Chapter 25: The Exchange Rate

The Foreign Exchange Market

To buy goods and services produced in another country we need money of that country.

Foreign bank notes, coins, and bank deposits are called **foreign currency**.

The **foreign exchange market** is the market in which the currency of one country is exchanged for the currency of another.

What is an Exchange Rate?

Exchange rate (more specifically, Nominal Exchange Rate) is the price at which one currency exchanges for another.

Like all prices, an exchange rate is determined in a market—the foreign exchange market.

- We will be consistently using the exchange rate as the units of foreign currency per one Canadian dollar.

  For example: Mexican Pesos 12/C$1; Japanese Yen 78/C$1; US $0.77/C$1

⇒ A fall in the value of one currency in terms of another currency is called **currency depreciation**.

⇒ A rise in value of one currency in terms of another currency is called **currency appreciation**.

For example, the dollar appreciates against the Japanese yen when the ex rate rises from 78 to 100 yen per dollar.

How is the exchange rate determined?

- Demand and Supply in the foreign exchange (or forex) market.
- With many traders and no restrictions, the foreign exchange market is a *competitive market*.

Demand in the Foreign Exchange Market

Why do people buy Canadian $ in the forex market?

(i) buy Canadian produced goods and services;

(ii) they can buy Canadian assets such as bonds, stocks, and real estate;

(iii) they can keep part of their money holding in a C$ bank account.

The quantity of Canadian dollars that traders plan to buy in the foreign exchange market during a given period depends on:

1. The exchange rate
2. World demand for Canadian exports
3. Interest rates in Canada and other countries
4. The expected future exchange rate

The Law of Demand for Foreign Exchange

Other things remaining the same, the higher the exchange rate, the smaller is the quantity of Canadian dollars demanded in the foreign exchange market.

- The exchange rate influences the quantity of Canadian dollars demanded for two reasons:

1. Exports effect
2. Expected profit effect

Exports Effect

The lower the exchange rate, the greater is the value of Canadian exports, so the greater is the quantity of Canadian dollars demanded in the forex market.

Example: Mexican Peso P12=C$1 and 1 bottle of Canadian Maple syrup=C$2 (or P24)

Suppose the Canadian Dollar depreciate: from P12/C$ to P10/C$1

What can you say about the price of Maple syrup from the Canadian viewpoint?

– unchanged (still C$2 a bottle).

What can you say about the price of Maple syrup from the Mexican viewpoint?

– For Mexican, maple syrup becomes cheaper due to the depreciation of C$ (drops from P24 to P20 a bottle) → ↑ buy more maple syrup → the greater is the quantity of Canadian dollars demanded.

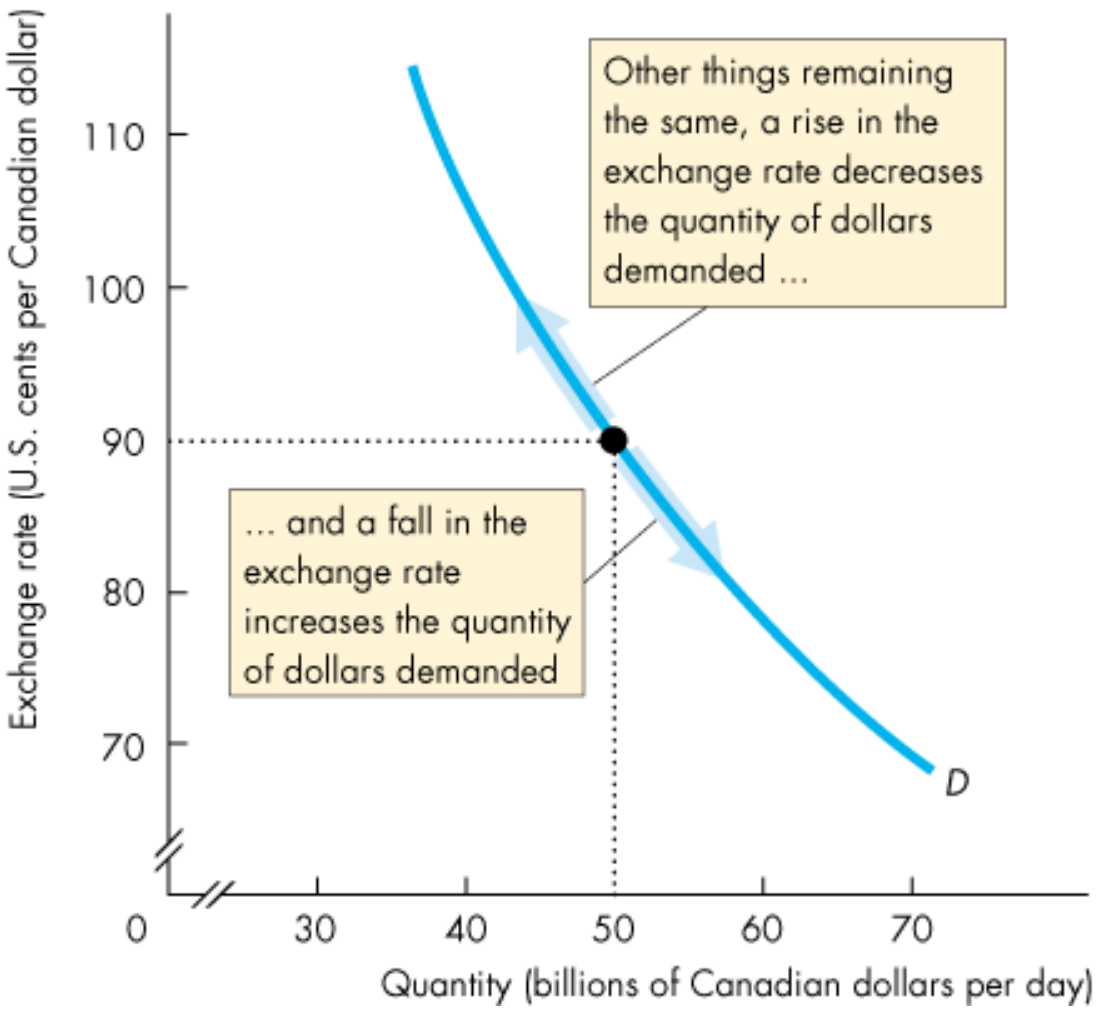
Expected Profit Effect

The larger the expected profit from holding Canadian dollars, the greater is the quantity of Canadian dollars demanded today.

But expected profit depends on the exchange rate today.

The lower today's exchange rate, other things remaining the same, the larger is the expected profit from buying Canadian dollars and the greater is the quantity of Canadian dollars demanded today.

The Demand Curve for Canadian Dollars



Supply in the Foreign Exchange Market

Why do people sell C$ and buy other currencies?

(i) buy foreign-produced goods and services (Canadian imports);

(ii) buy foreign assets;

(iii) hold part of their money in bank deposits denominated in foreign currency.

The quantity of Canadian dollars supplied in the foreign exchange market is the amount that traders plan to sell during a given time period at a given exchange rate.

This quantity depends on many factors but the main ones are:

1. The exchange rate
2. Canadian demand for imports
3. Interest rates in Canada and other countries
4. The expected future exchange rate

The Law of Supply of Foreign Exchange

Other things remaining the same, the higher the exchange rate, the greater is the quantity of Canadian dollars supplied in the foreign exchange market.

- The exchange rate influences the quantity of Canadian dollars supplied for two reasons:

1. Imports effect
2. Expected profit effect

Imports Effect

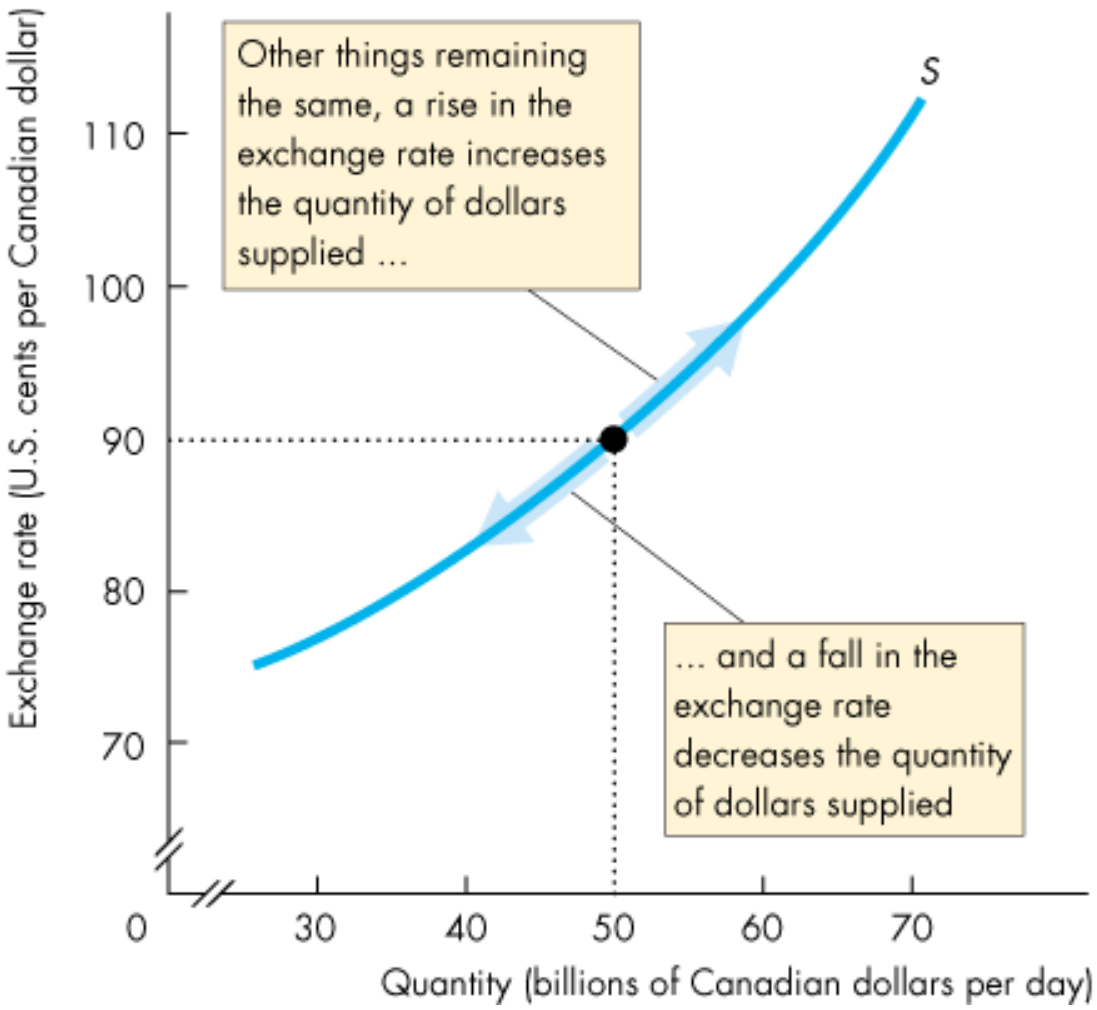
The higher the exchange rate, the lower are the prices of foreign-produced goods and services, the greater is the volume of Canadian imports, and so the greater is the quantity of Canadian dollars supplied in the foreign exchange market.

Example: Think about cross-border shopping (going to Buffalo or Detroit) when the Canadian $ is strong relative to the US $.

Expected Profit Effect

For a given expected future Canadian dollar exchange rate, the lower the current exchange rate, the greater is the expected profit from holding Canadian dollars, and the smaller is the quantity of Canadian dollars supplied on the foreign exchange market.

Supply Curve for Canadian Dollars

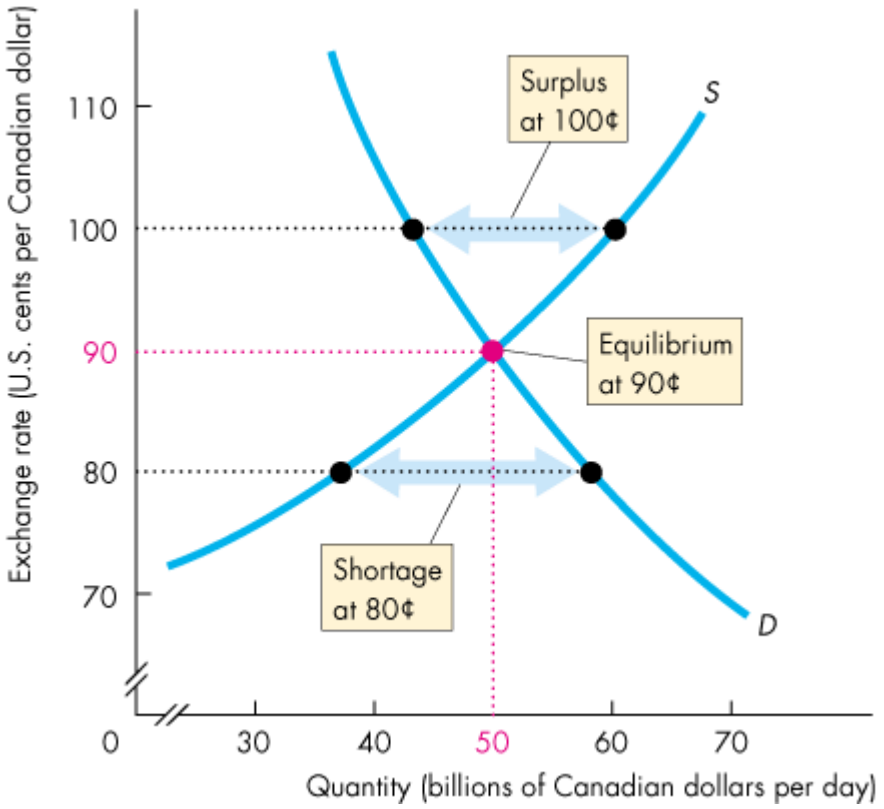


Market Equilibrium

If the exchange rate is too high, a surplus of Canadian dollars drives it down.

If the exchange rate is too low, a shortage of Canadian dollars drives it up.

The market is pulled (quickly) to the equilibrium exchange rate at which there is neither a shortage nor a surplus.



Exchange Rate Fluctuations

Changes in the Demand for Canadian Dollars (Shift in the Demand Curve)

The demand for Canadian dollars in the foreign exchange market changes when there is a change in:

- World demand for Canadian exports
- Canadian interest rate relative to the foreign interest rate
- The expected future exchange rate

World Demand for Canadian Exports

At a given exchange rate, if world demand for Canadian exports increases, the demand for Canadian dollars increases and the demand curve for Canadian dollars shifts rightward.

Canadian Interest Rate Relative to the Foreign Interest Rate

The Canadian interest rate minus the foreign interest rate is called the Canadian **interest rate differential**.

If the Canadian interest differential *rises*, the demand for Canadian dollars *increases* and the demand curve for Canadian dollars *shifts rightward*.

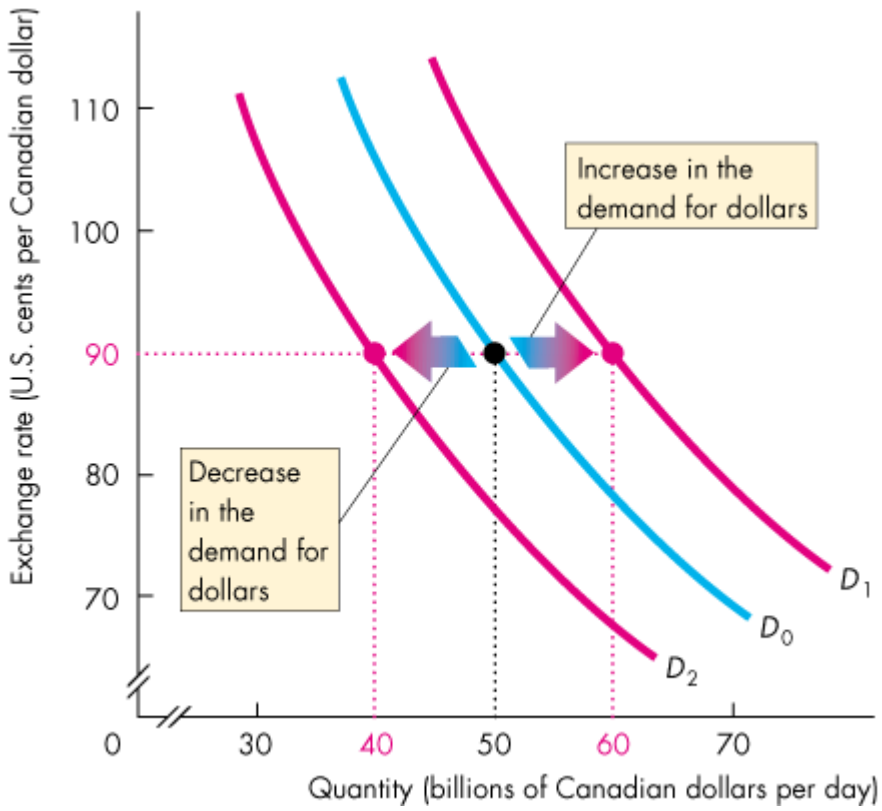
The Expected Future Exchange Rate

At a given current exchange rate, if the expected future exchange rate for Canadian dollars rises, …

… the demand for Canadian dollars increases and the demand curve for dollars shifts rightward.

How the demand curve for Canadian dollars shifts in response to changes in

- World Demand for Canadian exports
- The Canadian interest rate differential
- The expected future exchange rate



Changes in the Supply of Dollars (Shift in the Supply Curve)

A change in any influence on the quantity of Canadian dollars that people plan to sell, other than the exchange rate, brings a change in the supply of dollars.

These other influences are:

- Canadian demand for imports
- Canadian interest rates relative to the foreign interest rate
- The expected future exchange rate

Canadian Demand for Imports

At a given exchange rate, if the Canadian demand for imports increases, the supply of Canadian dollars on the foreign exchange market increases and the supply curve of Canadian dollars shifts rightward.

Canadian Interest Rate Relative to the Foreign Interest Rate

If the Canadian interest differential rises, the supply of Canadian dollars decreases and the supply curve of Canadian dollars shifts leftward.

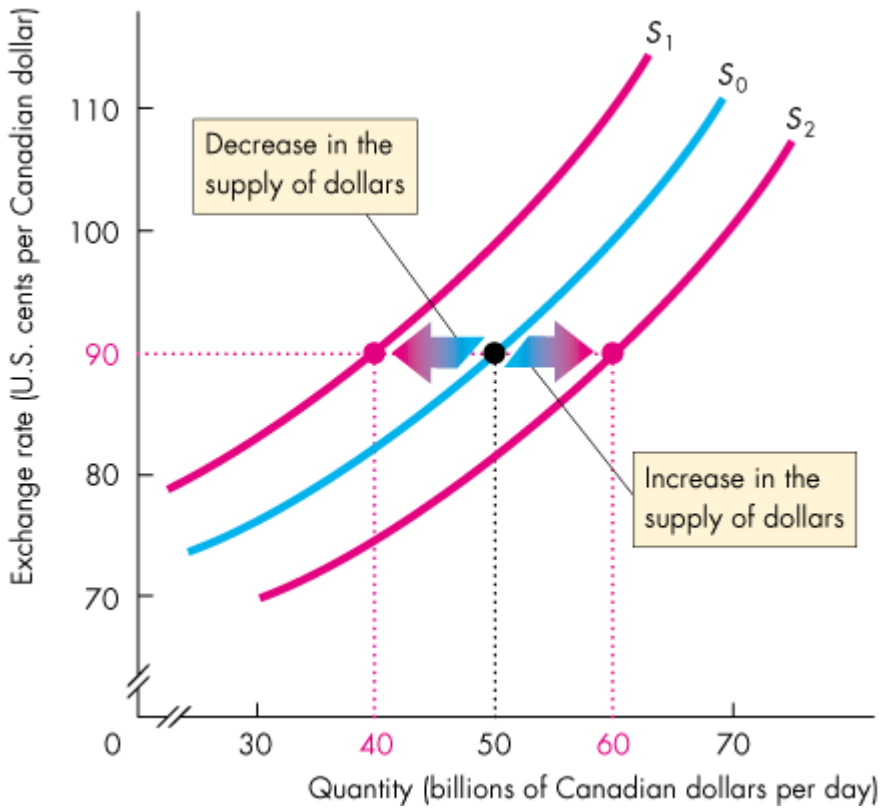
The Expected Future Exchange Rate

At a given current exchange rate, if the expected future exchange rate for Canadian dollars rises, …

… the supply of Canadian dollars decreases and the supply curve of Canadian dollars shifts leftward.

How the supply curve of Canadian dollars shifts in response to changes in

- Canadian demand for imports
- The Canadian interest rate differential
- The expected future exchange rate



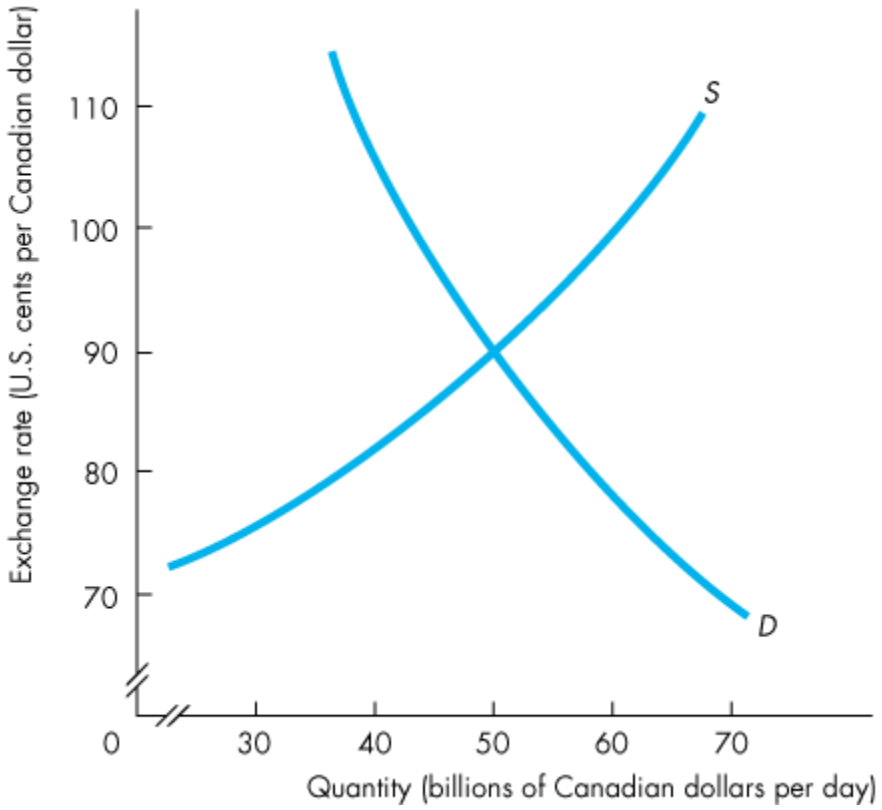
- If demand for Canadian dollars increases and supply does not change,

  (shift the demand curve rightward)

  then

  (find the new equilibrium point)

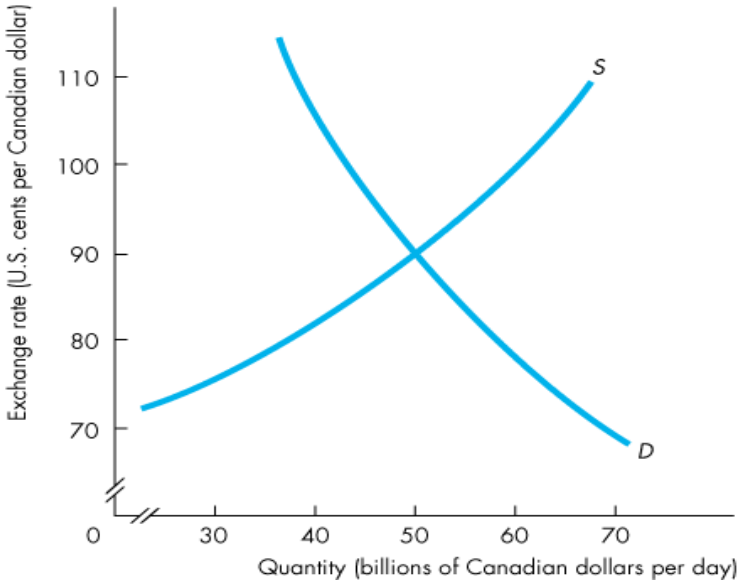
  the exchange rate rises.



- If demand for Canadian dollars decreases and supply does not change, then the exchange rate falls.

- If supply of Canadian dollars increases and demand does not change, then the exchange rate falls.

  (How? Shift the supply curve rightward, and determine the new equilibrium point).



- If supply of Canadian dollars decreases and demand does not change, the exchange rate rises.