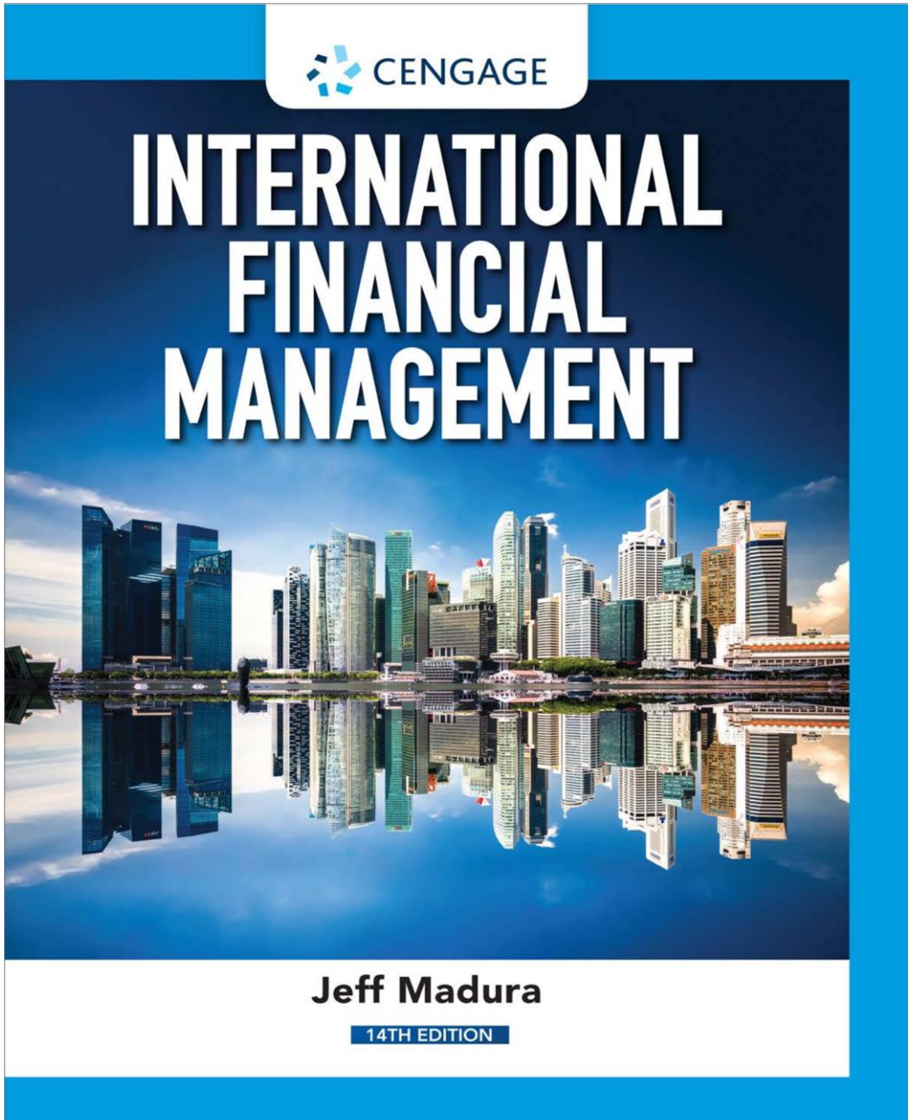
INTERNATIONAL FINANCIAL MANAGEMENT



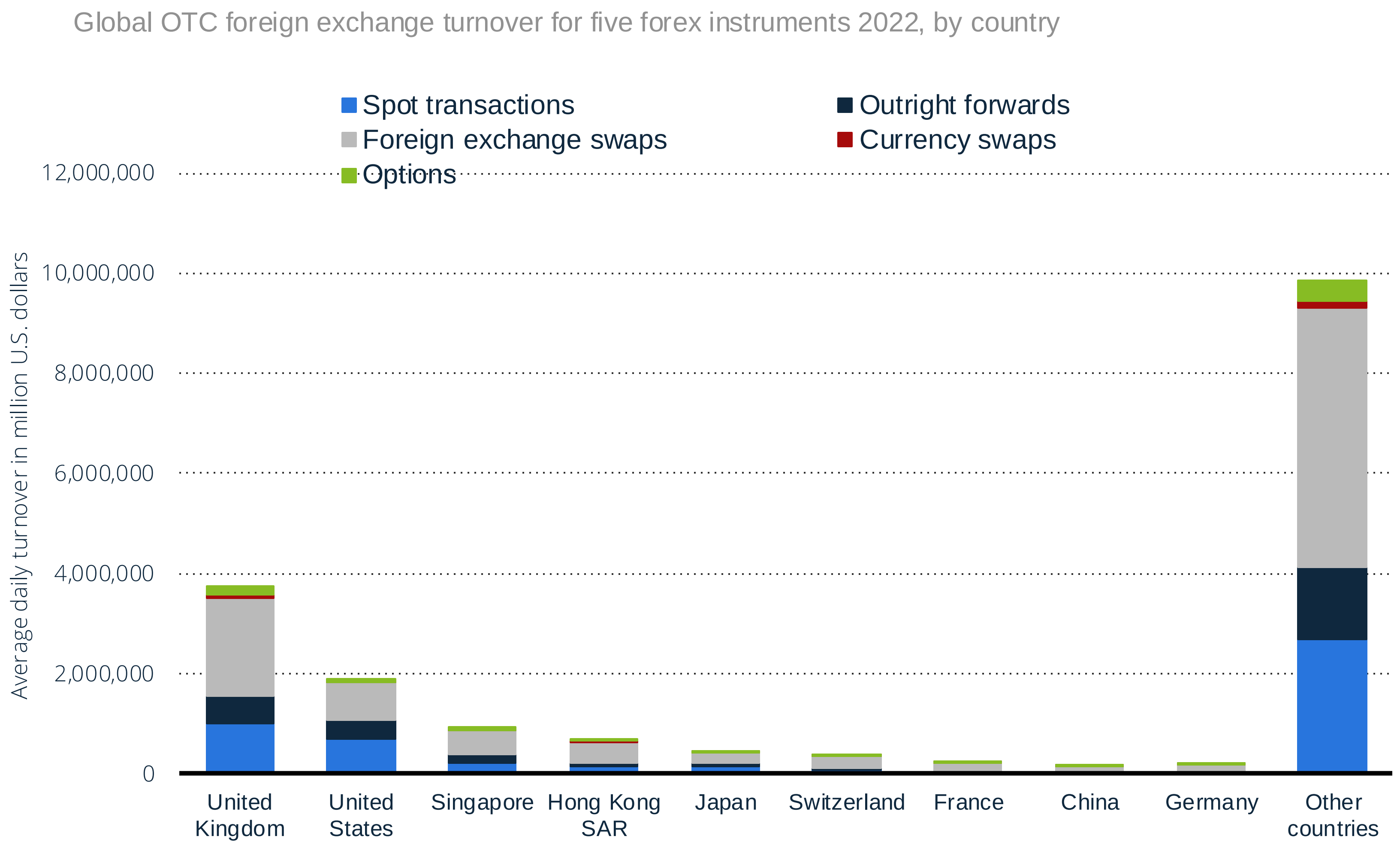
CHAPTER 2 INTERNATIONAL FINANCIAL MARKETS

Lecture Objectives

Describe the background and corporate use of the following International Financial Markets

- Foreign exchange market
- International money market
- International credit market
- International bond market
- International stock market

Average daily turnover of over the counter (OTC) foreign exchange transactions and derivatives worldwide in 2022, by country and instrument (in million U.S. dollars)



Foreign Exchange Market

- Allows for the exchange of one currency for another.

Exchange rate specifies the rate at which one currency can be exchanged for another.

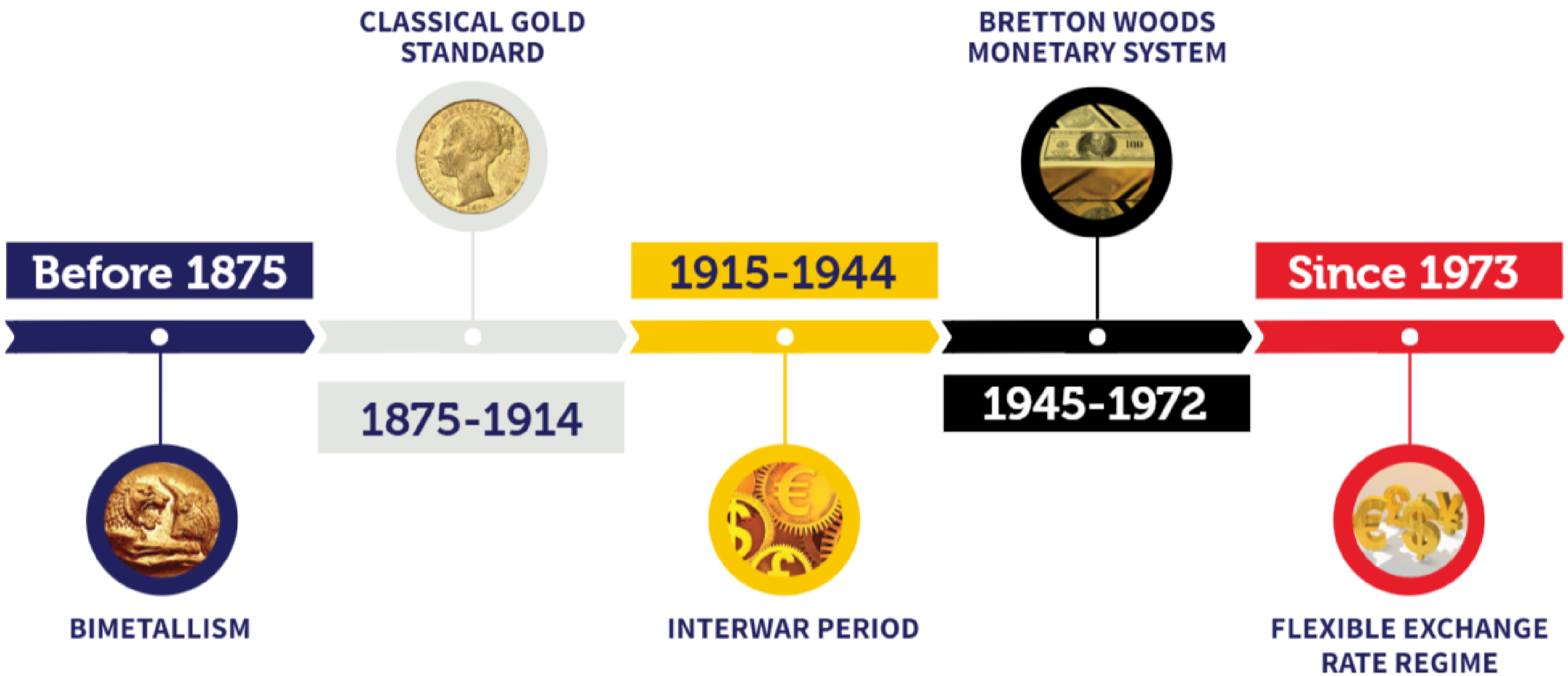
History of Foreign Exchange

- Gold Standard(1876 – 1914)

Each currency was convertible into gold at a specified rate. When World War I began in 1914, the gold standard was suspended.

- Agreements on Fixed Exchange Rates
  - Bretton Woods Agreement 1944 – 1971
  - Smithsonian Agreement 1971 – 1973
- Floating Exchange Rate System

Widely traded currencies were allowed to fluctuate in a accordance with market forces.


CLASSICAL GOLD STANDARD
BRETTON WOODS MONETARY SYSTEM
Before 1875
1915-1944
Since 1973
1875-1914
1945-1972
BIMETALLISM
INTERWAR PERIOD
FLEXIBLE EXCHANGE RATE REGIME

Foreign Exchange Market

Foreign Exchange Quotations

Direct versus Indirect quotations at one point in time

- **Direct Quotation** is the domestic currency price of one unit of the foreign currency.

  Example: 1 euro = x dollars

- **Indirect Quotation** is the foreign currency price of one unit of the domestic currency.

  Example: 1 dollar = x euro

  Indirect quotation = 1/ Direct quotation

Measuring Exchange Rate Movements

- **Depreciation:** *decline in a currency's value*
- **Appreciation**: *increase in a currency's value*
- *Comparing foreign currency spot rates over two points in time, S và* S_{t-1}

$$\text{Percent } \Delta \text{ in foreign currency value} = \frac{S - S_{t-1}}{S_{t-1}}$$

- A positive percent change indicates that the currency has **appreciated**. A negative percent change indicates that it has **depreciated.**

How Exchange Rate Movements and Volatility are measured?

	Value of Canadian Dollar (C$)	Monthly % Change in C$	Value of Euro	Monthly % Change in Euro
Jan. 1	$0.70	—	$1.18	—
Feb. 1	$0.71	+1.43%	$1.16	−1.69%
March 1	$0.70	−0.99%	$1.15	−0.86%
April 1	$0.70	−0.85%	$1.12	−2.61%
May 1	$0.69	−0.72%	$1.11	−0.89%
June 1	$0.70	+043%	$1.14	+2.70%
July 1	$0.69	−1.29%	$1.17	+2.63%
Standard deviation of monthly changes		1.04%		2.31%

Foreign Exchange Quotations

Foreign Exchange Quotations (continued)

- **Direct versus Indirect exchange rate over time**
  - Exhibit 3.1 demonstrates that the indirect exchange rate is the inverse of the direct exchange rate and also shows relationship between direct exchange rate and indirect exchange rate.
  - When the euro is **appreciating** against the dollar (based on an upward movement of the direct exchange rate of the euro), the indirect exchange rate of the euro is declining.
  - When the euro is **depreciating** (based on a downward movement of the direct exchange rate) against the dollar, the indirect exchange rate is rising.

Exhibit 3.1: Direct and Indirect Exchange Rate Quotations

(1) Currency	(2) Direct Quotation (dollars per unit) At Start of Period	(3) Indirect Quotation (units per dollar) At Start of Period	(4) Direct Quotation at End of Period	(5) Indirect Quotation at End of Period
Canadian dollar	$.66	1.51	$0.70	1.43
Euro	$1.031	0.97	$1.064	0.94
Japanese yen	$0.009	111.11	$0.0097	103.09
Mexican peso	$0.12	8.33	$0.11	9.09
Swiss franc	$0.62	1.61	$0.67	1.49
U.K. pound	$1.50	0.67	$1.60	0.62

Exhibit 3.2: Relationship over time between the Euro’s Direct and Indirect Exchange Rates

Foreign Exchange Market

Foreign Exchange Quotations (continued)

- Most currencies are quoted in **European terms**, menaing the U.S. dollar is priced in terms of the foreign currency (an indirect quote from the U.S. perspective) (Ex: price of 1 USD in terms of VND)
- However, by convention, it is standard practive to price certain currencies in terms of the U.S. dollar, i.e. **American terms**. American terms are a direct quote form the U.S. perspective (Ex: AUD/USD, NZD/USD, GBP/USD, EUR/USD)

Foreign Exchange Market

Foreign Exchange Quotations (continued)

- **Source of exchange rate quotations**
  - Updated currency quotations are provided for several majot currencies on Yahoo's website (finance.yahoo.com/currency).
  - Exchange rate quotations are also povided by many other online sources, including oanda.com.

Foreign Exchange Market

What is a point and a pip?

- A point is one-hundedth of a cent or a penny and a pip is one-tenth of a point.
- If the exchange rate is 1.2545-1.2585, this can be expressed as 45-85 and 1.25 is called the ”big number"
- A **pip** is the smallest price increment in FX trading
  - FX rates are quoted to the fourth decimal point, or 0.0001
  - JPY to the second decimal point, or 0.01
  - The most liquid currencies trade at less than 10 pips

Foreign Exchange Market

- Cross-exchange rate is an exchange rate between a currency pair where neither currency is the U.S. dollar.
- Currency against currency trade is when a customer wants to trade out a nondollar currency for another nondollar currency. For example, a customer wants to trade out of British pounds into Swiss francs.
- We can use this simple formula to calculate the cross-rate. Remember, this formula is not applicable all the time. It depends on the way the exchange rates are quoted.

$$A/B = A/C \div B/C$$

$$CHF/AUD = CHF/USD \div AUD/USD$$

Foreign Exchange Market

Foreign Exchange Quotations (continued)

Cross Exchange Rates

- **Cross exchange rate** is the amount of one foreign currency per unit of another foreign currency.
- Example:

Value of peso = \$0.11

Value of Canadian dollar = \$0.7

$$Value\ of\ peso\ in\ \text{C\$} = \frac{value\ of\ peso\ in\ \$}{value\ of\ C\$\ in\ \$} = \frac{\$0.11}{\$0.7} = \text{C\$ } 0.157$$

- **Cross exchange rates over time:** as the exchange rates of two currencies change against the U.S. dollar over time, the cross exchange rate of these currencies can change as well.

Foreign Exchange Market

Cross rates

Asia Pacific

Currencies	Australia AUD	China CNY	Hong Kong HKD	India INR	Indonesia IDR	Japan JPY	Malaysia MYR	New Zealand NZD
1 GBP £	1.8297	9.1033	10.9854	103.1460	20,303.8200	154.14	5.8563	1.9723
1 EUR €	1.5749	7.8358	9.4559	88.7850	17,476.8700	132.68	5.0409	1.6977
1 USD $	1.2932	6.4339	7.7641	72.9000	14,336.0000	108.89	4.1390	1.3939
1 AUD A$	1.0000	4.9740	6.0024	56.3590	11,093.9900	84.22	3.1999	1.0776

Data delayed at least 10 minutes, as of May 22 2021 00:58 BST.

Calculate the cross exchange rate between NZD / CNY by using U.S. dollar as vehicle currency.

Foreign Exchange Market

- Example: If JPY / AUD = 67.05 – 68.75 và GBP / AUD = 0.3590 – 0.3670 (This is price 1 AUD in JPY and GBP). Calculate the JPY/GBP cross rate.

Bid rate for GBP means – Sell JPY and Buy GBP	Ask rate for GBP means – Buy JPY and Sell GBP
(Bid rate of AUD in JPY/ Ask rate of AUD in GBP)	(Bid rate of AUD in GBP/ Ask rate of AUD in JPY)
1) Sell JPY and buy AUD – 67.05	1) Sell GBP and buy AUD – 0.3590
2) Sell AUD and buy GBP – 0.3670	2) Sell AUD and buy JPY – 68.75
67.05/0.3670 = JPY 182.6975/ GBP	68.75/.3590 = JPY 191.5042/ GBP

JPY/ GBP 182.6975 – 191.5042

This is the bid and ask rate of GBP in terms of JPY.

Foreign Exchange Market

Foreign Exchange Transactions

- The ***over-the-counter*** market is the telecommunications network where companies normally exchange one currency for another.
- **Foreign exchange dealers** serve as intermediaries in the foreign exchange market
- **Spot Market:** A foreign exchange transaction for immediate exchange is said to trade in the spot market. The exchange rate in the spot market is the spot rate.
- **Spot Market Structure:** Trading between banks occurs in the **interbank market**.

Foreign Exchange Market

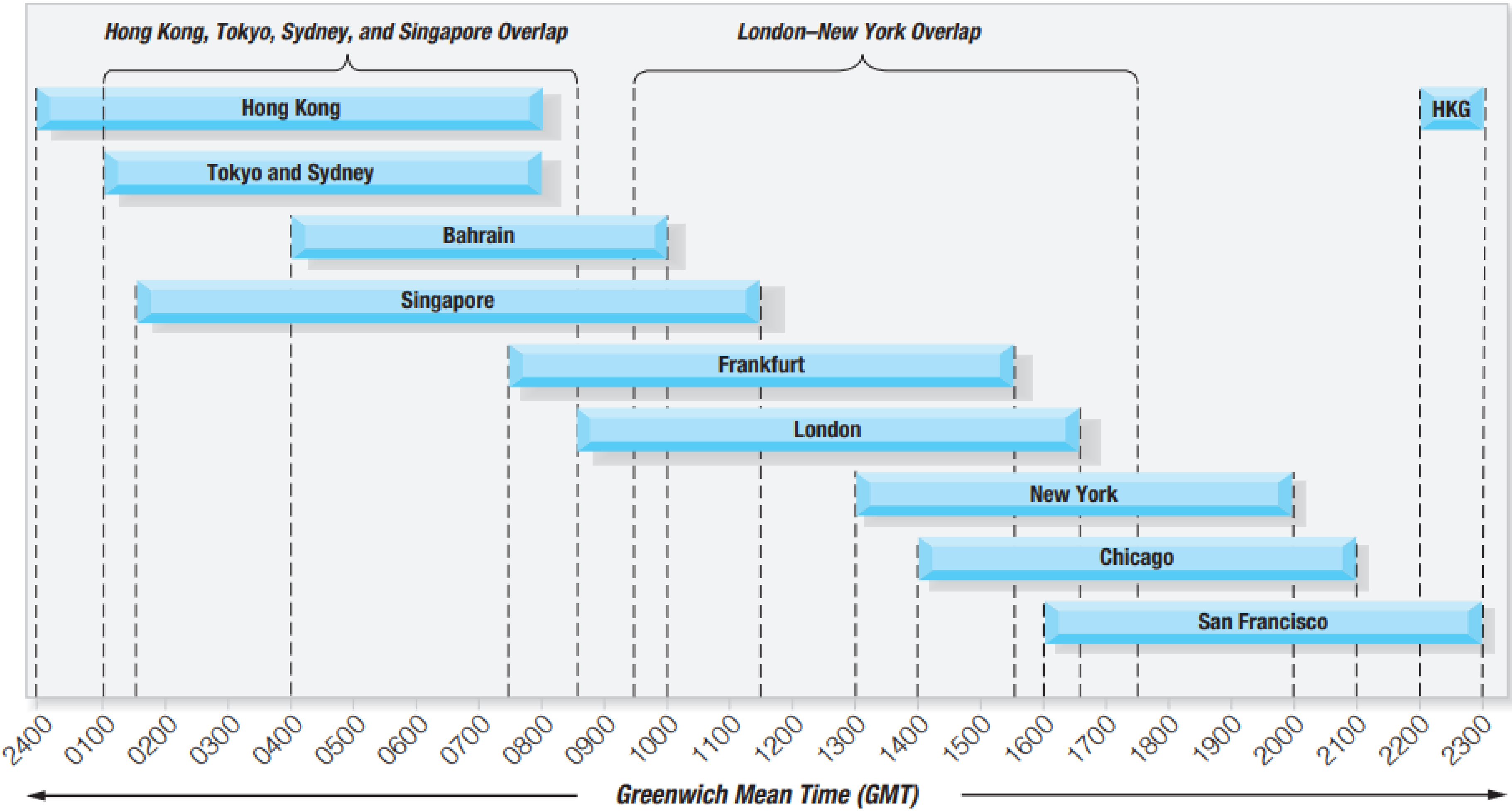
Foreign Exchange Transactions (continued)

- **Use of the dollar in spot markets:** The U.S. Dollar is the commonly accepted medium of exchange in the spot market. This is especially true in countries where the home currency is weak or subject to restrictions.

- **Spot market time zones:** Foreign exchange trading is conducted only during normal business hours in a given location. Thus, at any given time on a weekday, somewhere around the world a bank is open and ready to accommodate foreign exchange requests.

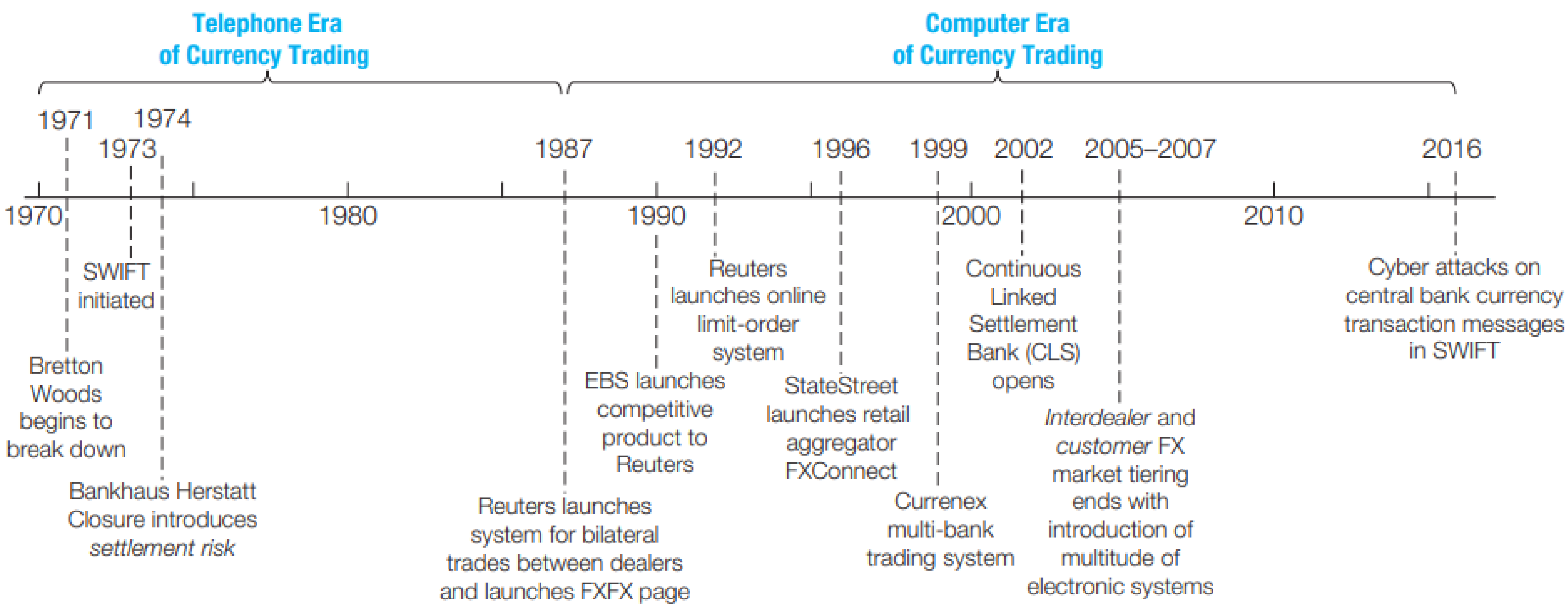
- **Spot market liquidity:** More buyers and sellers means more liquidity

EXHIBIT 5.1 **Global Currency Trading: The Trading Day**



The currency trading day literally extends 24 hours per day. The busiest time of the day, which historically was the London and New York overlap, has now started shifting farther East to Asia.

EXHIBIT 5.2 **Evolution of the Modern Currency Trading Marketplace**



Foreign Exchange Market

Foreign Exchange Transactions (continued)

- **Attributes of Banks That Provide Foreign Exchange**
  - Competitiveness of quote
  - Special relationship with the bank
  - Speed of execution
  - Advice about current market conditions
  - Forecasting advice

Foreign Exchange Market

Foreign Exchange Transactions (continued)

- **Bid/Ask Spread of Banks**
  - At any given point in time, a bank's **bid** (buy) quote for a foreign currency will be less than its **ask** (sell) quote.
  - **Bid/Ask spread of banks:** The bid/ask spread covers the bank's cost of conducting foreign exchange transactions.

Foreign Exchange Market

- **Foreign Exchange Transactions (continued)**
- **Comparison of Bid/Ask spread among currencies** (Exhibit 3.1)
    - The difference between a bid quote and an ask quote will look much smaller for currencies of lesser value. This differential can be standardized by measuring the spread as a percentage of the currency's spot rate.

$$\text{Bid / ask spread} = \frac{\text{Ask rate} - \text{Bid rate}}{\text{Ask rate}}$$

Exhibit 3.3: Computation of the Bid/Ask Spread

Currency	BID Rate	ASK Rate	$\frac{\text{ASK Rate} - \text{BID Rate}}{\text{ASK Rate}}$	=	BID/ASK Percentage Spread
British pound	\$1.52	\$1.60	$\frac{\$1.60 - \$1.52}{\$1.60}$	=	0.05 *or* 5%
Japanese yen	\$0.0070	\$0.0074	$\frac{\$0.0074 - \$0.0070}{\$0.0074}$	=	0.054 *or* 5.4%

Reference Exchange Rate at SBV Operations Centre

Date 05/25/2021
Unit of currency: VND (Viet Nam Dong)

No	Abbr	Currency	Buy	Sell
1	USD	United States Dollar	23,125	23,803
2	EUR	Euro	27,444	29,142
3	JPY	Japanese Yen	206	219
4	GBP	Great Britain Pound	31,811	33,779
5	CHF	Swiss Franc	25,047	26,596
6	AUD	Australian dollar	17,412	18,489
7	CAD	Canadian dollar	18,639	19,792

Notes: null

Calculate the bid-ask spread for the VND/USD.

Foreign Exchange Market

- **Foreign Exchange Transactions (continued)**
- **Factors That Affect the Spread**

The spread on currency quotations is influenced by the following factors:

$$Spread = f\left(\underset{+}{\text{Order costs}}, \underset{+}{\text{Inventory costs}}, \underset{-}{\text{Competition}}, \underset{-}{\text{Volume}}, \underset{+}{\text{Currency risk}}\right)$$

- **Order costs**: Costs of processing orders, including clearing costs and the costs of recording transactions.
- **Inventory costs**: Costs of maintaining an inventory of a particular currency.
- **Competition**: The more intense the competition, the smaller the spread quoted by intermediaries.

Foreign Exchange Market

Foreign Exchange Transactions (continued)

- **Factors That Affect the Spread (continued)**
  - **Volume**: Currencies that have a large trading volume are more liquid because there are numerous buyers and sellers at any given time.
  - **Currency risk**: Economic or political conditions that cause the demand for and supply of the currency to change abruptly.

Foreign Exchange Market

Derivative Contracts in the Foreign Exchange Market

- **Forward Contracts**: agreements between a foreign exchange dealer and an MNC that specifies the currencies to be exchanged, the exchange rate, and the date at which the transaction will occur.
  - The **forward rate** is the exchange rate specified by the forward contract.
  - The **forward market** is the over-the-counter market where forward contracts are traded.
  - The liquidity of the forward market varies between currencies.
  - Some currencies do not have a forward market.

Foreign Exchange Market

Derivative Contracts in the Foreign Exchange Market (continued)

- **Currency Futures Contracts**: specifies a standard volume of a particular currency to be exchanged on a specific settlement date.
  - The **Futures rate** *is the exchange rate at which an entity can purchase or sell a specified currency on the settlement date in accordance with the futures contract*
  - Distinguish between the "future exchange rate" and "future spot exchange rate"

Foreign Exchange Market

Derivative Contracts in the Foreign Exchange Market (continued)

- **Currency Futures Contracts**: specifies a standard volume of a particular currency to be exchanged on a specific settlement date.
  - The **Futures rate** *is the exchange rate at which an entity can purchase or sell a specified currency on the settlement date in accordance with the futures contract.*
- **Currency Options Contracts** currency options contracts can be classified as calls or puts.
  - A **currency call option** provides the right to buy a specific currency at a specific price within a specific period of time.
  - A **currency put option** provides the right to sell a specific currency at a specific price within a specific period of time.
- Options are more flexible than forward or futures contracts because the MNCs can choose to exercise them or not.

International Money Market

Corporations or governments need **short-term funds** denominated in a currency different from their home currency.

The international money market has grown because firms:

- May need to borrow funds to **pay for imports** denominated in a foreign currency.
- May choose to borrow in a nonlocal currency in which the **interest rate is lower** (suitable for firms expecting future receivables denominated in that currency).
- May choose to borrow in a currency that is **expected to depreciate** against their home currency

International Money Market

Origins and Development

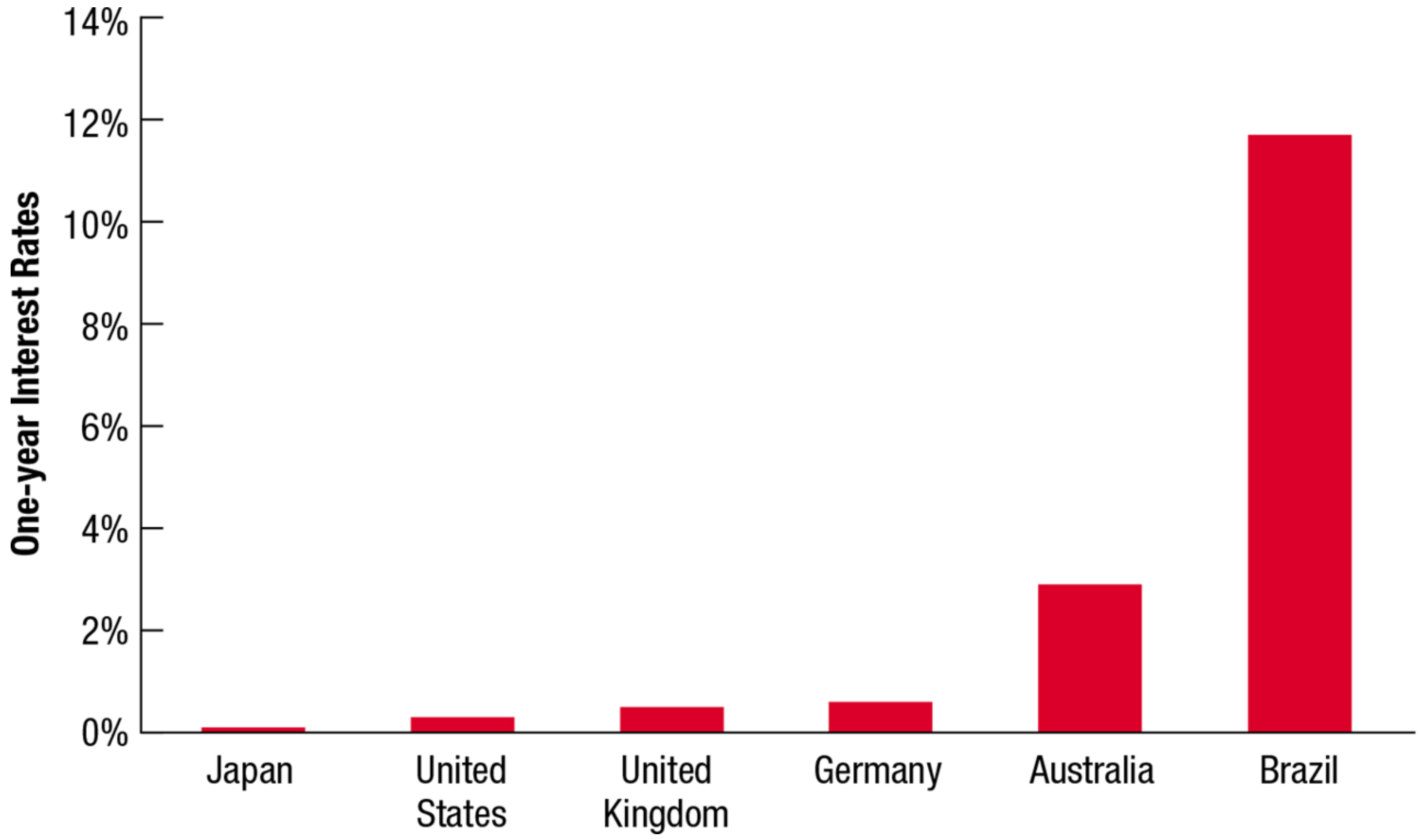
- **European Money Market:** Dollar deposits in banks in Europe and other continents are called Eurodollars or Eurocurrency. Origins of the European money market can be traced to the Eurocurrency market that developed during the 1960s and 1970s.
- **Asian Money Market:** Centered in Hong Kong and Singapore. Originated as a market involving mostly dollar-denominated deposits and was originally known as the Asian dollar market.

International Money Market

Money Market Interest Rates Among Currencies

- The money market interest rates in any particular country are dependent on the demand for short-term funds by borrowers, relative to the supply of available short-term funds that are provided by savers. (Exhibit 3.4)
- Money market rates vary due to differences in the interaction of the total supply of short-term funds available (bank deposits) in a specific country versus the total demand for short-term funds by borrowers in that country.

Exhibit 3.4: Comparison of 2015 International Money Market Interest Rates



International Money Market

Money Market Interest Rates Among Currencies

- A currency's money market is highly influenced by its respective **London Interbank Offer Rate (LIBOR)** - the interest rate most often charged for short-term loans between banks in international money market.
- When a currency's LIBOR rises, money market rates denominated in that currency tend to rise as well, just as U.S. money market rates tend to move with the federal funds rate (the interest rate charged on loans between U.S. banks).

International Money Market

Money Market Interest Rates Among Currencies (continued)

- **Global Integration of Money Market Interest Rates**
  - Money market interest rates among countries tend to be **highly correlated** over time.
  - **When economic conditions weaken**, the corporate need for liquidity declines, and corporations reduce the amount of short-term funds they wish to borrow.
  - **When economic conditions strengthen**, there is an increase in corporate expansion, and corporations need additional liquidity to support their expansion

International Money Market

Money Market Interest Rates Among Currencies (continued)

- **Risk of International Money Market Securities**
  - **International Money Market Securities** are debt securities issued by MNCs and government agencies with a short-term maturity (1 year or less).
  - Normally, these securities are perceived to be very safe from the risk of default.
  - Even if the international money market securities are not exposed to **credit risk**, they are exposed to **exchange rate risk** when the currency denominating the securities differs from the home currency of the investors.

International Credit Market

- MNCs sometimes obtain medium-term funds through term loans from local financial institutions or through the issuance of notes (medium-term debt obligations) in their local markets.
- Loans of 1 year or longer extended by banks to MNCs or government agencies in Europe are commonly called Eurocredits or **Eurocredit loans**.
- To avoid interest rate risk, banks commonly use floating rate loans with rates tied to the **London Interbank Offer Rate (LIBOR).**

International Credit Market

Syndicated Loans in the Credit Market

- Sometimes a single bank is unwilling or unable to lend the amount needed by an MNC or government agency.
- A **syndicate** of banks can be formed to underwrite the loans and the lead bank is responsible for negotiating the terms with the borrower.

International Credit Market

Regulations in the Credit Market

- **Single European Act**
  - Capital can flow freely throughout Europe.
  - Banks can offer a wide variety of lending, leasing, and securities activities in the EU.
  - Regulations regarding competition, mergers, and taxes are similar throughout the EU.
  - A bank established in any one of the EU countries has the right to expand into any or all of the other EU countries.

International Credit Market

Regulations in the Credit Market (Continued)

- **Basel Accord** — Banks must maintain a high level of capital as a percent of their assets. For this purpose, banks' assets are weighted by risk. Banks have to maintain minimum capital 4% over total assets.
- **Basel II Accord** — Attempts to account for differences in collateral among banks. In addition, this accord encourages banks to improve their techniques for controlling operational risk, which could reduce failures in the banking system. Also plans to require banks to provide more information to existing and prospective shareholders about their exposure to different types of risk.
- **Basel III Accord** — Called for new methods of estimating risk-weighted assets that would increase the level of risk-weighted assets, and therefore require banks to maintain higher levels of capital (6%). Basel III has stricter regulations to minimize risks when a crisis occurs, while helping banks improve their credit ratings and increase their competitiveness in the international market.

International Credit Market

Impact of the Credit Crisis on the Credit Market

- The credit crisis of 2008 triggered by defaults in subprime loans led to a halt in housing development, which reduced income, spending, and jobs.
- Financial institutions became cautious with their funds and were less willing to lend funds to MNCs.

International Bond Market

Foreign bonds are issued by borrower foreign to the country where the bond is placed.

Eurobonds Market

- **Eurobonds** are bonds that are sold in countries other than the country whose currency is used to denominate the bonds.
- The emergence of the Eurobond market was partially the result of the **Interest Equalization Tax (IET)** imposed by the U.S. government in 1963 to discourage U.S. investors from investing in foreign securities.
- In 1984, U.S. government abolished a withholding tax that it had formerly imposed on some non-U.S. investors and allowed U.S. corporations to issue bearer bonds directly to non-U.S. investor

International Bond Market

Eurobonds

- **Features of Eurobonds:**
  - Beerer bonds – không có hồ sơ lưu giữ liên quan đến quyền sở hữu.
  - Annual coupon payments
  - Convertible or callable
- **Denominations of Eurobonds**
  - Commonly denominated in a number of currencies
- **Secondary market**
  - Market makers are in many cases the same underwriters who sell the primary issues
- **Underwriting process**
  - Eurobonds are underwritten by a multinational syndicate of investment banks and simultaneously placed in many countries.

International Bond Market

Development of Other Bond Markets

- Bond markets have developed in Asia and South America.
- Bond market yields among countries tend to be highly **correlated** over time.
- When economic conditions **weaken**, aggregate demand for funds declines with the decline in corporate expansion.
- When economic conditions **strengthen**, aggregate demand for funds increases with the increase in corporate expansion.

International Bond Market

Risk of International Bonds

- **Interest Rate Risk** — potential for the value of bonds to decline in response to rising long-term interest rates.
- **Exchange Rate Risk** — represents the potential for the value of bonds to decline (from the investor's perspective) because the currency denominating the bond depreciates against the home currency.
- **Liquidity Risk** — represents the potential for the value of bonds to decline because there is not a consistently active market for the bonds.
- **Credit Risk** — represents the potential for default.

International Bond Market

Impact of the Greek Crisis on Bonds

- **Spring 2010**: Greece experienced weak economic conditions and a large increase in the government budget deficit.
- **Concern spread** to other European countries such as Spain, Portugal, and Ireland that had large budget deficits.
- **May 2010**: Many European countries and the IMF agreed to provide Greece with new loans.
- **Contagion Effects:**
  - Weakened some other European countries.
  - Forced creditors to recognize that government debt is not always risk free.

International Stock Markets

Issuance of Stock in Foreign Markets — Some U.S. firms issue stock in foreign markets to enhance their global image.

- Impact of the Euro: resulted in more stock offerings in Europe by U.S. and European based MNCs.

Issuance of Foreign Stock in the U.S.

- **Yankee stock offerings** — Non-U.S. corporations that need large amounts of funds sometimes issue stock in the United States
- **American Depository Receipts** (ADR) — Certificates representing bundles of stock. ADR shares can be traded just like shares of a stock.

International Stock Markets

Non-U.S. Firms Listing on U.S. Exchanges

- Non-U.S. firms have their shares listed on the New York Stock Exchange or the Nasdaq market so that the shares can easily be traded in the secondary market.
- Effect of Sarbanes-Oxley Act on Foreign Stock Listings — Many non-U.S. firms decided to place new issues of their stock in the United Kingdom instead of in the United States so that they would not have to comply with the law.

International Stock Markets

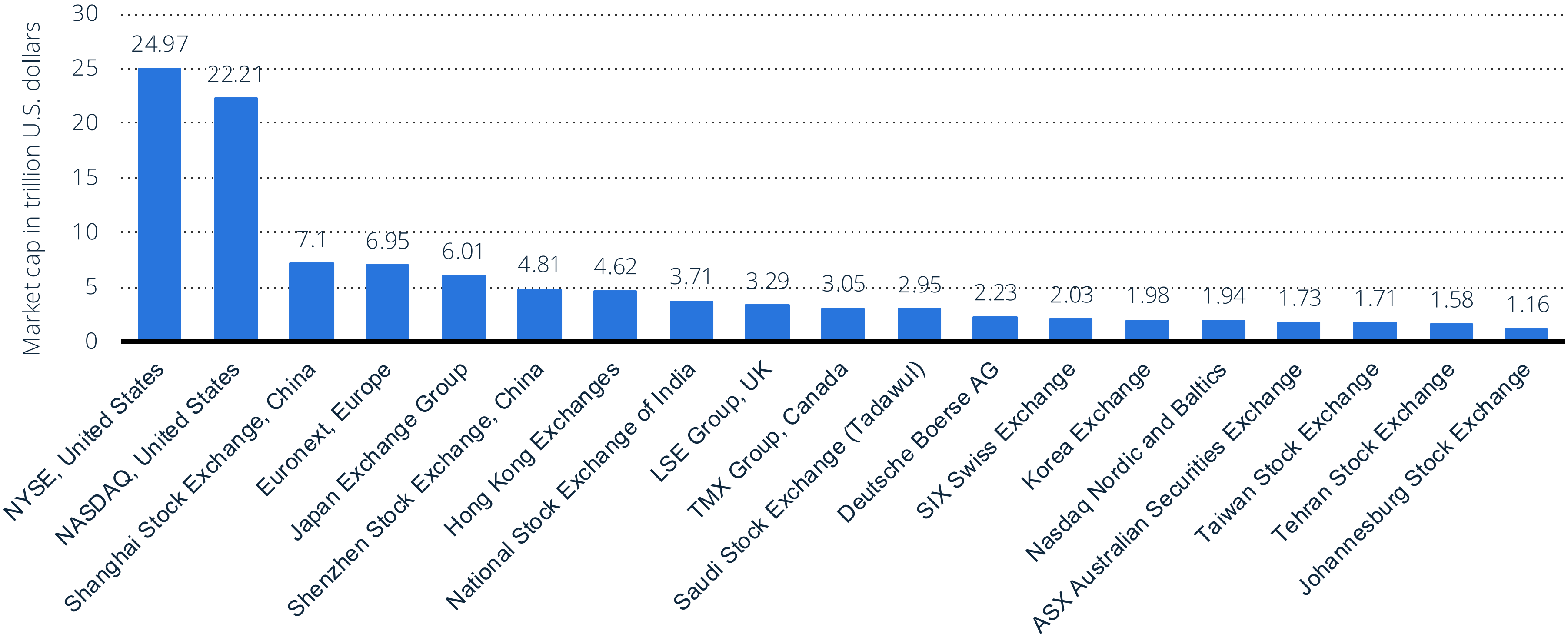
Investing in Foreign Stock Markets

- Many investors purchase stocks outside of the home country.
- Recently, firms outside the U.S. have been issuing stock more frequently.
- Comparing the size of stock markets (Exhibit 3.5)

Exhitbit 3.5: Comparison of Stock Exchanges (2015)

Country	Market Capitalization (billions of dollars)	Number of Listed Companies
Argentina	60	101
Australia	1,622	2,071
Brazil	823	308
Chile	225	308
China	6,270	2,635
Greece	22	244
Hong Kong	3,324	1,763
Hungary	13	48
Japan	4,485	3,470
Mexico	460	147
Norway	219	220
Slovenia	6	77
Spain	942	3,460
Switzerland	1,515	275
Taiwan	860	882
United Kingdom	6,187	2,938
United States	19,222	5,250

Largest stock exchange operators worldwide as of July 2023, by market capitalization of listed companies (in trillion U.S. dollars)



Largest stock exchange operators worldwide 2023, by market cap of listed companies

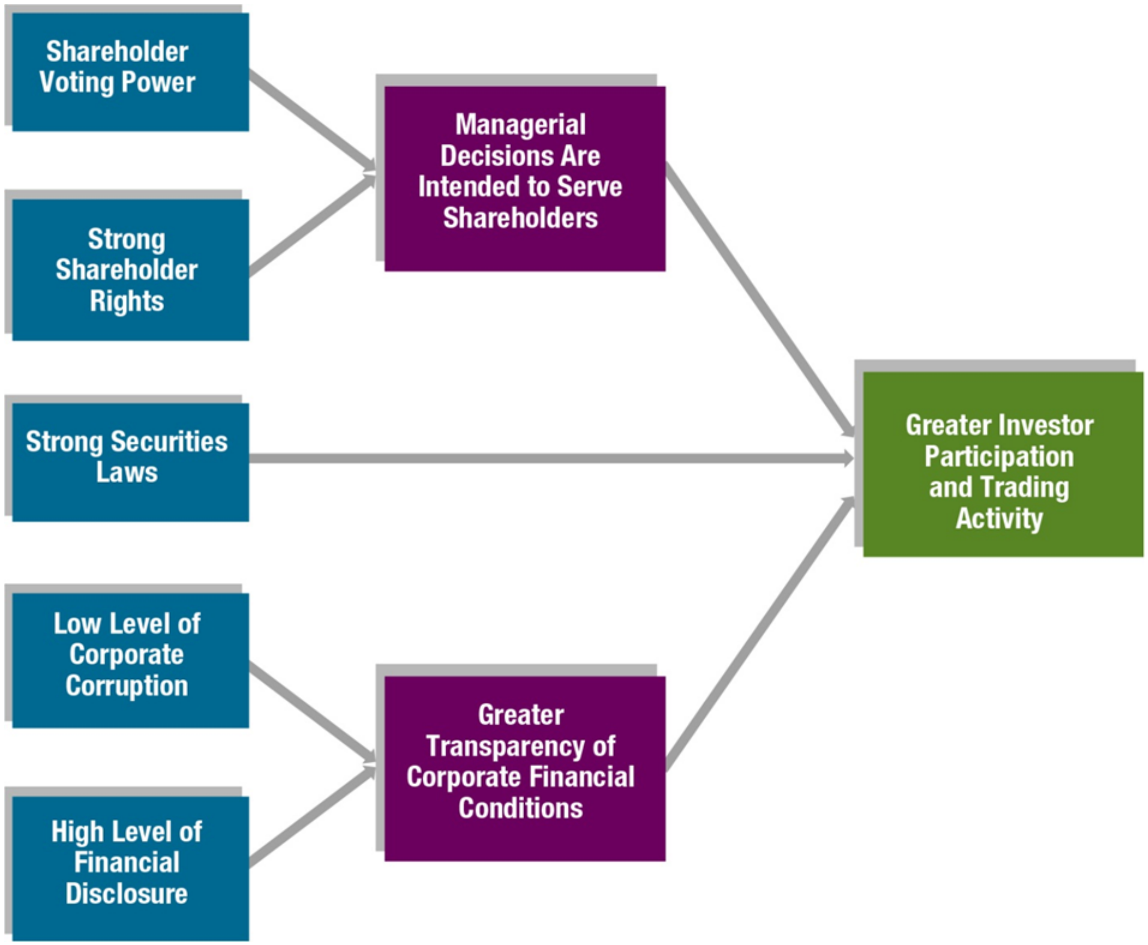
statista

International Stock Markets

How Market Characteristics Vary among Countries (Exhibit 3.6)

- Stock market participation and trading activity are higher in countries where managers are encouraged to make decisions that serve shareholder interests, and where there is greater transparency.
- Factors that influence trading activity:
  - **Rights** vary by country
  - **Legal protection** of shareholders
  - **Government enforcement** of securities laws
  - **Accounting laws**

Exhibit 3.6: Impact of Governance on Stock Market Participation and Trading Activity



International Stock Markets

Integration of Stock Markets

- Stock market conditions reflect the host country's conditions. If the country is integrated, the stock market will be also.

Integration of International Stock Markets and Credit Markets

- The key link is the risk premium, which affects the rate of return required by financial institutions.
- As economic conditions become unfavourable, a firm's future cash flows become more uncertain; thus, the risk premium demanded by investors increases and the value of debt securities and stocks decreases.

How Financial Markets Serve MNCs (Exhibit 3.7)

Corporate functions that require foreign exchange markets.

- Foreign trade with business clients.
- Direct foreign investment, or the acquisition of foreign real assets.
- Short-term investment or financing in foreign securities.
- Longer-term financing in the international bond or stock markets.

Exhibit 3.7: Foreign Cash Flow Chart of a MNC