Openness in Goods and Financial Markets

CHAPTER18

Openness in Goods, and Financial Markets

Openness has three distinct dimensions:

1. **Openness in goods markets**. Free trade restrictions include **tariffs** and **quotas.**
2. **Openness in financial markets**. **Capital controls** place restrictions on the ownership of foreign assets.
3. **Openness in factor markets**. The ability of firms to choose where to locate production, and workers to choose where to work. The **North American Free Trade Agreement (NAFTA)** is an example of this.

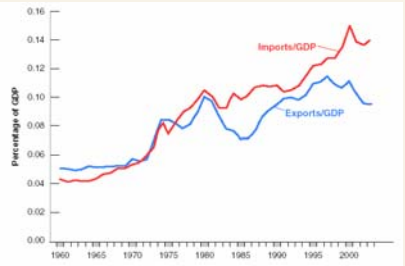
Openness in Goods, and Financial Markets

18-1

Figure 18 - 1

U.S. Exports and Imports as Ratios of GDP since 1960

Exports and imports, which were equal to 5% of GDP in the 1960s, are now equal to about 12% of GDP.



Exports and Imports

The behavior of exports and imports in the United States is characterized by:

- The U.S. economy is becoming more open over time, and trades more than twice as much (relative to its GDP) with the rest of the world as it did just 40 years ago.
- Although imports and exports have followed broadly the same upward trend, they have also diverged for long periods of time, generating sustained trade surpluses and trade deficits.

Exports and Imports

A good index of openness is the proportion of aggregate output composed of **tradable goods**—or goods that compete with foreign goods in either domestic markets or foreign markets.

Estimates are that tradable goods represent around 60% of aggregate output in the United States today.

FOCUS

Can Exports Exceed GDP?

The key to the answer is to realize that exports and imports may include exports and imports of intermediate goods.

Exports and Imports

Table 18-1 **Ratios of Exports to GDP for Selected OECD Countries, 2003**

Country	Export Ratio (%)	Country	Export Ratio (%)
United States	10	Switzerland	42
Japan	12	Austria	51
Germany	36	Netherlands	62
United Kingdom	25	Belgium	79

The main factors behind differences in export ratios are geography and country size.

Countries can have export ratios larger than the value of their GDP because exports and imports may include exports and imports of intermediate goods.

The Choice Between Domestic Goods and Foreign Goods

When goods markets are open, domestic consumers must decide not only how much to consume and save, but also whether to buy domestic goods or to buy foreign goods.

Central to the second decision is the price of domestic goods relative to foreign goods, or the **real exchange rate**.

Nominal Exchange Rates

Nominal exchange rates between two currencies can be quoted in one of two ways:

- As the price of the domestic currency in terms of the foreign currency.
- As the price of the foreign currency in terms of the domestic currency.

Nominal Exchange Rates

The **nominal exchange rate** is the price of the foreign currency in terms of the domestic currency.

- An **appreciation** of the domestic currency is an increase in the price of the domestic currency in terms of the foreign currency, which corresponds to a *increase* in the exchange rate.
- A **depreciation** of the domestic currency is a decrease in the price of the domestic currency in terms of the foreign currency, or a decrease in the exchange rate.

Nominal Exchange Rates

When countries operate under **fixed exchange rates**, that is, maintain a constant exchange rate between them, two other terms used are:

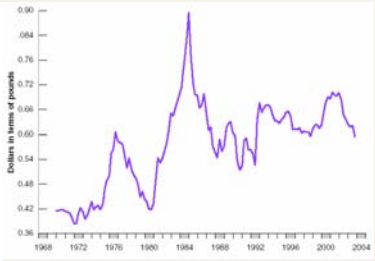
- **Revaluations**, rather than appreciations, which are decreases in the exchange rate, and
- **Devaluations**, rather than depreciations, which are increases in the exchange rate.

Nominal Exchange Rates

Figure 18 - 2

The Nominal Exchange Rate Between the Dollar and the Pound since 1970

Although the dollar has strongly appreciated vis-á-vis the pound over the past 33 years, this appreciation has come with large swings in the nominal exchange rate between the two countries, especially in the 1980s.



Nominal Exchange Rates

Note the two main characteristics of the figure:

- **The trend increase in the exchange rate**. Put another way, there was an appreciation of the dollar vis á vis the pound over the period.
- **The large fluctuations in the exchange rate**. Put another way, there was a very large appreciation of the dollar in the first half of the 1980s, followed by a large depreciation later in the decade.

From Nominal to Real Exchange Rates

Let's look at the real exchange rate between the United States and the UK.

- If the price of a Cadillac in the US is $40,000, and a dollar is worth 0.55 pounds, then the price of a Cadillac in pounds is $40,000 X 0.55 = £22,000.
- If the price of a Jaguar in the UK is £30,000, then the price of a Cadillac in terms of Jaguars would be £22,000/ £30,000 = 0.73.

To generalize this example to all of the goods in the economy, we use a price index for the economy, or the GDP deflator.

From Nominal to Real Exchange Rates

Figure 18 - 3

The Construction of the Real Exchange Rate

The real exchange rate equals the nominal exchange rate times the foreign price level, divided by the domestic price level.

$$\varepsilon \equiv \frac{EP}{P^*}$$

- P = price of U.S. goods in dollars
- P^* = price of British goods in pounds

From Nominal to Real Exchange Rates

Like nominal exchange rates, real exchange rates move over time:

- An increase in the relative price of domestic goods in terms of foreign goods is called a real **appreciation**, which corresponds to a decrease in the real exchange rate, ε.
- A decrease in the relative price of domestic goods in terms of foreign goods is called a real **depreciation**, which corresponds to an increase in the real exchange rate, ε.

From Nominal to Real Exchange Rates

Figure 18 - 4

Real and Nominal Exchange Rates Between the United States and the United Kingdom since 1970

Except for the difference in trend reflecting higher average inflation in the United Kingdom than in the United States, the nominal and the real exchange rates have moved largely together since 1970.

From Nominal to Real Exchange Rates

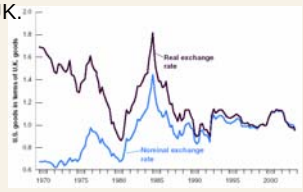
Note the two main characteristics of Figure 18 4

- While the nominal exchange rate went up during the period, the real exchange rate went down.
- The large fluctuations in the nominal exchange rate also show up in the real exchange rate.

From Nominal to Real Exchange Rates

Two things have happened since 1970.

- First, *E* has increased. The dollar has gone up in terms of pounds.
- Second, *P*/*P** has decreased. The price level has increased less in the United States than in the UK.



From Bilateral to Multilateral Exchange Rates

Table 18-2 **The Country Composition of U.S. Merchandise Trade, 2003**

	Proportion of Exports to (%)	Proportion of Imports from (%)
Canada	23	19
Mexico	13	11
Western Europe	23	21
China	4	13
Japan	7	9
Rest of Asia*	14	17
Others	11	17

* Asia, excluding Japan and China
OPEC: Organization of Petroleum Exporting Countries.

This table shows the geographic composition of U.S. trade for both exports and imports. The numbers refer only to **merchandise trade** – exports and imports of goods.

From Bilateral to Multilateral Exchange Rates

Bilateral exchange rates are exchange rates between two countries. **Multilateral exchange rates** are exchange rates between several countries.

For example, to measure the average price of U.S. goods relative to the average price of goods of U.S. trading partners, we use the U.S. share of import and export trade with each country as the weight for that country, or the **multilateral real U.S. exchange rate**.

From Bilateral to Multilateral Exchange Rates

Equivalent names for the relative price of foreign goods vis á vis U.S. goods are:

The **real multilateral U.S. exchange rate.**

The **U.S. trade weighted real exchange rate.**

The **U.S. effective real exchange rate.**

From Nominal to Real Exchange Rates

Figure 18 - 5

The U.S. Multilateral Real Exchange Rate since 1973

The large real appreciation of U.S. goods in the first half of the 1980s was followed by a large real depreciation in the second half of the 1980s. This large swing in the 1980s is sometimes called the "dance of the dollar."

18-2 Openness in Financial Markets

The purchase and sale of foreign assets implies buying or selling foreign currency—sometimes called **foreign exchange**.

Openness in financial markets allows:

- Financial investors to diversify—to hold both domestic and foreign assets and speculate on foreign interest rate movements.
- Allows countries to run trade surpluses and deficits. A country that buys more than it sells must pay for the difference by borrowing from the rest of the world.

The Balance of Payments

The **balance of payments** account summarizes a country's transactions with the rest of the world.

Transactions **above the line** are **current account** transactions. Transactions **below the line** are **capital account** transactions.

The current account balance and the capital account balance should be equal, but because of data gathering errors they don't. For this reason, the account shows a **statistical discrepancy**.

The Balance of Payments

Table 18-2 **The U.S. Balance of Payments, 2003, in Billions of U.S. Dollars**

Current Account		
Exports	1,018	
Imports	1,508	
Trade balance (deficit = –) (1)		-490
Investment income received	275	
Investment income paid	258	
Net investment income (2)		17
Net transfers received (3)		-68
Current account balance (deficit = -) (1) + (2) + (3)		-541
Capital Account		
Increase in foreign holdings of U.S. assets (4)	856	
Increase in U.S. holdings of foreign assets (5)	277	
Capital account balance (deficit = -) (4) – (5)		579
Statistical discrepancy		-38

The Current Account

The transactions above the line record payments to and from the rest of the world are called **current account** transactions:

- The first two lines record the exports and imports of goods and services.
- U.S. residents receive **investment income** on their holdings of foreign assets and vice versa.
- Countries give and receive foreign aid; the net value is recorded as **net transfers received.**

The Current Account

The sum of net payments in the **current account balance** can be positive, in which case the country has a **current account surplus**, or negative—a **current account deficit**.

The Capital Account

Transactions below the line are called **capital account** transactions.

The **capital account balance**, also known as **net capital flows** can be positive (negative) if foreign holdings of U.S. assets are greater (less) than U.S. holdings of foreign assets, in which case there is a **capital account surplus (deficit).**

The numbers for current and capital account transactions are constructed using different sources; although they should give the same answers, they typically do not. The difference between the two is call the **statistical discrepancy.**

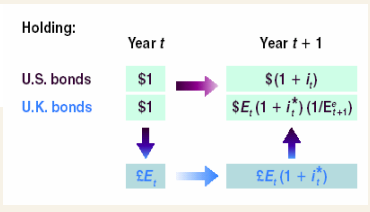
The Choice Between Domestic and Foreign Assets

The decision whether to invest abroad or at home depends not only on interest rate differences, but also on your expectation of what will happen to the nominal exchange rate.

The Choice Between Domestic and Foreign Assets

Figure 18 - 6

Expected Returns from Holding 1-Year U.S. Bonds or 1-Year U.K. Bonds



Expectations, Consumption, and Investment Decisions

If both U.K. bonds and U.S. bonds are to be held, they must have the same expected rate of return, so that the following arbitrage relation must hold:

$$(1+i_t)=(E_t)(1+i^*_t)\left(\frac{1}{E^e_{t+1}}\right)$$

Rearranging the equation, we obtain the **uncovered interest parity relation**, or **interest parity condition**:

$$(1+i_t)=(1+i^*_t)\left(\frac{E_t}{E^e_{t+1}}\right)$$

Expectations, Consumption, and Investment Decisions

The assumption that financial investors will hold only the bonds with the highest expected rate of return is obviously too strong, for two reasons:

- It ignores transaction costs.
- It ignores risk.

FOCUS: GDP Versus GNP: The Example of Kuwait

Gross domestic product (GDP) is the measure that corresponds to value added domestically. **Gross national product (GNP)** corresponds to the value added by domestically owned factors of production.

Table 1 GDP, GNP, and Net Factor Payments in Kuwait, 1989-1994

Year	GDP	GNP	Net Factor Payments
1989	7,143	9,616	2,473
1990	5,328	7,560	2,232
1991	3,131	4,669	1,538
1992	5,826	7,364	1,538
1993	7,231	8,386	1,151
1994	7,380	8,321	941

All numbers are in millions of Kuwaiti dinars, with 1 dinar=$3.3 (20030

Interest Rates and Exchange Rates

The relation between the domestic nominal interest rate, the foreign nominal interest rate, and the expected rate of depreciation of the domestic currency is stated as:

$$(1+i_t)=\frac{(1+i_t^*)}{[1+(E_{t+1}^e-E_t)/E_t)]}$$

A good approximation of the equation above is given by:

$$i_t \approx i^*_t \frac{E^e_{t+1}-E_t}{E_t}$$

Interest Rates and Exchange Rates

$$i_t \approx i^*_t \frac{E^e_{t+1}-E_t}{E_t}$$

This is the relation you must remember: Arbitrage implies that the domestic interest rate must be (approximately) equal to the foreign interest rate plus the expected depreciation rate of the domestic currency.

If $E^e_{t+1} = E_t$, then $i_t = i^*_t$

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Buying Brazilian Bonds

Shouldn't you be buying Brazilian bonds with an interest rate of 36.9%?

Interest Rates and Exchange Rates

Should you hold U.K. bonds or U.S. bonds?

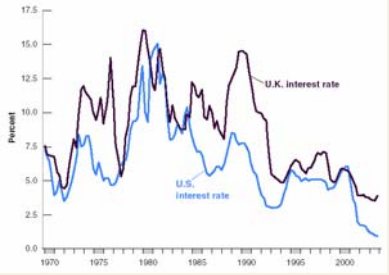
- It depends whether you expect the pound to depreciate vis á vis the dollar over the coming year.
- If you expect the pound to depreciate by more then 3.0%, then investing in U.K. bonds is less attractive than investing in U.S. bonds.
- If you expect the pound to depreciate by less than 3.0% or even to appreciate, then the reverse holds, and U.K. bonds are more attractive than U.K. bonds.

Interest Rates and Exchange Rates

Figure 18 - 7

Three-Month Nominal Interest Rates in the United States and in the United Kingdom since 1970

U.S. and U.K. nominal interest rates have largely moved together over the last 33 years.



18-3 Conclusions and a Look Ahead

We have set the stage for the study of an open economy:

- The choice between domestic goods and foreign goods depends primarily on the *real exchange rate*.
- The choice between domestic assets and foreign assets depends primarily on their relative rates of return, which depend on domestic interest rates and foreign interest rates, and on the expected depreciation of the domestic currency.

Key Terms

- openness in goods markets,
- tariffs
- quotas
- openness in financial markets
- capital controls
- openness in factor markets
- North American Free Trade Agreement (NAFTA)
- tradable goods
- real exchange rate
- nominal exchange rate
- appreciation (nominal, real)
- depreciation (nominal, real)
- fixed exchange rates
- revaluation
- devaluation
- real appreciation
- real depreciation
- merchandise trade
- bilateral exchange rate
- multilateral exchange rate
- multilateral real U.S. exchange rate
- trade-weighted real exchange rate

continued…

Key Terms

- effective real exchange rate
- foreign exchange
- balance of payments
- above the line, below the line
- current account
- investment income
- net transfers received
- current account balance
- current account surplus
- current account deficit
- capital account
- net capital flows
- capital account balance
- capital account surplus, deficit
- statistical discrepancy
- gross domestic product (GDP) versus gross national product (GNP)
- uncovered interest parity relation, or interest parity condition.