International Banking and Money Market

Chapter 11

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International Banking Services

- International banks do everything domestic banks do *and*:
  - Arrange trade financing.
  - Arrange foreign exchange.
  - Offer hedging services for foreign currency receivables and payables through forward and option contracts.
  - Offer investment banking services (where allowed).

EXHIBIT 11.1 The World's 30 Largest Banks

Rank	Bank	Country	Total Assets	Net Income	Market Value
1	ICBC	China	3,420.3	44.2	198.0
2	Bank of China	China	2,589.6	27.2	143.0
3	JPMorgan Chase	USA	2,423.8	23.5	234.2
4	HSBC Holdings	United Kingdom	2,409.7	13.5	133.0
5	Bank of America	USA	2,185.5	15.8	156.0
6	BNP Paribas	France	2,166.3	7.4	66.8
7	Wells Fargo	USA	1,849.2	22.7	256.0
8	Citigroup	USA	1,801.0	15.8	138.1
9	Deutsche Bank	Germany	1,779.7	−7.5	26.4
10	Barclays	United Kingdom	1,650.8	−0.5	41.8
11	Mizuho Financial	Japan	1,625.5	5.0	40.7
12	Banco Santander	Spain	1,455.9	6.6	72.5
13	Société Générale	France	1,449.6	4.4	32.5
14	Royal Bank of Scotland	United Kingdom	1,201.8	−2.4	42.4
15	Lloyds Banking Group	United Kingdom	1,189.0	0.8	70.0
16	ING Group	Netherlands	914.4	5.5	49.9
17	Royal Bank of Canada	Canada	853.0	7.7	90.7
18	TD Bank	Canada	834.0	6.2	81.8
19	National Australia Bank	Australia	671.6	5.0	56.5
20	Commonwealth Bank	Australia	657.0	6.9	99.2
21	Bank of Nova Scotia	Canada	653.5	5.5	61.7
22	ANZ	Australia	625.8	5.9	54.9
23	Westpac Banking Group	Australia	571.0	6.3	80.6
24	Natixis	France	543.4	1.5	17.2
25	Bank of Montreal	Canada	496.9	3.4	41.8
26	US Bancorp	USA	428.6	5.8	75.0
27	Bank of New York Mellon	USA	372.9	3.2	44.2
28	PNC Financial Services	USA	361.0	4.0	44.0
29	BB&T	USA	212.4	2.1	29.1
30	China Huarong Asset Mgt.	China	118.5	2.3	14.3

Reasons for International Banking

- Low marginal costs
  – Managerial and marketing knowledge developed at home can be used abroad with low marginal costs.
- Knowledge advantage
  – The foreign bank subsidiary can draw on the parent bank's knowledge of personal contacts and credit investigations for use in that foreign market.
- Home nation information services
  – Local firms in a foreign market may be able to obtain more complete information on trade and financial markets in the multinational bank's home nation than is obtainable from foreign domestic banks.
- Prestige
  – Very large multinational banks have high perceived prestige, which can be attractive to new clients.
- Regulatory advantage
  – Multinational banks are often not subject to the same regulations as domestic banks.

Reasons for International Banking (continued)

- Wholesale defensive strategy
  - Banks follow their multinational customers abroad to avoid losing their business at home and abroad.
- Retail defensive strategy
  - Multinational banks also compete for retail services such as travelers checks and the tourist and foreign business market.
- Transactions costs
  - Multinational banks may be able to circumvent government currency controls.
- Growth
  - Foreign markets may offer opportunities for growth not found domestically.
- Risk reduction
  - Greater stability of earnings with diversification.

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Types of International Banking Offices

- Correspondent bank
- Representative offices
- Foreign branches
- Subsidiary and affiliate banks
- Edge Act banks
- Offshore banking centers
- “Shell” branches
- International banking facilities

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Correspondent Bank

- A *correspondent banking relationship* exists when two banks maintain deposits with each other.
- Correspondent banking allows a bank's MNC client to conduct business worldwide through his local bank or its correspondents.

Representative Offices

- A *representative office* is a small service facility staffed by parent bank personnel that is designed to assist MNC clients of the parent bank in dealings with the bank's correspondents.
- Representative offices also assist with information about local business customs and credit evaluation of the MNC's local customers.

Foreign Branches

- A *foreign branch bank* operates like a local bank, but is legally part of the parent.
  - Subject to both the banking regulations of home country and foreign country.
  - Can provide a much fuller range of services than a representative office.
- Branch banks are the most popular way for U.S. banks to expand overseas.

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Subsidiary and Affiliate Banks

- A *subsidiary bank* is a locally incorporated bank wholly or partly owned by a foreign parent.
- An *affiliate bank* is one that is partly owned but not controlled by the parent.
- U.S. parent banks like foreign subsidiaries because they allow U.S. banks to underwrite securities.

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Edge Act Banks

- *Edge Act banks* are federally chartered subsidiaries of U.S. banks that are physically located in the U.S. and are allowed to engage in a full range of international banking activities.
- The Edge Act was a 1919 amendment to Section 25 of the 1914 Federal Reserve Act.

Offshore Banking Centers

- An *offshore banking center* is a country whose banking system is organized to permit external accounts beyond the normal scope of local economic activity.
- The host country usually grants complete freedom from host-country governmental banking regulations.
- The IMF recognizes the following as major offshore banking centers:
  - The Bahamas, Bahrain, the Cayman Islands, Hong Kong, the Netherlands Antilles, Panama, and Singapore.

“Shell” Branches

- *Shell branches* need to be nothing more than a post office box.
- The actual business is done by the parent bank at the parent bank.
- The purpose was to allow U.S. banks to compete internationally without the expense of setting up operations “for real.”

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International Banking Facilities

- An *international banking facility* is a separate set of accounts that are segregated on the parents books.
- An international banking facility is not a unique physical or legal identity.
- Any U.S. bank can have one.
- International banking facilities have captured a lot of the Eurodollar business that was previously handled offshore.

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EXHIBIT 11.2 Organizational Structure of International Banking Offices from the U.S. Perspective

Type of Bank	Physical Location	Accept Foreign Deposits	Make Loans to Foreigners	Subject to Fed Reserve Requirements	FDIC Insured Deposits	Separate Legal Equity from Parent
Domestic bank	U.S.	No	No	Yes	Yes	No
Correspondent bank	Foreign	N/A	N/A	No	No	N/A
Representative office	Foreign	No	No	Yes	Yes	No
Foreign branch	Foreign	Yes	Yes	No	No	No
Subsidiary bank	Foreign	Yes	Yes	No	No	Yes
Affiliate bank	Foreign	Yes	Yes	No	No	Yes
Edge Act bank	U.S.	Yes	Yes	No	No	Yes
Offshore banking center	Technically Foreign	Yes	Yes	No	No	No
International banking facility	U.S.	Yes	Yes	No	No	No

Capital Adequacy Standards

- *Bank capital adequacy* refers to the amount of equity capital and other securities a bank holds as reserves.
- Three pillars of capital adequacy:
  - Minimum capital requirements
  - Supervisory review process
  - Effective use of market discipline
- While traditional bank capital standards protect depositors from traditional credit risk, they may not be sufficient protection from derivative risk.
  - Barings Bank, which collapsed in 1995 from derivative losses, looked good on paper relative to the capital adequacy standards of the day.

Capital Adequacy Standards (continued)

- The Basel II Accord has been endorsed by central bank governors and bank supervisors in the G10 countries.
- Sets out the details for adopting a more risk sensitive minimum capital requirements.
  - The key variables the bank must estimate are *the probability of default* and the *loss given default* for each asset on their books.

International Money Market

- Eurocurrency is a time deposit in an international bank located in a country different than the country that issued the currency.
  - For example, Eurodollars are U.S. dollar-denominated time deposits in banks located abroad.
  - Euroyen are yen-denominated time deposits in banks located outside of Japan.
  - The foreign bank doesn't have to be located in Europe.

Eurocurrency Market

- Most Eurocurrency transactions are interbank transactions in the amount of $1,000,000 and up.
- Common reference rates include:
  – LIBOR (London Interbank Offered Rate)
  – PIBOR (Paris Interbank Offered Rate)
  – SIBOR (Singapore Interbank Offered Rate)
- A new reference rate for the new euro currency:
  – EURIBOR (the rate at which interbank time deposits of € are offered by one prime bank to another)

Eurocredits

- Eurocredits are short- to medium-term loans of Eurocurrency.
- The loans are denominated in currencies other than the home currency of the Eurobank.
- Often the loans are too large for one bank to underwrite; a number of banks form a syndicate to share the risk of the loan.
- Eurocredits feature an adjustable rate.
  – On Eurocredits originating in London the base rate is LIBOR.

Forward Rate Agreements

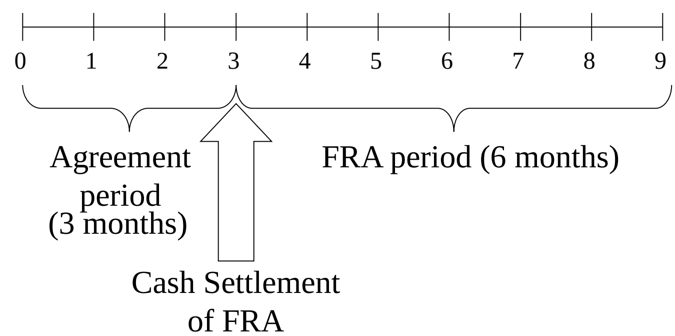
- An interbank contract that involves two parties, a buyer and a seller.
- The buyer agrees to pay the seller the increased interest cost on a notational amount if interest rates fall below an agreed rate.
- The seller agrees to pay the buyer the increased interest cost if interest rates increase above the agreed rate.

Forward Rate Agreements: Uses

- Forward rate agreements can be used to:
  - Hedge assets that a bank currently owns against interest rate risk.
    - For example, a bank that has made a three-month Eurodollar loan against an offsetting six-month Eurodollar deposit could protect itself by selling a "three against six" FRA.
  - Speculate on the future course of interest rates.

Forward Rate Agreements: Example

- A three against nine FRA is a 3-month forward contract on a six-month interest rate for a six-month period beginning three months from now.



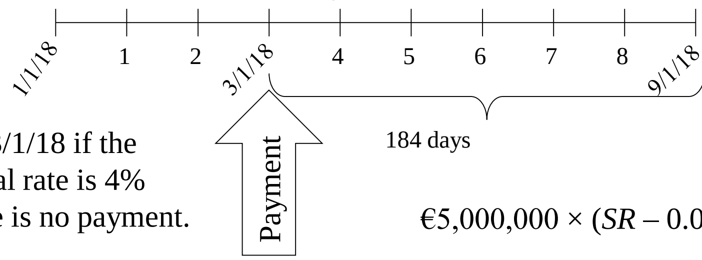
Settling a Forward Rate Agreement

- At the end of the agreement period, the loser pays the winner an amount equal to the present value of the difference between the settlement rate (*SR*) and the agreement rate (*AR*), sized according to the length of the agreement period and the notational amount.

$$\left| \frac{\text{Notational Amount} \times (SR - AR) \times \dfrac{\text{days}}{360}}{1 + \left(SR \times \dfrac{\text{days}}{360}\right)} \right|$$

Settling a FRA

- A €5,000,000, 4%, 3 against 9 FRA entered into January 1, 2018 has the following terms:



On 3/1/18 if the actual rate is 4% there is no payment.

$$\frac{€5{,}000{,}000 \times (SR - 0.04) \times \frac{184}{360}}{1 + \left(SR \times \frac{184}{360}\right)}$$

If on 3/1/18 the *SR* = 5% the seller pays the buyer €24,918.74.

If on 3/1/18 the *SR* = 3% the buyer pays the seller €25,169.62.

Euronotes

- Euronotes are short-term notes underwritten by a group of international investment banks or international commercial banks.
  - They are sold at a discount from face value and pay back the full face value at maturity.
  - Maturity is typically three to six months.

Eurocommercial Paper

- Unsecured short-term promissory notes issued by corporations and banks.
- Placed directly with the public through a dealer.
- Maturities typically range from one month to six months.
- Eurocommercial paper, while typically U.S. dollar denominated, is often of lower quality than U.S. commercial paper—as a result yields are higher.

Eurodollar Interest Rate Futures Contract

- Widely used futures contract for hedging short-term U.S. dollar interest rate risk.
- The underlying asset is a *hypothetical* $1,000,000 90-day Eurodollar deposit—the contract is cash settled.
- Traded on the CME and the Singapore International Monetary Exchange.
- The contract trades in the March, June, September, and December cycle.

EXHIBIT 11.8 CME Group Eurodollar Futures Contract Quotations

	Settle	Change	Open Interest	Volume
Eurodollar (CME)-$1,000,000; pts of 100%				
Jun 16	99.350	−.010	1,189,501	111,055
Sep	99.240	−.020	1,128,870	98,386
Dec	99.145	−.025	1,435,860	122,756
Mar 17	99.080	−.035	903,812	83,536
Jun	99.020	−.040	904,486	76,193
Sep	98.960	−.045	726,280	73,261
Dec	98.895	−.045	1,054,382	114,417
Mar 18	98.845	−.050	505,537	53,941
Jun	98.790	−.050	454,557	45,773
Sep	98.735	−.055	370,422	40,984
Dec	98.675	−.055	522,255	52,614
Mar 19	98.630	−.055	303,790	28,733
Jun	98.580	−.055	264,054	19,403
Sep	98.525	−.055	184,347	15,927
Dec	98.465	−.055	210,475	14,977
Mar 20	98.415	−.055	118,741	14,029
Jun	98.355	−.055	62,903	10,952
Sep	98.300	−.055	58,922	10,787
Dec	98.240	−.055	80,188	9,435
Mar 21	98.190	−.050	42,073	7,027
Jun	98.130	−.050	33,253	526
Sep	98.075	−.050	18,157	452
Dec	98.020	−.050	14,362	773
Mar 22	97.975	−.050	7,901	366
Jun	97.930	−.045	5,470	34
Sep	97.890	−.040	5,358	59

LIBOR

- **London Interbank Offered Rate (LIBOR)**, the reference rate in London for Eurocurrency deposits.
- There is a LIBOR for Eurodollars, Euro–Canadian dollars, Euroyen, and even euros.
- In other financial centers, other reference rates are used.
  - For example, *SIBOR* is the Singapore Interbank Offered Rate, and *TIBOR* is the Tokyo Interbank Offered Rate.
- **Euro Interbank Offered Rate (EURIBOR)** is the rate at which interbank deposits of the euro are offered by one prime bank to another in the euro zone.

International Debt Crisis

- Some of the largest banks in the world were endangered when loans were made to sovereign governments of some less-developed countries.
- At the height of the crisis, Third World countries owed $1.2 trillion.
- Like many calamities, it is easy to see in retrospect that, it's a bad idea to put too many eggs in one basket, especially if you don't know much about that basket.

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Debt-for-Equity Swaps

- As part of debt rescheduling agreements among the bank lending syndicates and the debtor nations, creditor banks would sell their loans for U.S. dollars at discounts from face value to MNCs desiring to make equity investment in subsidiaries or local firms in the LDCs.
- The LDC central bank would buy the bank debt from a MNC at a smaller discount than the MNC paid, but in local currency.
- The MNC would use the local currency to make pre-approved new investment in the LDC that was economically or socially beneficial to the LDC.

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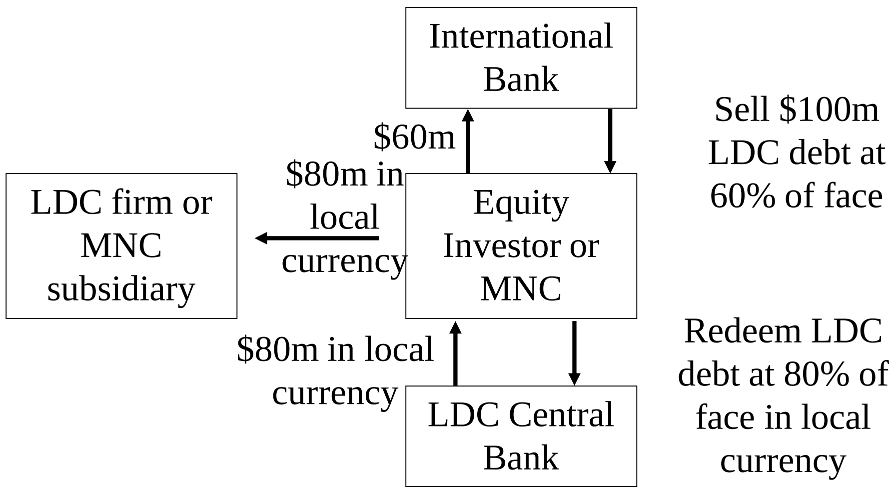
Debt-for-Equity Swap Illustration



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The Asian Crisis

- This crisis followed a period of economic expansion in the region financed by record private capital inflows.
- Bankers from the G-10 countries actively sought to finance the growth opportunities in Asia by providing businesses with a full range of products and services.
- This led to domestic price bubbles in East Asia, particularly in real estate.
- Additionally, the close interrelationships common among commercial firms and financial institutions in Asia resulted in poor investment decision making.
- The Asian crisis is only the latest example of banks making a multitude of poor loans—spurred on by competition from other banks to make loans in the “hot” region.

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Global Financial Crisis

- Officially began in the United States in December of 2007.
- The origin of the credit crunch can be traced back to the low interest rate environment created by the Federal Reserve Bank in the early part of this century.
- Many banks and mortgage lenders lowered their credit standards to attract new home buyers who could afford to make mortgage payments at the current low interest rates, or "teaser" rates that were temporarily set at a low level during the early years of an adjustable-rate mortgage, but would likely reset to a higher rate later on.
- Many of these home buyers would not have qualified for mortgage financing under more stringent credit standards, nor could they afford the loan at the eventual higher rates of interest.

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Global Financial Crisis: Subprime Primer

- These so-called *subprime* mortgages were typically not held by the originating bank making the loan, but instead were resold for packaging into mortgage-backed securities (MBSs).
  - Between 2001 and 2006, the value of subprime mortgages increased from \$190 billion to \$600 billion.
- Conceptually, mortgage-backed securities make sense. Each MBS represents a portfolio of mortgages, thus diversifying the credit risk that the investor holds.
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Global Financial Crisis: SIVs

- Structured Investment Vehicles (SIVs) have been one large investor in MBS. An SIV is a virtual bank, frequently operated by a commercial bank or an investment bank, but which operates off the balance sheet.
- Typically, an SIV raises short-term funds in the commercial paper market to finance longer-term investment in MBSs and other asset-backed securities.
  - SIVs are frequently highly levered, with ratios of 10 to 15 times the amount of equity raised.
  - Since yield curves are typically upward sloping, the SIV might earn .25 percent by doing this. Obviously, SIVs are subject to the interest rate risk of the yield curve inverting (that is, short-term rates rising above long-term rates), thus necessitating the SIV to refinance the MBS investment at short-term rates in excess of the rate being earned on the MBS.
- SIVs must contend with default risk. If the underlying mortgage borrowers default on their home loans, the SIV will lose investment value.

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Global Financial Crisis: CDOs

- Collateralized Debt Obligations (CDOs) have been another big investor in MBS.
- A CDO is a corporate entity constructed to hold a portfolio of fixed-income assets as collateral. The portfolio of fixed-income assets is divided into different tranches, each representing a different risk class: AAA, AA-BB, or unrated.
- CDOs serve as an important funding source for fixed-income securities. An investor in a CDO is taking a position in the cash flows of a particular tranche, not in the fixed-income securities directly.
  - The investment is dependent on the metrics used to define the risk and reward of the tranche. Investors include insurance companies, mutual funds, hedge funds, other CDOs, and even SIVs. MBSs and other asset-backed securities have served as collateral for many CDOs.

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Global Financial Crisis: Fed Actions

- To cool the growth of the economy, the Fed steadily increased the fed funds target rate at meetings of the Federal Open Market Committee, from a low of 1.00 percent on June 25, 2003, to 5.25 percent on June 29, 2006.
- In turn, mortgage rates increased. Many subprime borrowers found it difficult, if not impossible, to make mortgage payments in a cooling economy, especially when their adjustable-rate mortgages were reset at higher rates.

Global Financial Crisis: Default Snowball

- When subprime debtors began defaulting on their mortgages, commercial paper investors were unwilling to finance SIVs. Liquidity worldwide essentially dried up.
- The spread between the three-month Eurodollar rate and three-month U.S. Treasury-bills (the TED spread), frequently used as a measure of credit risk, increased from about 30 basis points in March 2007 to 200 basis points in November 2007, as investors became fearful of placing funds in even the strongest international banks.
- Additionally, many CDOs found themselves stuck with the highest risk tranches of MBS debt, which they had not yet placed or were unable to place as subprime foreclosure rates around the country escalated.
- Commercial and investment banks have been forced to write down over $170 billion of subprime debt to date, with as much as $285 billion expected.

Global Financial Crisis: Lessons

- At this point, the story of the global financial crisis is still ongoing. Many lessons should be learned from it:
  - Credit rating agencies need to refine their models for evaluating esoteric credit risk created in MBSs and CDOs.
  - Borrowers must be more wary of putting complete faith in credit ratings.
  - Bankers seem to scrutinize credit risk less closely when they serve only as mortgage originators rather than the paper holders themselves.
- As things have turned out, when the subprime mortgage crisis hit, commercial and investment banks found themselves exposed, in one fashion or another, to more mortgage debt than they realized they held.

Summary

- International banks facilitate imports and exports by arranging trade financing. They also arrange foreign currency exchange, assist in hedging exchange rate exposure, trade foreign exchange for their own account, and make a market in currency derivative products.
- Various types of international banking offices include correspondent bank relationships, representative offices, foreign branches, subsidiaries and affiliates, Edge Act banks, offshore banking centers, and International Banking Facilities. The reasons for the various types of international banking offices and the services they provide vary considerably.

Summary (continued)

- A Eurocurrency is a time deposit of money in an international bank located in a country different from the country that issued the currency. For example Eurodollars are deposits of U.S. dollars in banks outside of the United States. The Eurocurrency market is headquartered in London.
- Other main international money market instruments include forward rate agreements, Euronotes, Eurocommercial paper, and Eurodollar interest rate futures.

Summary (continuing)

- Capital adequacy refers to the amount of equity capital and other securities a bank holds as reserves to reduce the probability of a bank failure. The global financial crisis that began in mid-2007 illustrated how quickly and severely liquidity risks can crystallize and certain sources of funding can evaporate.
- The international debt crisis was caused by international banks lending more to Third World sovereign governments than they should have.
- The Asian crisis began in mid-1997. The crisis followed a period of economic expansion in the region financed by record private capital inflows.

Summary (concluded)

- The global financial crisis began in the United States in the summer of 2007 as a credit crunch, or the inability of borrowers to easily obtain credit.
- The origin of the credit crunch can be traced back to three key contributing factors: liberalization of banking and securities regulation, a global savings glut, and the low interest rate environment created by the Federal Reserve in the earlier part of the decade.
- Low interest rates created the means for first-time homeowners to afford mortgage financing and for existing homeowners to trade up to more expensive homes.