nominal exchange rate (rubles per dollar)?