


23  **Finance, Saving, and Investment**

**After studying this chapter, you will be able to:**

- Describe and define the flows of funds through financial markets and the financial institutions
- Explain how investment and saving along with borrowing and lending decisions are made and how these decisions interact in the market for loanable funds
- Explain how a government deficit (or surplus) influences the real interest rate, saving, and investment in the market for loanable funds
- Explain how international borrowing or lending influences the real interest rate, saving, and investment in the global market for loanable funds

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Beginning in August 2007 and running through 2008, global financial markets were in crisis.

The epicentre of the crisis was a collapse of U.S. house prices and a crash in the values of securities that finance house purchases.

Banks around the world took big losses and Wall Street investment banks Bear Stearns and Lehman Brothers disappeared.

The strains spread to Canada and all the big Canadian banks sustained heavy losses.

But the crisis was worse in the United States and Europe.

How do financial markets work? What do they do?

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 **Financial Institutions and Financial Markets**

To study the economics of financial institutions and markets we distinguish between

- Finance and money
- Physical capital and financial capital

**Finance and Money**

The study of **finance** looks at how households and firms obtain and use financial resources and how they cope with the risks that arise in this activity.

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## Financial Institutions and Financial Markets

The study of **money** looks at how households and firms use it, how much of it they hold, how banks create and manage it, and how its quantity influences the economy.

### Physical Capital and Financial Capital

*Physical capital* is the tools, instruments, machines, buildings, and other items that have been produced in the past and that are used today to produce goods and services..

The funds that firms use to buy physical capital are called **financial capital**.

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## Financial Institutions and Financial Markets

### Capital and Investment

*Physical capital* is the tools, instruments, machines, buildings, and other items that have been produced in the past and that are used today to produce goods and services..

The funds that firms use to buy physical capital are called **financial capital**.

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## Financial Institutions and Financial Markets

### Capital and Investment

**Gross investment** is the total amount spent on purchases of new capital and on replacing depreciated capital.

**Depreciation** is the decrease in the quantity of capital that results from wear and tear and obsolescence.

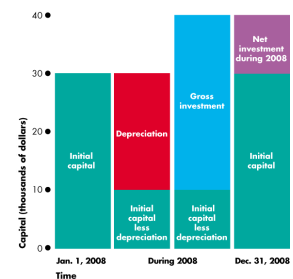
**Net investment** is the change in the quantity of capital.

$$\text{Net investment} = \text{Gross investment} - \text{Depreciation}.$$

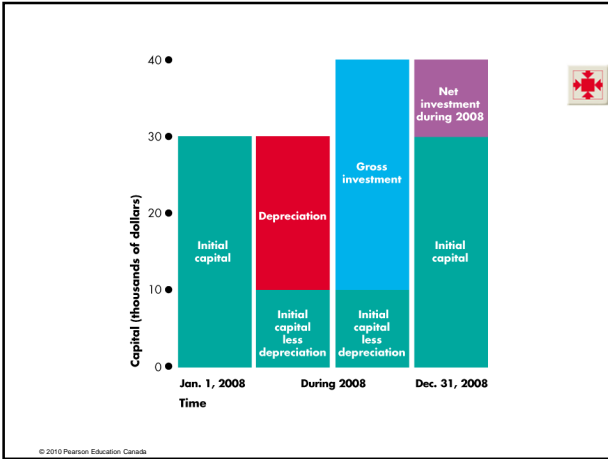
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## Financial Institutions and Financial Markets

Figure 23.1 illustrates the relationships among the capital, gross investment, depreciation, and net investment.



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## Financial Institutions and Financial Markets

### Wealth and Saving

**Wealth** is the value of all the things that people own.

**Saving** is the amount of income that is not paid in taxes or spent on consumption goods and services.

Saving increases wealth.

Wealth also increases when the market value of assets rises—called *capital gains*—and decreases when the market value of assets falls—called *capital losses*.

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## Financial Institutions and Financial Markets

### Markets for Financial Capital

Saving is the source of funds used to finance investment.

These funds are supplied and demanded in three types of financial markets:

- Loan markets
- Bond markets
- Stock markets

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## Financial Institutions and Financial Markets

### Financial Institutions

A **financial institution** is a firm that that operates on both sides of the markets for financial capital.

It is a borrower in one market and a lender in another.

Key financial institutions are

- Investment banks
- Commercial banks
- Government-sponsored mortgage lenders
- Pension funds
- Insurance companies

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## Financial Institutions and Financial Markets

### Insolvency and Illiquidity

A financial institution's **net worth** is the total market value of what it has lent minus the market value of what it has borrowed.

If net worth is positive, the institution is *solvent* and can remain in business.

But if net worth is negative, the institution is *insolvent* and go out of business.

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## Financial Institutions and Financial Markets

### Interest Rates and Asset Prices

The interest rate on a financial asset is the interest received expressed as a percentage of the price of the asset.

For example, if the price of the asset is \$25 and the interest is \$5, then the interest rate is 20 percent.

If the asset price rises (say to \$50), other things remaining the same, the interest rate falls (10 percent).

If the asset price falls (say to \$20), other things remaining the same, the interest rate rises (to 25 percent).

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## The Market for Loanable Funds

The **market for loanable funds** is the aggregate of all the individual financial markets.

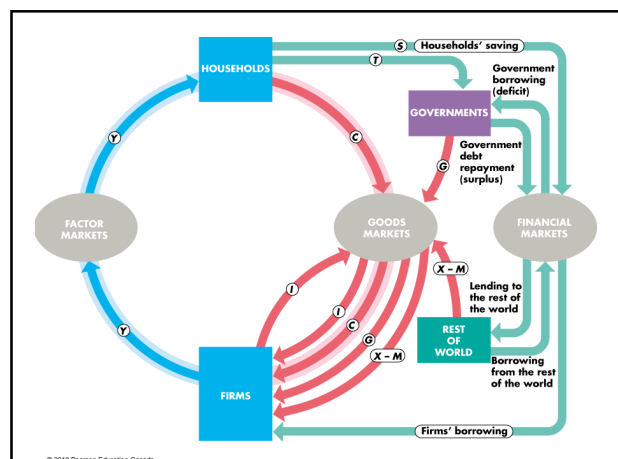
### Funds that Finance Investment

Funds come from three sources:

1. Household saving  $S$
2. Government budget surplus  $(T - G)$
3. Borrowing from the rest of the world  $(M - X)$

Figure 23.2 on the next slide illustrates the flows of funds that finance investment

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## ▶ The Market for Loanable Funds

### The Real Interest Rate

The **nominal interest rate** is the number of dollars that a borrower pays and a lender receives in interest in a year expressed as a percentage of the number of dollars borrowed and lent.

For example, if the annual interest paid on a \$500 loan is \$25, the nominal interest rate is 5 percent per year.

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## ▶ The Market for Loanable Funds

The **real interest rate** is the nominal interest rate adjusted to remove the effects of inflation on the buying power of money.

The real interest rate is approximately equal to the nominal interest rate minus the inflation rate.

For example, if the nominal interest rate is 5 percent a year and the inflation rate is 2 percent a year, the real interest rate is 3 percent a year.

The real interest rate is the opportunity cost of borrowing.

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## ▶ The Market for Loanable Funds

The **market for loanable funds** is the market in which households, firms, governments, and financial institutions borrow and lend.

We'll start by ignoring the government and the rest of the world.

### The Demand for Loanable Funds

The *quantity of loanable funds demanded* depends on

1. The real interest rate
2. Expected profit

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## ▶ The Market for Loanable Funds

### The Demand for Loanable Funds Curve

The **demand for loanable funds** is the relationship between the quantity of loanable funds demanded and the real interest rate when all other influences on borrowing plans remain the same.

Business investment is the main item that makes up the demand for loanable funds.

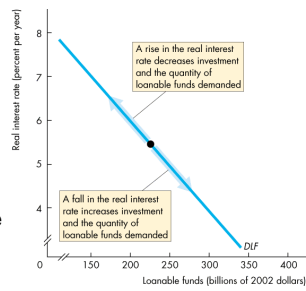
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## ▶ The Market for Loanable Funds

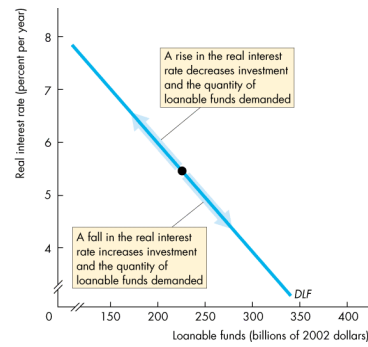
Figure 23.3 shows the demand for loanable funds curve.

A rise in the real interest rate decreases the quantity of loanable funds demanded.

A fall in the real interest rate increases the quantity of loanable funds demanded.



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## ▶ The Market for Loanable Funds

### Changes in the Demand for Loanable Funds

When the expected profit changes, the demand for loanable funds changes.

Other things remaining the same, the greater the expected profit from new capital, the greater is the amount of investment and the greater the demand for loanable funds.

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## ▶ The Market for Loanable Funds

### The Supply of Loanable Funds

The *quantity of loanable funds supplied* depends on

1. The real interest rate
2. Disposable income
3. Expected future income
4. Wealth
5. Default risk

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## ▶ The Market for Loanable Funds

### The Supply of Loanable Funds Curve

The **supply of loanable funds** is the relationship between the quantity of loanable funds supplied and the real interest rate when all other influences on lending plans remain the same.

Saving is the main item that makes up the supply of loanable funds.

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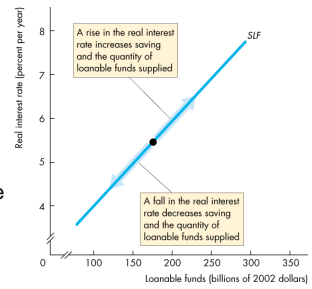
## ▶ The Market for Loanable Funds



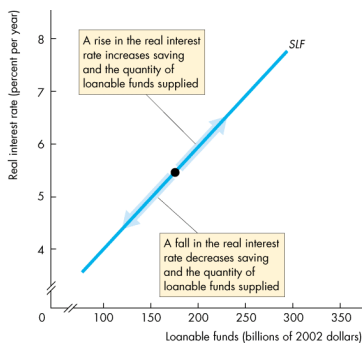
Figure 23.4 shows the supply of loanable funds curve.

A rise in the real interest rate increases the quantity of loanable funds supplied.

A fall in the real interest rate decreases the quantity of loanable funds supplied.



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## ▶ The Market for Loanable Funds

### Changes in the Supply of Loanable Funds

A change in disposable income, expected future income, wealth, or default risk changes the supply of loanable funds.

An increase in disposable income, a decrease in expected future income, a decrease in wealth, or a fall in default risk increases saving and increases the supply of loanable funds.

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## ▶ The Market for Loanable Funds

### Equilibrium in the Loanable Funds Market

The loanable funds market is in equilibrium at the real interest rate at which the quantity of loanable funds demanded equals the quantity of loanable funds supplied.

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## ▶ The Market for Loanable Funds

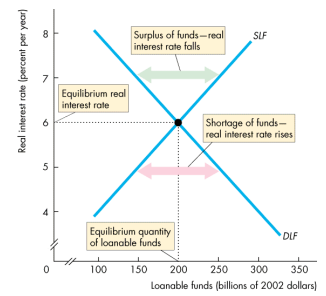


Figure 23.5 illustrates the loanable funds market.

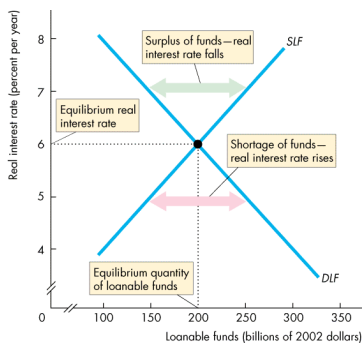
At 7 percent a year, there is a surplus of funds and the real interest rate falls.

At 5 percent a year, there is a shortage of funds and the real interest rate rises.

Equilibrium occurs at a real interest rate of 6 percent a year.



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## ▶ The Market for Loanable Funds

### Changes in Demand and Supply

Financial markets are highly volatile in the short run but remarkably stable in the long run.

Volatility comes from fluctuations in either the demand for loanable funds or the supply of loanable funds.

These fluctuations bring fluctuations in the real interest rate and in the equilibrium quantity of funds lent and borrowed.

They also bring fluctuations in asset prices.

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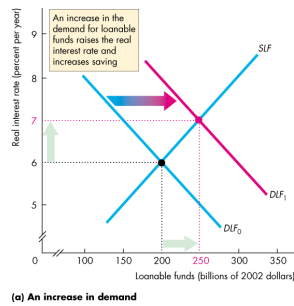
### ▶ The Market for Loanable Funds

Figure 23.6(a) illustrates an increase in the demand for loanable funds.

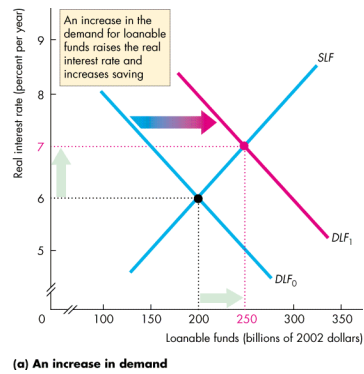
An increase in expected profits increases the demand for funds today.

The real interest rate rises.

Saving and quantity of funds supplied increases.



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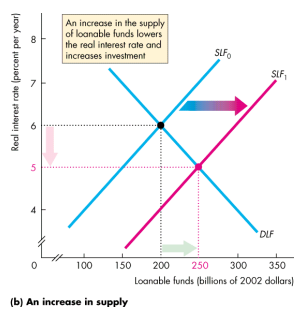
### ▶ The Market for Loanable Funds

Figure 23.6(b) illustrates an increase in the supply of loanable funds.

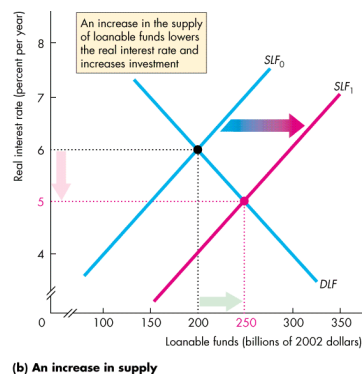
If one of the influences on saving plans changes and saving increases, the supply of funds increases.

The real interest rate falls.

Investment increases.



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## Government in the Market for Loanable Funds

Government enters the financial loanable market when it has a budget surplus or deficit.

- A government budget surplus increases the supply of funds.
- A government budget deficit increases the demand for funds.

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## Government in the Market for Loanable Funds

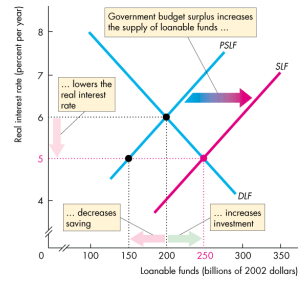
Figure 23.7(a) illustrates the effect of a government budget surplus.

A government budget surplus increases the supply of funds.

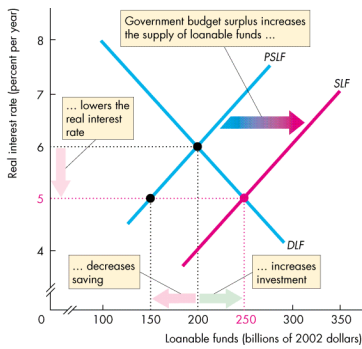
The real interest rate falls.

Investment increases.

Saving decreases.



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## Government in the Market for Loanable Funds

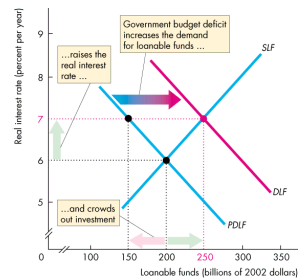
Figure 23.7(b) illustrates the effect of a government budget deficit.

A government budget deficit increases the demand for funds.

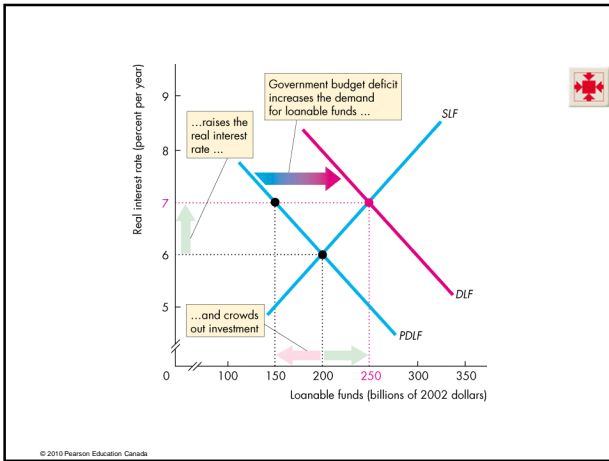
The real interest rate rises.

Saving increases.

Investment decreases.



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## Government in the Market for Loanable Funds

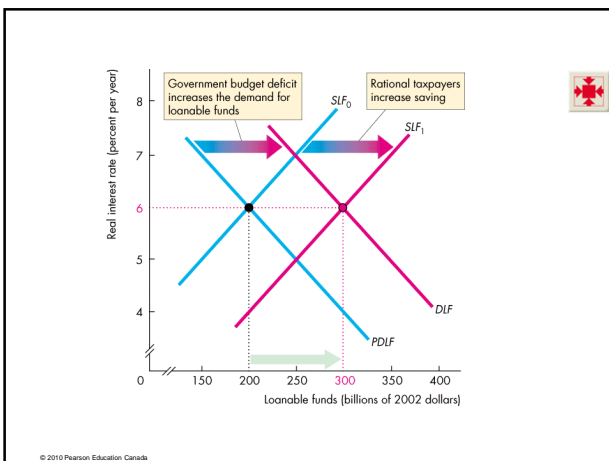
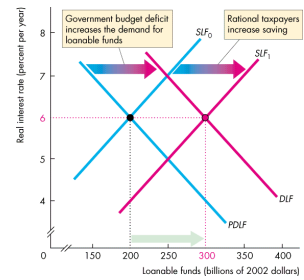
Figure 23.8 illustrates the Ricardo-Barro effect.

A budget deficit increases the demand for funds.

Rational taxpayers increase saving, which increases the supply of funds.

Crowding-out is avoided.

Increased saving finances the deficit.



## The Global Loanable Funds Market

The loanable funds market is global, not national.

Lenders want to earn the highest possible real interest rate and they will seek it by looking everywhere in the world.

Borrowers want to pay the lowest possible real interest rate and they will seek it by looking everywhere in the world.

Financial capital is mobile: It moves to the best advantage of lenders and borrowers.

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## ▶ The Global Loanable Funds Market

### International Capital Mobility

Because lenders are free to seek the highest real interest rate and borrowers are free to seek the lowest real interest rate, the loanable funds market is a single, integrated, global market.

Funds flow into the country in which the real interest rate is highest and out of the country in which the real interest rate is lowest.

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## ▶ The Global Loanable Funds Market

### International Borrowing and Lending

A country's loanable funds market connects with the global market through net exports.

If a country's net exports are *negative*, the rest of the world supplies funds to that country and the quantity of loanable funds in that country is greater than national saving.

If a country's net exports are *positive*, the country is a net supplier of funds to the rest of the world and the quantity of loanable funds in that country is less than national saving.

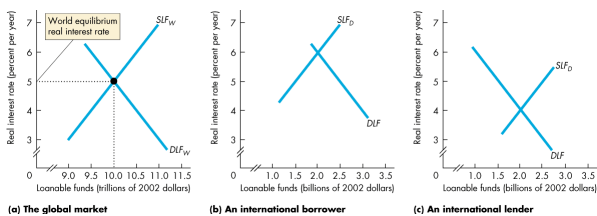
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## ▶ The Global Loanable Funds Market

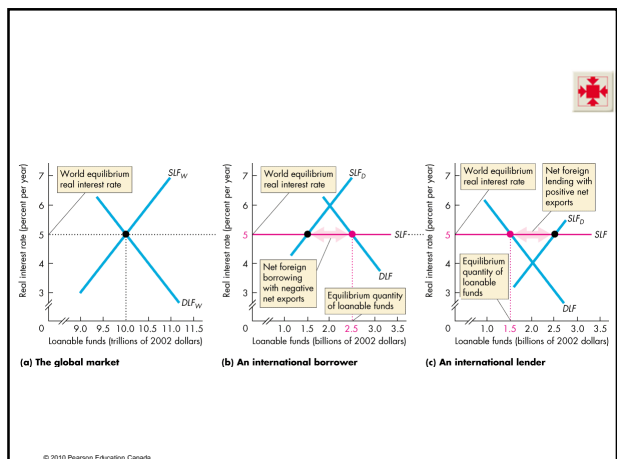


Figure 23.10(a) illustrates the global market.

The world equilibrium real interest rate is 5 percent a year.



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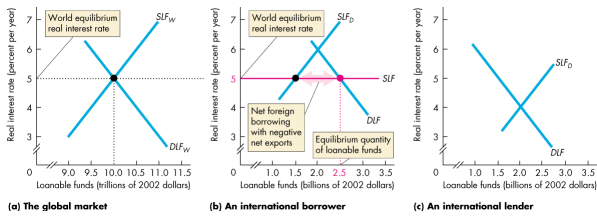


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## The Global Loanable Funds Market

In part (b), at the world real interest rate, the country has a shortage of funds.

The country has negative net exports and is a borrower.

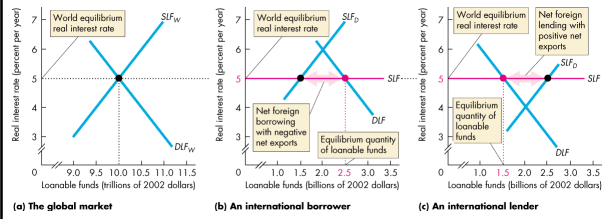


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## The Global Loanable Funds Market

In part (c), at the world real interest rate, the country has a surplus of funds.

The country has positive net exports and is a lender.



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