

International Economics

THEORY & POLICY

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Chapter 21

The Global Capital Market: Performance and Policy Problems

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Preview

- Gains from trade
- Portfolio diversification
- Players in the international capital markets
- Attainable policies with international capital markets
- Offshore banking and offshore currency trading
- Regulation of international banking
- Tests of how well international capital markets allow portfolio diversification, allow intertemporal trade and transmit information



International Capital Markets

- International capital markets are a group of markets (in London, Tokyo, New York, Singapore, and other financial centers) that trade different types of financial and physical capital (assets), including
 - ◆ stocks
 - ◆ bonds (government and corporate)
 - ◆ bank deposits denominated in different currencies
 - ◆ commodities (like petroleum, wheat, bauxite, gold)
 - ◆ forward contracts, futures contracts, swaps, options contracts
 - ◆ real estate and land
 - ◆ factories and equipment



Gains from Trade

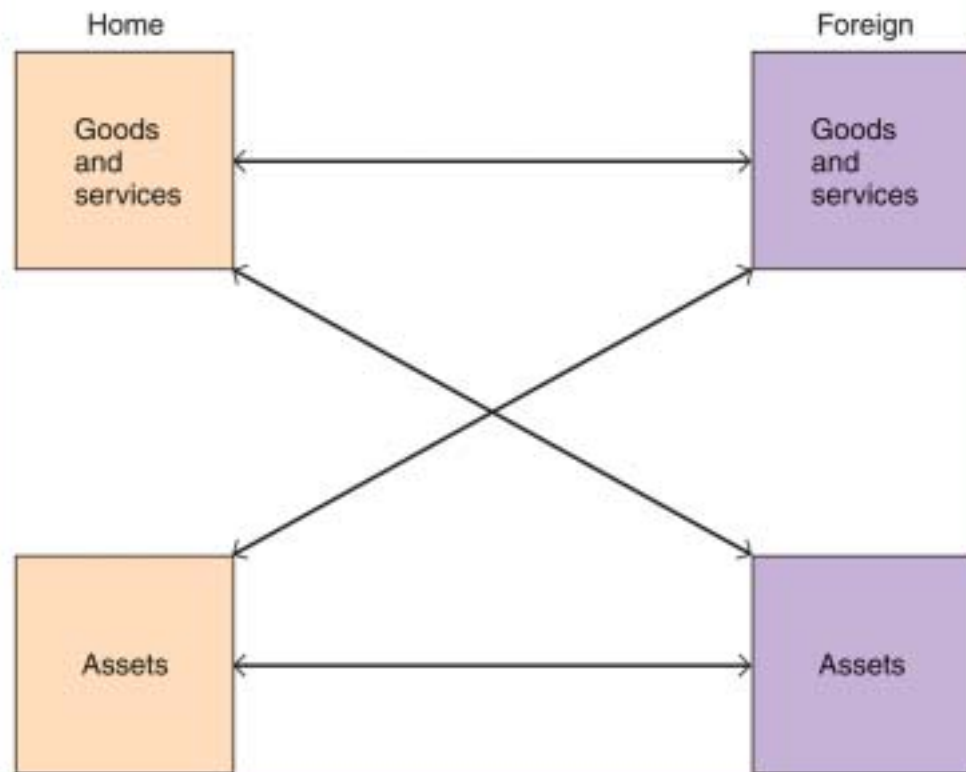
- How have international capital markets increased the gains from trade?
- When a buyer and a seller engage in a voluntary transaction, both receive something that they want and both can be made better off.
- A buyer and seller can trade
 - ◆ goods or services for other goods or services
 - ◆ goods or services for assets
 - ◆ assets for assets

Gains from Trade (cont.)

Figure 21-1

The Three Types of International Transaction

Residents of different countries can trade goods and services for other goods and services, goods and services for assets (that is, for future goods and services), and assets for other assets. All three types of exchange lead to gains from trade.





Gains from Trade (cont.)

- Theories of **international trade** describe the gains from trade of goods and services for other goods and services:
 - ◆ with a finite amount of resources and time, use those resources and time to produce what you are most productive at (compared to alternatives), then trade those products for goods and services that you want.
 - ◆ be a specialist in production, while enjoying many goods and services as a consumer through trade.



Gains from Trade (cont.)

- The theory of **intertemporal trade** describes the gains from trade of goods and services for assets, of goods and services today for claims to goods and services in the future (today's assets).
 - ◆ Savers want to buy assets (future goods and services) and borrowers want to use assets (wealth) to consume or invest in more goods and services than they can buy with current income.
 - ◆ Savers earn a rate of return on their assets, while borrowers are able to use goods and services when they want to use them: they both can be made better off.



Gains from Trade (cont.)

- The theory of **portfolio diversification** describes the gains from trade of assets for assets, of assets with one type of risk with assets of another type of risk.
 - ◆ Usually (though not in Las Vegas) people want to avoid risk: they would rather have a sure gain of wealth than invest in risky assets.
 - ◆ Economists say that investors often display **risk aversion**: they are averse to risk.
 - ◆ Diversifying or “mixing up” a portfolio of assets is a way for investors to avoid or reduce risk.



Portfolio Diversification

- Suppose that 2 countries have an asset of farmland that yields a crop, depending on the weather.
- The yield (return) of the asset is uncertain, but with bad weather the land can produce 20 tons of potatoes, while with good weather the land can produce 100 tons of potatoes.
- On average, the land will produce $1/2 * 20 + 1/2 * 100 = 60$ tons if bad weather and good weather are equally likely (both with a probability of $1/2$).
 - ◆ The *expected value* of the yield is 60 tons.



Portfolio Diversification (cont.)

- Suppose that historical records show that when the domestic country has good weather (high yields), the foreign country has bad weather (low yields).
- What could the two countries do to make sure neither will suffer from a bad potato crop?
- Sell 50% of one's assets to the other party and buy 50% of the other party's assets:
 - ◆ diversify the portfolios of assets so that both countries always achieve the portfolios' expected (average) values.



Portfolio Diversification (cont.)

- With portfolio diversification, both countries could always enjoy a moderate potato yield and not experience the vicissitudes of feast and famine.
 - ◆ If the domestic country's yield is 20 and the foreign country's yield is 100 then both countries receive:
 $50\% \cdot 20 + 50\% \cdot 100 = 60$.
 - ◆ If the domestic country's yield is 100 and the foreign country's yield is 20 then both countries receive:
 $50\% \cdot 100 + 50\% \cdot 20 = 60$.
 - ◆ If both countries are risk averse, then both countries could be made better off through portfolio diversification.
 - ◆ Differs from intertemporal trade (CA surpluses, deficits).



Classification of Assets

Claims on assets (“instruments”) are classified as either

1. Debt instruments

- ◆ Examples include bonds and bank deposits
- ◆ They specify that the issuer of the instrument must repay a *fixed* value regardless of economic circumstances.

2. Equity instruments

- ◆ Examples include stocks or a title to real estate
- ◆ They specify ownership (equity = ownership) of *variable* profits or returns, which vary according to economic conditions.



International Capital Markets

The participants:

1. Commercial banks and other depository institutions:
 - ◆ accept deposits
 - ◆ lend to governments, corporations, other banks, and/or individuals
 - ◆ buy and sell bonds and other assets
 - ◆ Some commercial banks **underwrite** stocks and bonds by agreeing to find buyers for those assets at a specified price.



International Capital Markets (cont.)

2. Non bank financial institutions: pension funds, insurance companies, mutual funds, investment banks
 - ◆ Pension funds accept funds from workers and invest them until the workers retire.
 - ◆ Insurance companies accept premiums from policy holders and invest them until an accident or another unexpected event occurs.
 - ◆ Mutual funds accept funds from investors and invest them in a diversified portfolio of stocks or other instruments.
 - ◆ Investment banks specialize in underwriting stocks and bonds and perform various types of investments.



International Capital Markets (cont.)

3. Private firms:

- ◆ Corporations may issue stock, may issue bonds or may borrow from commercial banks or other lenders to acquire funds for investment purposes.
- ◆ Other private firms may issue bonds or borrow from commercial banks.

4. Central banks and government agencies:

- ◆ Central banks sometimes intervene in foreign exchange markets.
- ◆ Government agencies issue bonds to acquire funds, and may borrow from commercial or investment banks.



International Capital Markets (cont.)

- Because of international capital markets, policy makers generally have a choice of 2 of the following 3 policies:
 1. A fixed exchange rate
 2. Monetary policy aimed at achieving domestic economic goals
 3. Free international flows of financial capital

*This is called the **monetary policy trilemma** for open economies (p. 582 and Chapter 22). It is an important reason why international financial markets have become more interconnected since the advent of floating exchange rates in 1973.*



International Capital Markets (cont.)

- A fixed exchange rate and an independent monetary policy can exist if restrictions on flows of financial capital prevent speculation and capital flight.
- Independent monetary policy and free flows of financial capital can exist when the exchange rate fluctuates.
- A fixed exchange rate and free flows of financial capital can exist if the central bank gives up its domestic goals and maintains the fixed exchange rate.



Offshore Banking

- Offshore banking refers to banking outside of the boundaries of a country.
- There are at least 4 types of offshore banking institutions, which are regulated differently:
 1. An agency office in a foreign country makes loans and transfers, but does not accept deposits, and is therefore not subject to depository regulations in either the domestic or foreign country.



Offshore Banking (cont.)

2. A **subsidiary bank** in a foreign country follows the regulations of the foreign country, not the domestic regulations of the domestic parent.
3. A **foreign branch** of a domestic bank is often subject to both domestic and foreign regulations, but sometimes may choose the more lenient regulations of the two.



Offshore Banking (cont.)

4. **International banking facilities** are foreign banks in the US that are allowed to accept deposits from and make loans to foreign customers only. They are not subject to reserve requirement regulations, interest rate ceilings and state and local taxes.
 - ◆ Bahrain, Singapore and Japan have similar regulations for offshore banks.



Offshore Currency Trading

- An offshore currency deposit is a bank deposit denominated in a currency other than the currency that circulates where the bank resides.
 - ◆ An offshore currency deposit may be deposited in a subsidiary bank, a foreign branch, a foreign bank or another depository institution located in a foreign country.
 - ◆ Offshore currency deposits are sometimes (unfortunately) referred to as eurocurrencies, because these deposits were historically made in European banks.



Offshore Currency Trading (cont.)

Offshore currency trading has grown for three reasons:

1. growth in international trade and international business
2. avoidance of domestic regulations and taxes
3. political factors (e.g., to avoid confiscation by a government because of political events)



Offshore Currency Trading (cont.)

- **Reserve requirements** are the primary example of a domestic regulation that banks have tried to avoid through offshore currency trading.
 - ◆ Depository institutions in the US and other countries are required to hold a fraction of *domestic currency* deposits on reserve at the central bank.
 - ◆ These reserves can not be lent to customers and do not interest in many countries, therefore the reserve requirement acts a tax for banks.
 - ◆ *Offshore currencies* in many countries are not subject to this requirement, and thus the total amount of deposits can earn interest if they become offshore currencies.

Balance Sheet for Bank

Assets	Liabilities + Net worth
Reserves at central bank	Deposits
Loans	Borrowed funds
-business	
-home	
-car	
-real estate	
Government and corporate bonds	Net worth = bank capital



Regulation of International Banking

- Banks fail because they do not have enough or the right kind of assets to pay for their liabilities.
 - ◆ The principal liability for commercial banks and other depository institutions is the value of deposits, and banks fail when they can not pay their depositors
 - ◆ If many loans (a type of asset) fail or if the value of assets decline in another manner, then liabilities could become greater than the value of assets and bankruptcy could result.
- In many countries there are several types of regulations to avoid bank failure.



Regulation of International Banking (cont.)

1. Deposit insurance

- ◆ insures depositors against losses up to \$100,000 in the US when banks fail
- ◆ prevents bank panics due to a lack of information: because depositors can not distinguish a good bank from bad one, it is in their interests to withdraw their funds during a panic when banks do not have deposit insurance
- ◆ creates a moral hazard for banks to take on too much risk
- ◆ **Moral hazard:** a hazard that a borrower (e.g., bank or firm) will engage in activities that are undesirable (e.g., risky investment, fraudulent activities) from the less informed lender's point of view.



Regulation of International Banking (cont.)

2. Reserve requirements

- ◆ Banks are historically required to maintain some deposits on reserve at the central bank in case of emergencies

3. Capital requirements and asset restrictions

- ◆ Higher bank capital (net worth) allows banks to protect themselves against bad loans and investments
- ◆ By preventing a bank from holding (too many) risky assets, asset restrictions reduce risky investments
- ◆ By preventing a bank from holding too much of one asset, asset restrictions also encourage diversification



Regulation of International Banking (cont.)

4. Bank examination

- ◆ Regular examination prevents banks from engaging in risky activities

5. Lender of last resort

- ◆ In the US, the Federal Reserve may lend to banks with large deposit outflows
- ◆ Prevents bank panics
- ◆ Acts as insurance for depositors and banks, in addition to deposit insurance
- ◆ Increases **moral hazard** if banks are encouraged thereby to take on too much risk; doctrine of “constructive ambiguity”



Difficulties in Regulating International Banking

1. Deposit insurance in the US covers losses up to \$100,000, but since the size of deposits in international banking is often much larger, the amount of insurance is often minimal.
2. Reserve requirements also act as a form of insurance for depositors, but countries can not impose reserve requirements on foreign currency deposits in agency offices, foreign branches, or subsidiary banks of domestic banks.



Difficulties in Regulating International Banking (cont.)

3. Bank examination, capital requirements and asset restrictions are more difficult internationally.
 - ◆ Distance and language barriers make monitoring difficult.
 - ◆ Different assets with different characteristics (e.g., risk) exist in different countries, making judgment difficult.
 - ◆ Jurisdiction is not clear in the case of subsidiary banks: if a subsidiary of an Italian bank located in London that primarily has offshore US dollar deposits, which regulators have jurisdiction?



Difficulties in Regulating International Banking (cont.)

4. No international lender of last resort for banks exists.
 - ◆ The IMF sometimes acts a “lender of last resort” for *governments* with balance of payments problems.
5. The activities of non bank financial institutions are growing in international banking, but they lack the regulation and supervision that banks have.
6. New and complicated financial instruments like derivatives and securitized assets make it harder to assess financial stability and risk.
 - ◆ A securitized asset is a small part of many combined assets with different risk characteristics.



International Regulatory Cooperation

- **Basel accords** (1988 and Basel II scheduled for 2006–2008) provide standard regulations and accounting for international financial institutions.
 - ◆ 1988 accords tried to make bank capital measurements standard across countries.
 - ◆ It developed risk-based capital requirements, where more risky assets require a higher amount of bank capital.
- **Core principles of effective banking supervision** was developed by the Basel Committee in 1997 for developing countries without adequate banking regulations and accounting standards.



Extent of International Portfolio Diversification

- In 1999, US owned assets in foreign countries represented about 30% of US capital, while foreign assets in the US was about 36% of US capital.
 - ◆ These percentages are about 5 times as large as percentages from 1970, indicating that international capital markets have allowed investors to increase diversification.
- Likewise, foreign assets and liabilities as a percent of GDP has grown for the US and other countries.

Extent of International Portfolio Diversification (cont.)

TABLE 21-1 Gross Foreign Assets and Liabilities of Selected Industrial Countries (percent of GDP)

		1983	1993	2003
Australia	Assets	13	33	68
	Liabilities	52	89	136
Canada	Assets	34	49	95
	Liabilities	70	90	93
France	Assets	40	69	165
	Liabilities	45	78	172
Germany	Assets	38	66	148
	Liabilities	31	55	139
Italy	Assets	23	43	102
	Liabilities	27	54	111
Netherlands	Assets	94	150	374
	Liabilities	73	134	384
United Kingdom	Assets	152	208	352
	Liabilities	136	203	357
United States	Assets	29	45	70
	Liabilities	25	49	96

Source: Philip R. Lane and Gian Maria Milesi-Ferretti, "Financial Globalization and Exchange Rates." Photocopy, Trinity College, Dublin and IMF, June 2004.



Extent of International Portfolio Diversification (cont.)

- Still, some economists argue that it would be optimal if investors diversified more by investing more in foreign assets, avoiding “home bias” of portfolios.



Extent of International Intertemporal Trade

- If some countries borrow for investment projects (for future production and consumption) while others lend to these countries, then national saving and investment levels should not be highly correlated.
 - ◆ Recall that national saving – investment = current account
 - ◆ Some countries should have large current account surpluses as they save a lot and lend to foreign countries.
 - ◆ Some countries should have large current account deficits as they borrow a lot from foreign countries.
- In reality, national saving and investment levels are highly correlated.

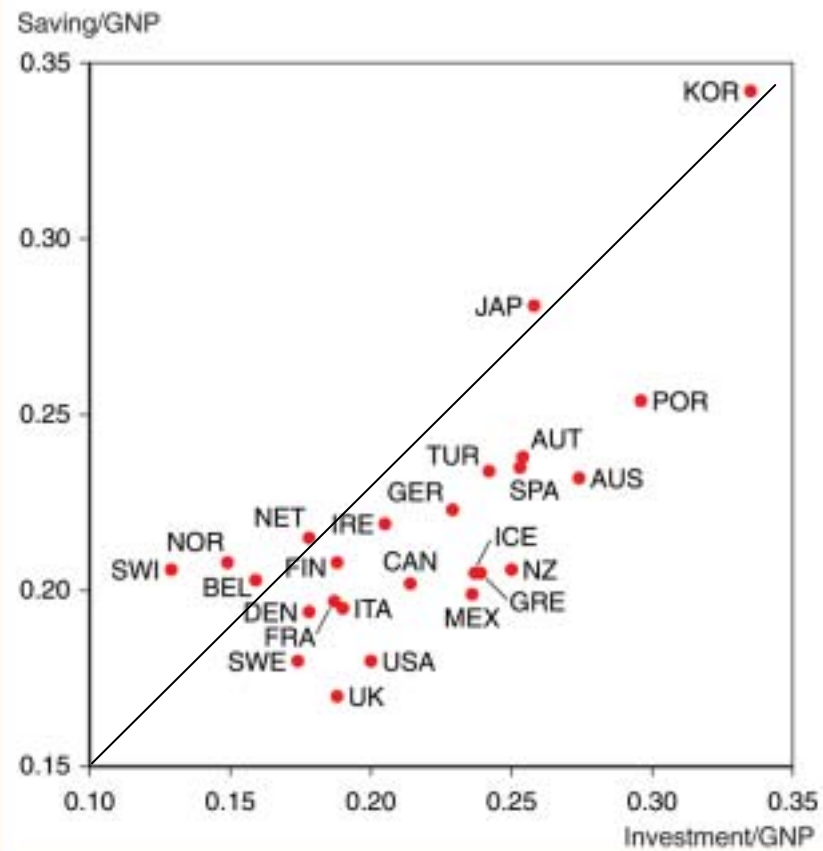
Extent of International Intertemporal Trade (cont.)

Figure 21-2

Saving and Investment Rates for 25 Countries, 1990–2001 Averages

OECD countries' saving and investment ratios to GNP tend to be positively related.

Source: World Bank, *World Development Indicators*.





Extent of International Intertemporal Trade (cont.)

- Are international capital markets unable to allow countries to engage in much intertemporal trade?
- Not necessarily: factors that generate a high saving rate, such as rapid growth in production and income, may also generate a high investment rate.
- Governments may also enact policies to avoid large current account deficits or surpluses.



Extent of Information Transmission and Financial Capital Mobility

- We should expect that interest rates on offshore currency deposits and those on domestic currency deposits within a country should be the same if
 - ◆ the two types of deposits are treated as perfect substitutes,
 - ◆ financial capital moves freely and
 - ◆ international capital markets are able to quickly and easily transmit information about any differences in rates.



Extent of Information Transmission and Financial Capital Mobility (cont.)

- In fact, differences in interest rates have approached zero as financial capital mobility has grown and information processing has become faster and cheaper through computers and telecommunications.

Extent of Information Transmission and Financial Capital Mobility (cont.)



Figure 21-3

Comparing Onshore and Offshore Interest Rates for France

The difference between the London and Paris interest rates on French-currency deposits has approached zero as international capital mobility has grown.

Source: Datastream, monthly data.



Extent of Information Transmission and Financial Capital Mobility (cont.)

- If assets are treated as perfect substitutes, then we expect interest parity to hold on average:

$$R_t - R_t^* = (E_{t+1}^e - E_t) / E_t$$

- Under this condition, the interest rate difference is the market's forecast of expected changes in the exchange rate.
 - ◆ If we replace expected exchange rates with actual future exchange rates, we can test how well the market predicts exchange rate changes.
 - ◆ But interest rate differentials fail to predict large swings in actual exchange rates and even fail to predict which direction actual exchange rates change.



Extent of Information Transmission and Financial Capital Mobility (cont.)

- Given that there are few restrictions on financial capital in most major countries, does this mean that international capital markets are unable to process and transmit information about interest rates?
- Not necessarily: if assets are imperfect substitutes then $R_t - R^*_t = (E^e_{t+1} - E_t)/E_t + \rho_t$
 - ◆ Interest rate differentials are associated with exchange rate changes and with risk premiums that change over time.
 - ◆ Changes in risk premiums may drive changes in exchange rates rather than interest rate differentials.



Extent of Information Transmission and Financial Capital Mobility (cont.)

$$R_t - R_t^* = (E_{t+1}^e - E_t) / E_t + \rho_t$$

- Since both expected changes in exchange rates and risk premiums are functions of expectations and since expectations are unobservable,
 - ◆ it is difficult to test if international capital markets are able to process and transmit information about interest rates.



Exchange Rate Predictability

- In fact, it is hard to predict exchange rate changes over short horizons based on money supply growth, government spending growth, GDP growth and other “fundamental” economic variables.
 - ◆ The best prediction for tomorrow’s exchange rate appears to be today’s exchange rate, regardless of economic variables.
 - ◆ But over long time horizons (more than 1 year) economic variables do better at predicting actual exchange rates.



Summary

1. Gains from trade of goods and services for other goods and services are described by the theory of comparative advantage.
2. Gains from trade of goods and services for assets are described by the theory of intertemporal trade.
3. Gains from trade of assets for assets are described by the theory of portfolio diversification.
4. Policy makers can only choose 2 of the following: a fixed exchange rate, a monetary policy for domestic goals, free international flows of financial capital.



Summary (cont.)

5. Several types of offshore banks deal in offshore currency trading, which developed as international trade has grown and as banks tried to avoid domestic regulations.
6. Domestic banks are regulated by deposit insurance, reserve requirements, capital requirements, restrictions on assets, and bank examinations. The central bank also acts as a lender of last resort.
7. International banking is generally not regulated in the same manner as domestic banking, and there is no international lender of last resort.



Summary (cont.)

8. As international capital markets have developed, diversification of assets across countries has grown and differences between interest rates on offshore currency deposits and domestic currency deposits within a country has shrunk.
9. If foreign and domestic assets are perfect substitutes, then interest rates in international capital markets do not predict exchange rate changes well.
10. Even economic variables do not predict exchange rate changes well in the short run.