

CHAPTER 31

**Open-Economy Macroeconomics:
Basic Concepts**

PRINCIPLES OF
Economics
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Premium PowerPoint Slides
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**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?

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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

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Closed vs. Open Economies

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

§

The Flow of Goods & Services

§ **Exports:**
domestically-produced g&s sold abroad

§ **Imports:**
foreign-produced g&s sold domestically

§

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

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Variables that Influence Net Exports

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

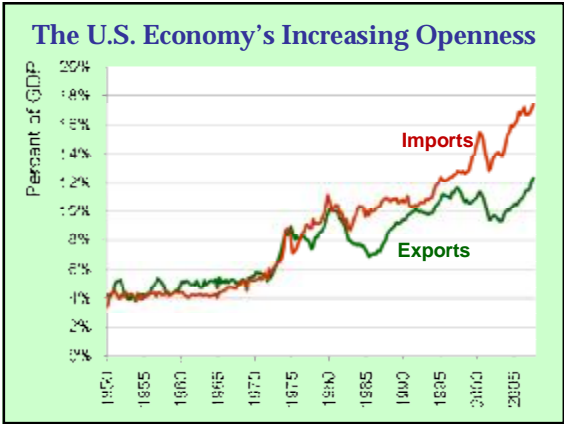
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Trade Surpluses & Deficits

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

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

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The Flow of Capital

§ **Net capital outflow (NCO):**

§ **NCO** is also called

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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

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The Flow of Capital

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

§ When **NCO** > 0,

§ When **NCO** < 0,
Foreign purchases of domestic assets exceed domestic purchases of foreign assets.

Variables that Influence NCO

§

§

§

§ Govt policies affecting foreign ownership of domestic assets

The Equality of NX and NCO

§ An accounting identity:

§ arises because every transaction that affects **NX** also affects **NCO** by the same amount (and vice versa)

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 $S < I$,

Case Study: The U.S. Trade Deficit

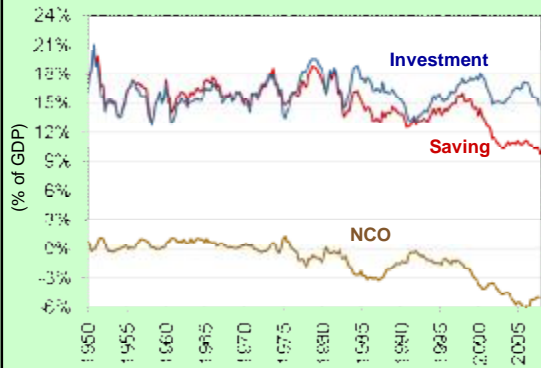
§ The U.S. trade deficit reached record levels in 2006 and remained high in 2007-2008.

§ 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...

U.S. Saving, Investment, and NCO, 1950-2007



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 domestic investment

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, as 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.

Case Study: The U.S. Trade Deficit

as of 12-31-2007

People abroad owned \$20.1 trillion in U.S. assets.
U.S. residents owned \$17.6 trillion in foreign assets.
U.S.' net indebtedness to other countries = \$2.5 trillion.
Higher than every other country's net indebtedness.
So,

§ 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.

The Nominal Exchange Rate

§ Nominal exchange rate:

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

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

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

Example With One Good

§ A Big Mac costs \$2.50 in U.S., 400 yen in Japan

§ $e = 120$ yen per \$

§ $e \times P =$

§ 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 US latte measured in pesos?

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

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The Real Exchange Rate With Many Goods

$P =$
measures the price of a basket of goods

$P^* =$

Real exchange rate
 $= (e \times P) / P^*$
 $=$

§ 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

Purchasing-Power Parity (PPP)

§ Example: The “basket” contains a Big Mac.

P = price of US Big Mac (in dollars)

P^* = price of Japanese Big Mac (in yen)

e = exchange rate, yen per dollar

§ According to PPP,

§ Solve for e :

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^* , so e falls – the dollar depreciates against the yen.

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

§

Limitations of PPP Theory

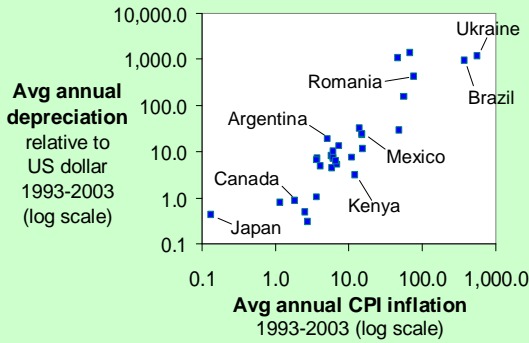
§ Nonetheless, PPP works well in many cases, especially as an explanation of long-run trends.

§ For example, PPP implies:

(relative to a low-inflation country like the US).

§ The data support this prediction...

Inflation & Depreciation in a Cross-Section of 31 Countries



ACTIVE LEARNING 3

Chapter review questions

- Which of the following statements about a country with a trade deficit is not true?
 - Exports < imports
 - Net capital outflow < 0
 - Investment < saving
 - $Y < C + I + G$
- 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)?
