



## **CHAPTER 13**

# **COMMERCIAL BANK OPERATIONS**

# *Overview of the Banking Industry*

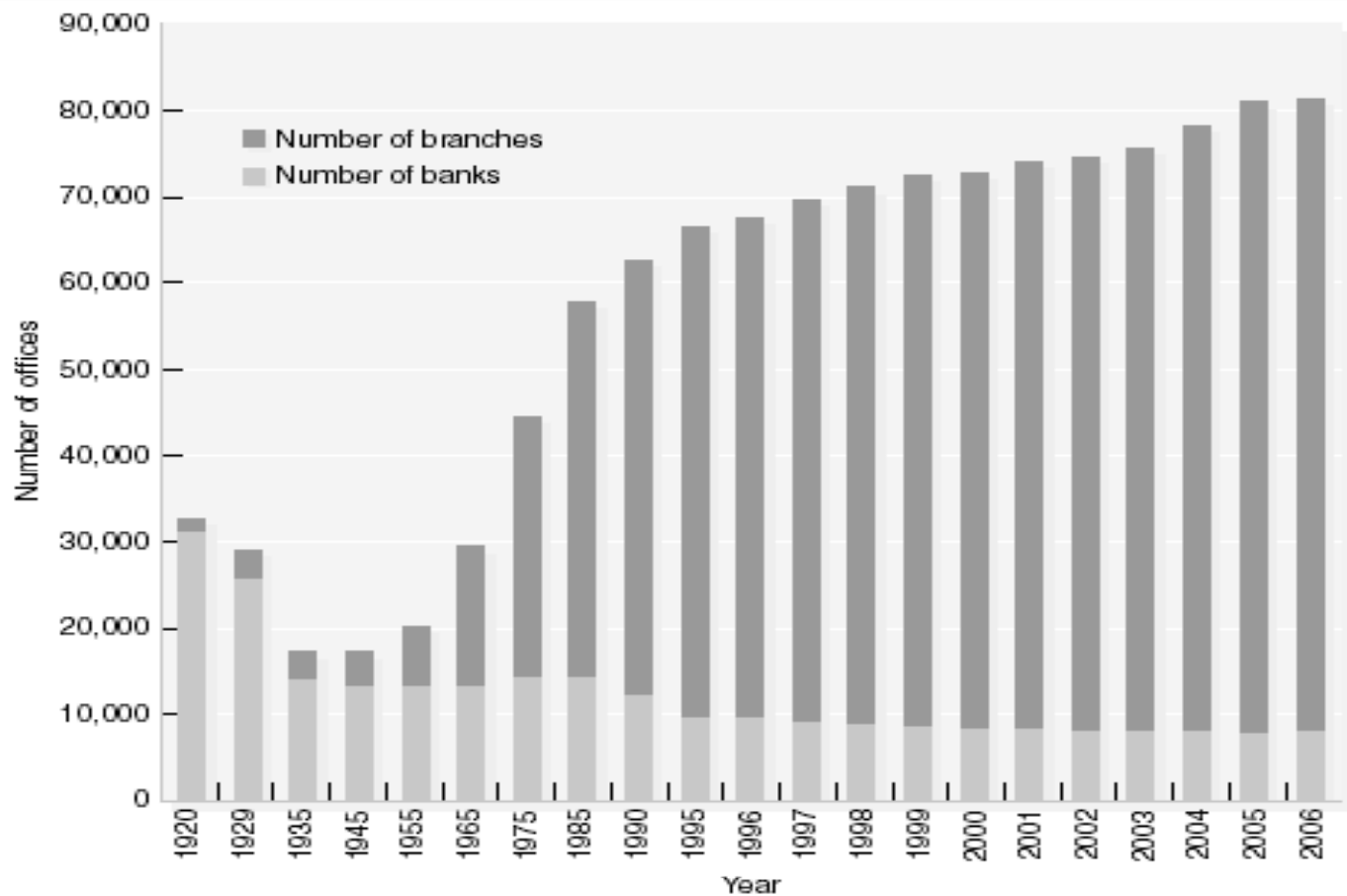
- Fewer banks, more branches
- Many small banks, a few very large banks
- Holding companies predominate

# *Commercial Bank Market*

- Fewer banks, more branches
  - Less than 8,000 banks: Number of banks has declined significantly as industry has consolidated.
  - More than 80,000 banking offices: Number of branches has increased as geographical restrictions on banking have relaxed.
- Many small banks, a few very large banks
  - 94% of U.S. banks hold only 18% of total banking industry assets.
  - The largest 89 banks (about 1% of U.S. banks) hold 67% of total deposits.
- Bank holding companies a company owning an interest in at least 1 bank.
  - As of 2005, 5,154 holding companies controlled 6,160 banks with about 96% of U.S. commercial bank assets.

**EXHIBIT 13.1**

**Number of Banks and Branches of Commercial Banks (1920–2003)**



After the 1950s the number of banks and branches increased until the late 1980s. With consolidation and the emergence of electronic banking, the number of banks declined. The number of branches per bank, however, continues to increase. (Note: 2006 figures are estimates based on third-quarter data.)

Source: FDIC, *Statistics on Banking*.

## EXHIBIT 13.3

**Deposit Distribution of All Insured Commercial Banks (June 30, 2006)**

Asset Size	Number of Banks	Total Deposits (in Millions)	Number of Banks		Total Deposits	
			Percent <sup>a</sup>	Cumulative Percent	Percent <sup>a</sup>	Cumulative Percent
Less than \$25 million	586	\$ 7,661	8	8	0	0
\$25 to 50 million	1,098	33,511	15	23	1	1
\$50 to 100 million	1,718	105,754	23	46	2	3
\$100 to 300 million	2,427	349,740	32	78	7	10
\$300 to 500 million	672	211,495	9	87	4	14
\$500 to 1 billion	494	265,540	7	94	5	19
\$1 to 3 billion	275	338,909	4	98	6	25
\$3 to 10 billion	120	427,340	2	100	8	33
\$10 billion or more	89	3,580,817	1	101	67	100
Total	7,479	\$5,320,767	100		100	

Although there are about 7,800 banks in the United States, the largest 1 percent of the banks control about two-thirds of all banking deposits.

<sup>a</sup>Column may not equal 100 because of rounding.

Source: FDIC, *Statistics on Banking*, June 30, 2006.

**EXHIBIT 13.4****The 10 Largest Bank Holding Companies in the United States  
(December 31, 2006)**

Rank	Bank Holding Company	Location	Total Deposits (Billions)
1	Citigroup, Inc.	New York, NY	\$1,884,318,000
2	Bank of America Corporation	Charlotte, NC	1,463,685,485
3	JP Morgan Chase & Co.	New York, NY	1,351,520,000
4	Wachovia Corporation	Charlotte, NC	707,121,000
5	Wells Fargo & Company	San Francisco, CA	481,996,000
6	HSBC North America Holdings Inc.	Prospect Heights, IL	478,159,427
7	Taunus Corporation	New York, NY	430,398,000
8	U.S. Bancorp	Minneapolis, MIN	219,232,000
9	Countrywide Financial Corporation	Calabasas, CA	199,946,230
10	Suntrust Banks, Inc.	Atlanta, GA	182,161,609

Citigroup, Inc., is the largest holding company in the United States. It is 10 times larger than the nation's tenth largest bank holding company. Because of consolidation in the industry, 7 of the top 10 bank holding companies are headquartered in cities other than New York, the nation's traditional financial center.

Source: Federal Financial Institutions Examination Council, *Top 50 Bank Holding Companies*, December 31, 2006.

# *The Balance Sheet for a Commercial Bank*

**Uses  
of  
Funds  
(Assets)**

=

**Sources  
of  
Funds  
(Liabilities + Capital)**

Cash Assets

Investments

Loans & Leases

Other Assets

- More on next slides:
- **Deposit Liabilities:**  
Transaction Deposits; Savings  
Deposits; Time Deposits
- **Non-deposit Liabilities:**  
Fed Funds Purchased; Repurchase  
Agreements; Other
- **Capital Accounts:**  
Capital stock; Undivided Profits;  
Special Reserve Accounts

# *Deposit Liabilities:*

- **Transaction Deposits:** Demand Deposits; NOW Accounts
  - Demand Deposits, also known as checking accounts.
  - NOW (Negotiable Order of Withdrawal) Accounts—
    - pay interest; are just for individuals, governments, and nonprofits
  
- **Savings Deposits:** Savings Accounts; MMDAs
  - Savings Accounts
  - MMDAs (Money Market Deposit Accounts)
    - available to any customer; interest plus limited transactional features
  
- **Time Deposits:** Certificates of Deposit; Negotiable Certificates of Deposit
  - Certificates of Deposit
  - usually under \$100,000; non-transferable; terms of 30 days to 5 years
  - Negotiable (or “Jumbo”) CDs
  - \$100,000 or more; transferable or negotiable in secondary market;
  - terms rarely exceed 90 days

## ***Non-deposit Liabilities:***

- **Fed Funds Purchased**: Most important non-deposit source of funds
  - Recall purpose of Fed Funds Market from Chapters 2 and 3
  - Banks buy and sell Fed Funds to adjust liquidity--
    - minimum usually \$1 million; usual maturity 24 hours (“overnight”)
  
- **Repurchase Agreements**: Another liquidity adjustment mechanism
  - Bank sells securities but agrees to repurchase them
  - Essentially a self-securing loan; usually “overnight” but can last longer
  - T-Bills are common form of collateral
  
- **Other Borrowings**—
  - Eurodollars (See Chapter 12).
  - Bankers’ Acceptances (see Chapters 7 and 12).
  - Discount Window Loans (see Chapters 2 and 3).
  - Capital Notes or Bonds—
    - usually subordinate to depositors’ claims
    - may count as “capital” for some regulatory purposes

# *Capital Accounts:*

- **Capital Stock:**  
Direct investments of common or preferred equity
- **Undivided Profits:**  
Accumulated earnings not paid out in dividends
- **Special Reserve Accounts:**  
Against losses on loans or securities

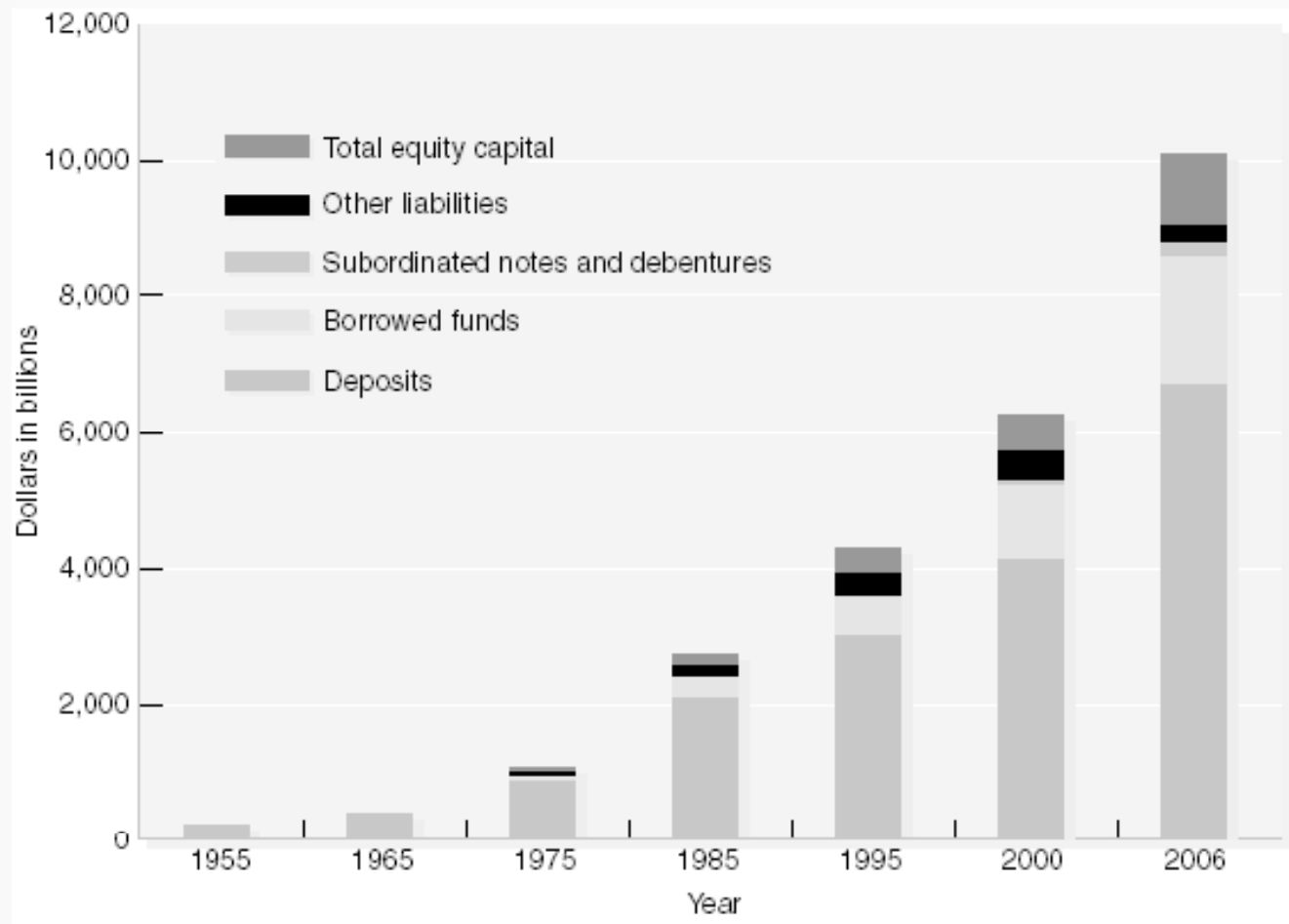
## EXHIBIT 13.5

**Liabilities and Capital Accounts of Commercial Banks (December 31, 2006)**

Liabilities and Capital Accounts	<u>All Insured Commercial Banks<sup>a</sup></u>		<u>Small Banks<sup>b</sup></u>	<u>Medium Size Banks<sup>c</sup></u>	<u>Large Banks<sup>d</sup></u>
	Billions	Percent <sup>e</sup>	Percent <sup>e</sup>	Percent <sup>e</sup>	Percent <sup>e</sup>
<b>Liabilities</b>					
Deposits, total	\$6,731	67	83	82	65
Noninterest-bearing	1,217	12	14	13	12
Interest-bearing	5,515	55	68	69	53
Borrowed funds, total	1,856	18	4	7	20
Federal funds purchased and securities sold under repurchase agreements	719	7	1	2	8
Trading liabilities	266	3	0	0	3
Other borrowed money	870	9	3	5	9
Capital notes and bonds	150	1	0	0	2
All other liabilities	324	3	1	1	4
<b>Total liabilities</b>	<b>\$9,063</b>	<b>90</b>	<b>87</b>	<b>90</b>	<b>90</b>
<b>Capital Accounts</b>					
Common and preferred stock	665	7	8	5	7
Undivided profits	366	4	5	5	3
<b>Total equity capital</b>	<b>\$1,030</b>	<b>10</b>	<b>13</b>	<b>10</b>	<b>10</b>
<b>Total liabilities and equity capital</b>	<b>\$10,094</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Deposits are the largest source of funds for most banks, but they are a much more important source for small and medium-size banks. Borrowed funds are a more important source of funds for large banks. Banks in general are thinly capitalized, but small banks tend to be better capitalized than large ones.

<sup>a</sup>This group consists of 7,402 insured commercial banks.

**EXHIBIT 13.6****Liabilities and Capital Accounts of Commercial Banks (1935–2006)**

Increased demand for loans at banks has outpaced the growth in deposits at banks in recent years. As a result, banks must rely more heavily on borrowed funds to finance their operations. Banks made little use of money market sources of funds until the mid-1980s. In recent years, however, banks have made greater use of borrowed funds, which currently account for almost 20 percent of all funds raised by banks.

Source: FDIC, *Statistics on Banking*.

# *Uses of Funds: Assets*

- Cash Assets
  - Vault cash (physical currency and coin)
  - Reserves at Fed (Chap 2 and 3)
    - Required reserves per Reg D plus Excess reserves
  - Balances at other banks – small banks may hold deposits at large banks for correspondent services, or as reserves (if bank not member of FRS).
  - Cash Items in Process of Collection (Chap 2)
  - Fed Funds Sold (lent)
  - Reverse Repos
  
- Investments – usually low risk
  - U.S. Treasury securities
  - Agency securities
  - Municipal securities (Chap 8) –  
Probably riskiest securities banks allowed to own
  
- Loans & Leases (next slide)
  
- Other Assets (next slide)

# *Loans and Leases:*

- **Loans - major categories:**
  - Commercial and Industrial Loans
  - Loans to Depository Institutions
  - Real Estate Loans
  - Agricultural Loans
  - Consumer Loans
  
- **Leases** – Fast-growing line of business for large banks. Common financing technique for:
  - “fleet assets” (aircraft, ships, etc.)
  - “rolling stock” (trucks, rail cars, etc)
  - other capital equipment (cranes, generators, etc.)
  
- **Other Assets**
  - Trading account assets—securities held for resale.
  - Fixed assets—land, buildings, equipment, etc.
  - Intangibles—goodwill, pre-pays, etc.

**EXHIBIT 13.7**
**Assets of Commercial Banks (December 31, 2006)**

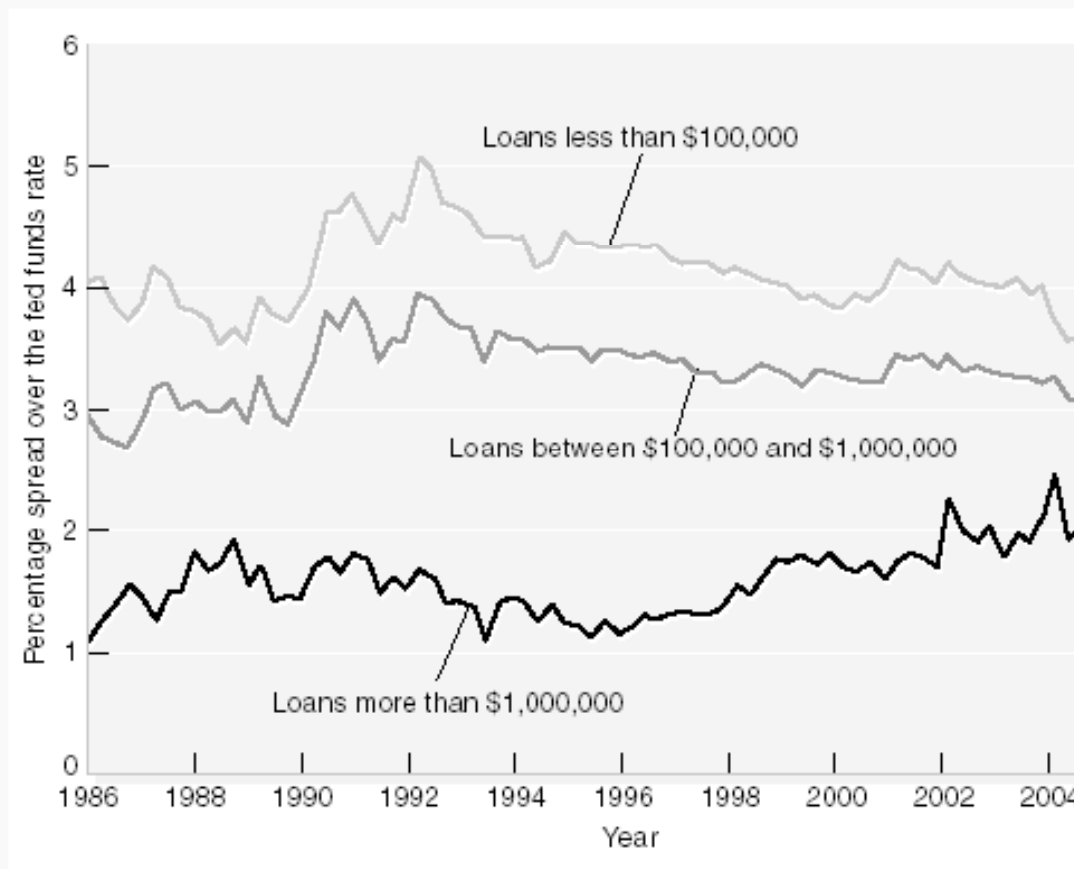
Assets Accounts	All Insured Commercial Banks <sup>a</sup>		Small Banks <sup>b</sup>	Medium-Size Banks <sup>c</sup>	Large Banks <sup>d</sup>
	\$ Billions	% <sup>e</sup>	% <sup>e</sup>	% <sup>e</sup>	% <sup>e</sup>
Cash and due from depository institutions	\$432	4	5	4	4
Federal funds sold and securities purchased under repurchase agreements	530	5	6	3	5
Total investments	1,666	17	23	19	16
U.S. Treasury	43	0	1	1	0
U.S. Government agency	1,045	10	17	14	10
State and local government	135	1	4	4	1
Other	443	4	1	1	5
Total Loans and Lease Financing	5,981	59	62	69	58
Commercial and industrial	1,139	11	10	10	11
Depository institutions	128	1	0	0	1
Real estate	3,432	34	40	52	32
Residential	1,907	19	16	16	19
Commercial	811	8	12	20	7
Other real estate	714	7	12	15	6
Agriculture	54	1	6	2	0
Consumer	858	9	5	4	9
Credit cards	341	3	0	0	4
Other consumer	517	5	5	4	5
Lease financing receivables	138	1	0	0	2
Other	231	2	1	1	3
Less loan loss allowance	(69)	(1)	(1)	(1)	(1)
Trading account assets	620	6	0	0	7
Bank premises and fixed assets	102	1	2	2	1
Intangible assets	358	4	0	1	4
Other assets	471	5	2	3	5
<b>Total assets</b>	<b>\$10,091</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

# *Loan Pricing: How are loan rates determined?*

- Loan pricing –
  - Earn enough interest to cover cost of loanable funds (interest on deposits)
  - Recover administrative costs of originating and monitoring loan
  - Provide adequate compensation for risk
    - DR: Credit (or default) risk and liquidity risk;
    - TM: Term to Maturity (interest rate) risk
    - CF: Adjust for competitive factors (CF) customer access to alternatives
- Base rate pricing – benchmark cost of funds plus mark up for risk premiums
  - Prime Rate – Typically, lowest rate charged to most creditworthy customers
  - Other benchmarks: LIBOR; Treasury rates; Fed Funds rate.
  - **Example model:**  $r_L = \mathbf{BR} + \mathbf{DR} + \mathbf{TM} + \mathbf{CF}$ 
    - Large corp borrower (floating):  $= 7\% + 2\% + 0 + 0 = 9\%$
    - Small corp borrower (1 yr fixed):  $= 7\% + 3\% + 0.75 + 1\% = 11.75\%$
- Non-price adjustments - alter effective return
  - Compensating balances - requires borrower to carry min balance.
  - Additional collateral or specified collateral

# *Loan Pricing (cont) and Deposit Pricing*

- Assessing Credit risk
  - Five “C”s of Credit:
    - 1. Character
    - 2. Capacity (cash flow)
    - 3. Capital (wealth or net worth)
    - 4. Collateral (security for the loan)
    - 5. Conditions (economic conditions)
  - Credit scoring based on info in borrower’s credit report:
    - 1. Payment history;
    - 2. Amount owed
    - 3. Length of credit history
    - 4. Extent of new debt;
    - 5. Type of credit in use
- Pricing Deposits - Must offer depositors high enough rates to attract and retain a stable deposit base
  - Must not pay so much on deposits that profitability is compromised
  - Competition puts pressure on the “spread” from both sides
    - bank may have to charge lower rates on loans
    - bank may have to pay higher rates on deposits

**EXHIBIT 13.8****Interest Rate Spread of Commercial and Industrial Loans Over the Fed Funds Rate (1986–2006)**

The largest loans tend to be made to the lowest-risk borrowers. Therefore, it is not surprising that the interest rates on these loans are the lowest. During recessions, the yield spread over the fed funds rate remains relatively constant on the largest loans. On smaller, higher-risk loans, however, the yield spread over the fed funds rate tends to get larger, as it did in the early 1990s.

Source: Board of Governors, Federal Reserve System, *E2 Statistical Release*.

## *Fee-based services*

- Correspondent banking: sale of bank services to other financial institutions
  - Many small banks need services provided by large banks. Unique to U.S.
  - check clearing and collection; foreign exchange
  - participation in large loans;
  - data processing (accounts, loans, payroll)
  
- Trust services: management of client wealth
  - As fiduciary, bank holds and manages assets for beneficiary
  - Trust function is strictly segregated from other bank functions
  - Common trust services—
    - administration of estates
    - management of pension assets
    - registration and transfer of securities
    - administration of bond indentures
  
- Non-banking financial services: Investments (Brokerage)
  - Allowed by deregulation if clients understand not covered by deposit ins.

## *Off-balance-sheet banking*

- Derivatives: forwards, futures, options, swaps (Chapter 11)
  - Speculation versus hedging...
- Loan brokerage and Securitization – Sale of loans after origination
  - Restores liquidity; avoids regulatory burden of loans on books; earns fees.
- Securitization – Assignment of cash flows from assets (loans) to investors.
  - bank transfers assets to trust; sells ownership units in trust
  - Banks can underwrite securitizations themselves after deregulation
- Loan commitments – unfunded promises to make loans in the future
  - Letters of credit – Written promises to pay third party on client's behalf
    - Commercial letters of credit— client buys goods and services. Bank promises to pay seller on behalf of client
    - Standby letters of credit — bank guarantees client's performance of some contract. Beneficiary presents draft if client does not perform.
      - Credit enhancement of other debts; completion of projects.
- Revolving credit
  - lines of credit allowing payment and re-borrowing within limit

## EXHIBIT 13.9

## Off-Balance-Sheet Activities of Commercial Banks (December 31, 2006)

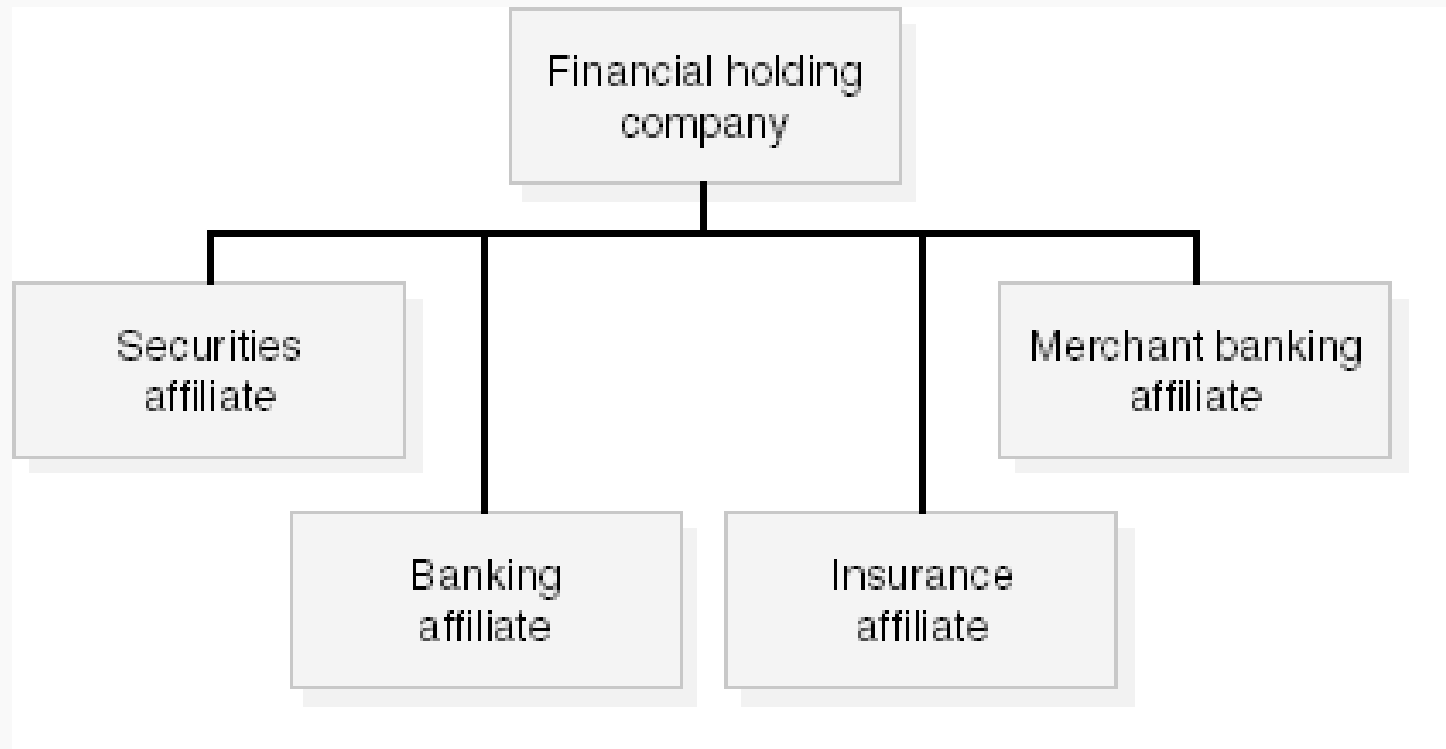
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Off-Balance-Sheet Items	All Insured Commercial Banks <sup>a</sup>		Small Banks <sup>b</sup>	Medium Size Banks <sup>c</sup>	Large Banks <sup>d</sup>
	Billions	Percent of Assets <sup>e</sup>	(Percent of Assets) <sup>e</sup>	(Percent of Assets) <sup>e</sup>	(Percent of Assets) <sup>e</sup>
Total Unused Commitments	\$6,622	66	20	33	70
Credit card lines	3,581	35	10	18	38
Other unused commitments	3,041	30	10	14	32
Total Letters of Credit	550	5	0	1	6
Commercial	28	0	0	0	0
Financial standby	451	4	0	0	5
Performance standby	70	1	0	0	1
Derivative contracts	132,163	1,310	0	1	1,488
Credit derivatives	9,019	89	0	0	102
Bank is the guarantor	4,496	45	0	0	51
Bank is the beneficiary	4,523	45	0	0	51
Interest rate contracts	107,415	1,065	0	1	1,209
Notional value of swaps	78,366	777	0	1	882
Futures and forward contracts	8,535	85	0	0	96
Written option contracts	10,275	102	0	0	116
Purchased option contracts	10,239	101	0	0	115
Foreign exchange contracts	12,564	125	0	0	141
Notional value of swaps	2,484	25	0	0	28
Futures and forward contracts	6,807	67	0	0	77
Written option contracts	1,668	17	0	0	19
Purchased option contracts	1,605	16	0	0	18
Other commodity contracts	3,164	31	0	0	36

Off-balance-sheet banking has become an important part of many bank's activities. Many large banks act as dealers in the markets for derivative securities. It is not surprising, therefore, that the derivative holdings of these banks dwarf their on-balance-sheet assets.

<sup>a</sup>This group consists of 7,402 insured commercial banks.

## Hypothetical Financial Holding Company Structure



Banks are now allowed to affiliate with securities firms, insurance companies, and merchant banking firms as part of a financial holding company structure.