



# Lecture 10

## Commercial Banking Industry: Structure and Competition

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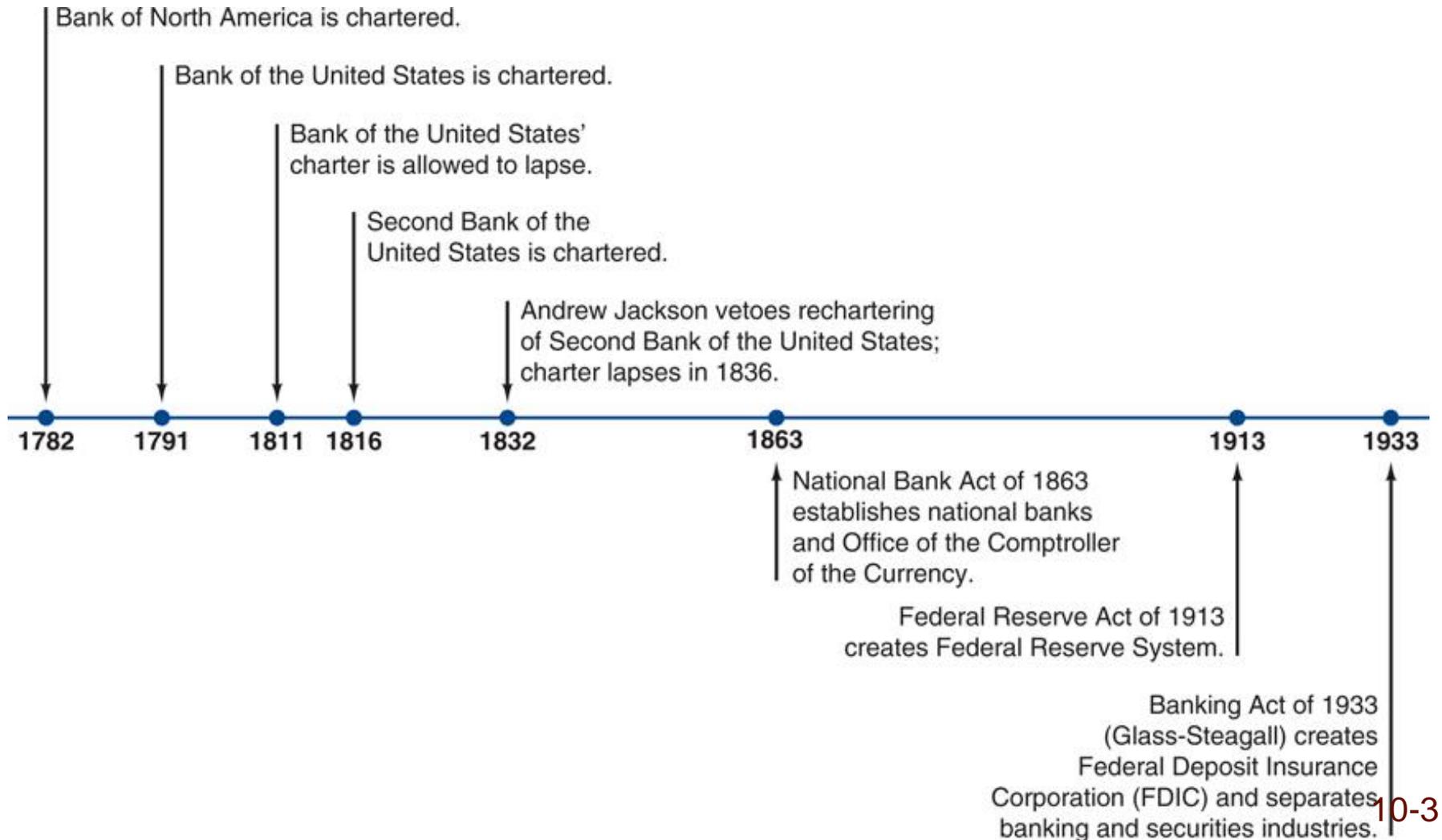
# Agenda

- Historical Development of the Banking System in the U.S.
- Financial Innovation and the Growth of the Shadow Banking System
- Structure of the Commercial Banking Industry
- Bank Consolidation



# Historical Development of the Banking Industry

## Time Line of the Early History of Commercial Banking in the US





# Historical Development of the Banking Industry

- There are also some major events post-1933
  - In 1999, Glass-Steagall was repealed. Commercial banks now engaged again in securities activities.



# Historical Development of the Banking Industry

- The history had one other significant outcome: Multiple Regulatory Agencies
  1. Federal Reserve
  2. Federal Deposit Insurance Corporation (FDIC)
  3. Office of the Comptroller of the Currency
  4. State Banking Authorities



# Financial Innovation and the Growth of the Shadow Banking System

- In recent years the traditional banking business of making loans that are funded by deposits has been in decline.
- Some of this business has been replaced by the **shadow banking system**, in which bank lending has been replaced by lending via the securities market.



# Shadow Banking

Nationwide (Shadow Banking)

Loans: 7%

No Regulation

Is there a better deal?



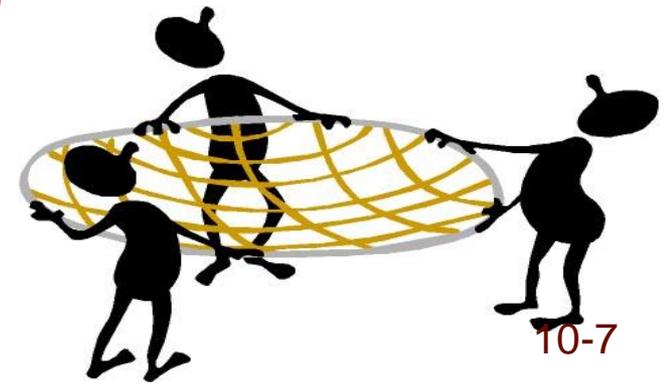
I need to borrow money



Loans: 10%

Deposits: 5%

Heavily Regulated





# Financial Innovation: Bank Credit and Debit Cards

- Many store credit cards existed long before WWII.
- Improved technology in the late 1960s reduced transaction costs making nationwide credit card programs profitable.
- The success of credit cards led to the development of debit cards for direct access to checkable funds.





# Financial Innovation: Electronic Banking

- Automatic Teller Machines (ATMs) were the first innovation on this front. Today, over 250,000 ATMs service the U.S. alone.
- Automated Banking Machines combine ATMs, the internet, and telephone technology to provide “complete” service.
- Will virtual banks on the internet become the primary form for bank business, eliminating the need for physical bank branches?



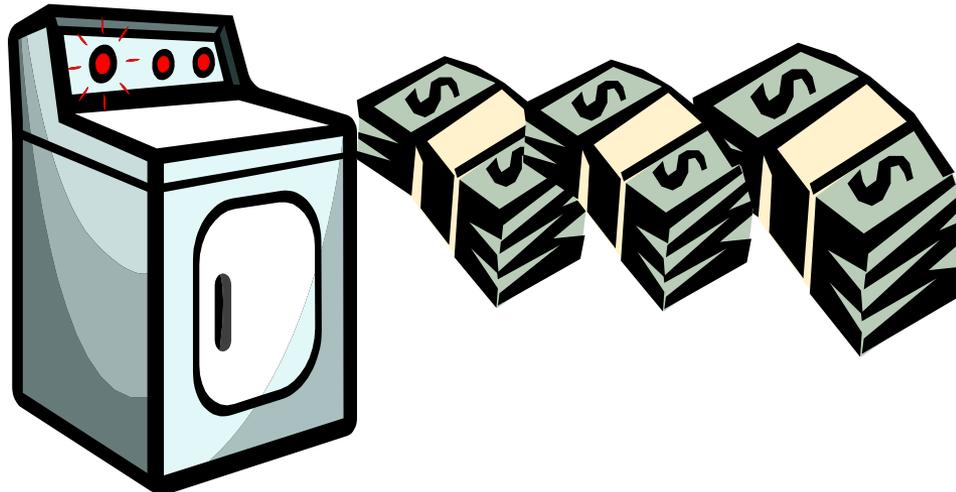
# Financial Innovation: E-Money

- Electronic money, or stored cash, only exists in electronic form. It is accessed via a stored-value card or a smart card.
- E-cash refers to an account on the internet used to make purchases.
- Are we heading toward a cashless society?



# Challenges for E-Banking/E-Money

- Customers may be concerned that their e-banking and e-money are truly secure and private
- Technology glitches are still present
- International money laundering





# Financial Innovation: Securitization

- ***Securitization*** refers to the transformation of illiquid assets into marketable capital market instruments.
- Today, almost any type of private debt can be securitized. This includes home mortgages, credit card debt, student loans, car loans, etc.



# Financial Innovation: Avoidance of Existing Regulations

- Regulations Behind Financial Innovation

1. Reserve requirements

- Tax on deposits =  $i \times r^D$

$r^D$  - Deposits Kept to meet the reserve requirement

$i$  - interest rate in the money market

2. Deposit-rate ceilings (Reg Q)

- As  $i \uparrow$ , banks have more incentives to escape reserve requirement tax and deposit-rate ceilings



# Financial Innovation: Sweep Account

- Sweep Accounts: Funds are “swept” out of checking accounts nightly and invested at overnight rates. Since they are no longer checkable deposits, reserve requirement taxes are avoided.



# The Practicing Manager: Treasury STRIPS

- Developed in the early 1980s
- Avoid reinvestment risk associated with coupon bonds.
- Investment banks were able to profit from the separation of interest into “bonds.”



# Treasury STRIPS

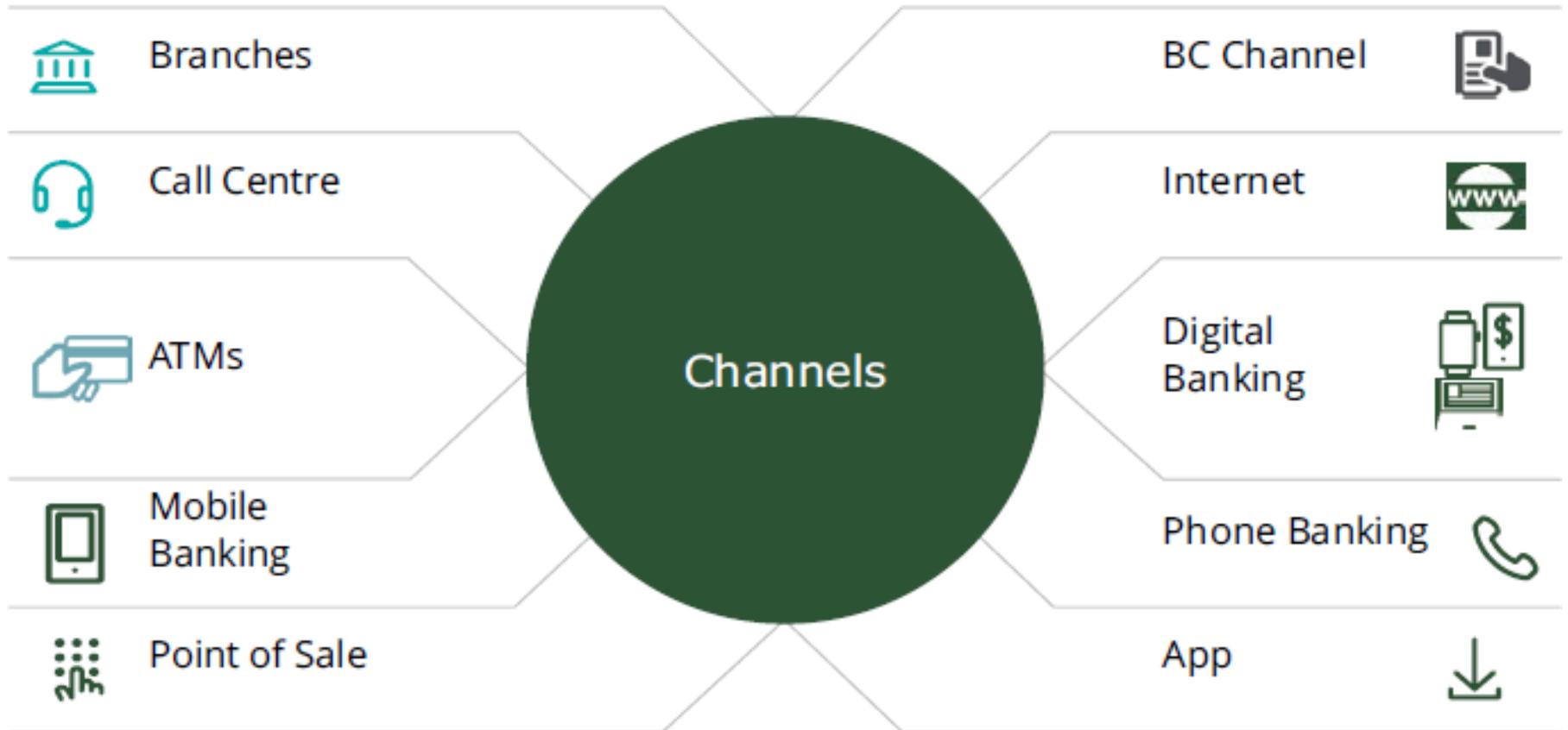
Market Value of Treasury Strip Zero-Coupon Bonds Derived from a \$1 Million 10-Year Treasury Bond with a 10% Coupon Rate and Selling at Par

| (1)<br>Year | (2)<br>Cash<br>Payment (\$) | (3)<br>Interest Rate on<br>Zero-Coupon Bond (%) | (4)<br>Present Discounted Value<br>of Zero-Coupon Bond (\$) |
|-------------|-----------------------------|---|---|
| 1           | 100,000                     | 9.75  | 91,116  |
| 2           | 100,000                     | 9.75  | 83,022  |
| 3           | 100,000                     | 9.75  | 75,646  |
| 4           | 100,000                     | 9.75  | 68,926  |
| 5           | 100,000                     | 9.75  | 62,802  |
| 6           | 100,000                     | 9.75  | 57,223  |
| 7           | 100,000                     | 9.75  | 52,140  |
| 8           | 100,000                     | 9.75  | 47,508  |
| 9           | 100,000                     | 9.75  | 43,287  |
| 10          | 100,000                     | 9.75  | 39,442  |
| 10          | 1,000,000                   | 9.75  | 394,416   |
| Total       |                             |   | <u>\$1,015,528</u>  |



# Traditional vs. Electronic

**Multi Channel presence - Electronic Channels are accounting for a greater share of Bank's transactions**



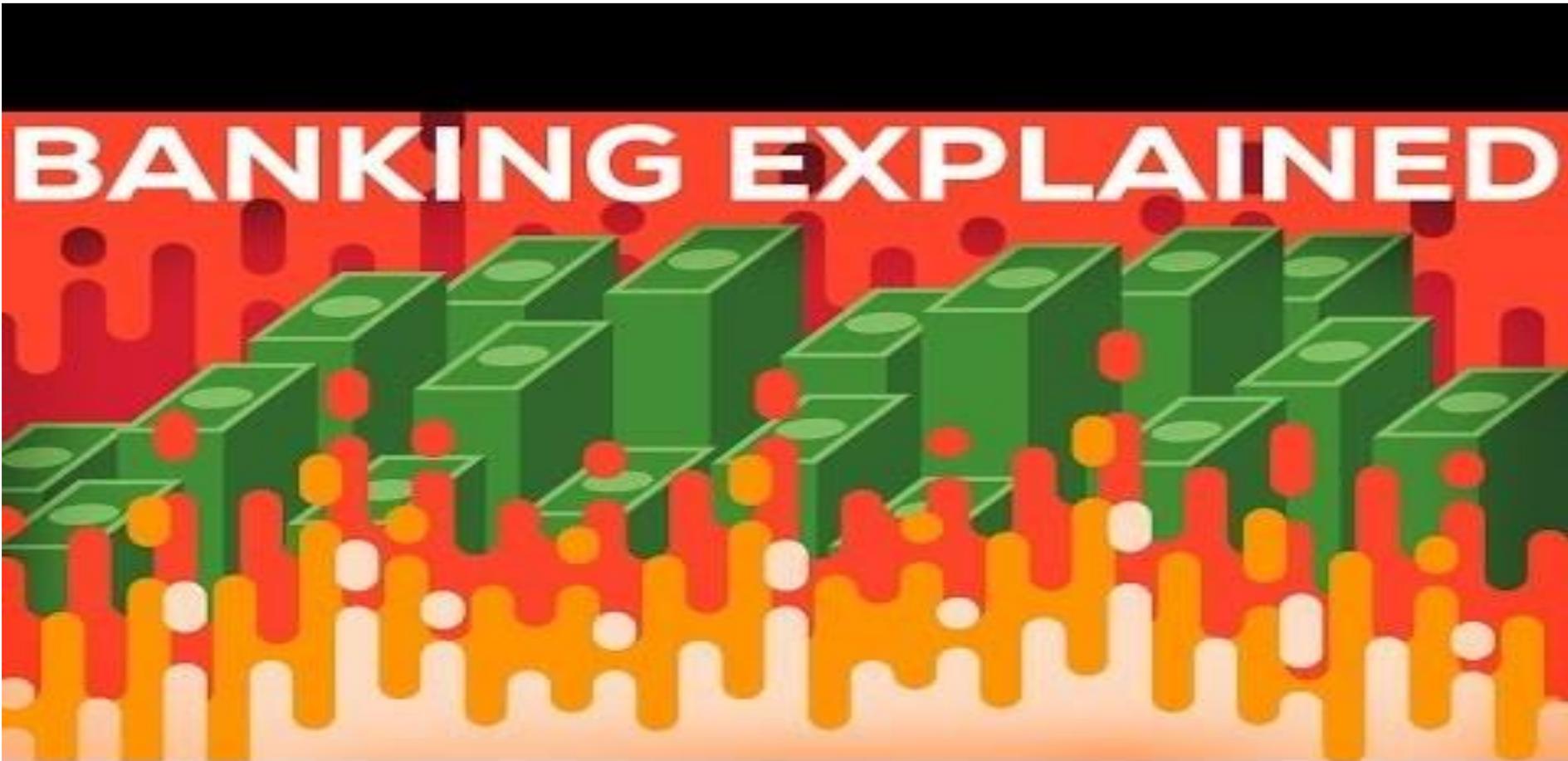
Source: Deloitte

● Traditional ● Electronic



# Banking in a nutshell

[https://www.youtube.com/watch?time\\_continue=1&v=fTTGALaRZoc](https://www.youtube.com/watch?time_continue=1&v=fTTGALaRZoc)





# Financial Innovation and the Decline in Traditional Banking

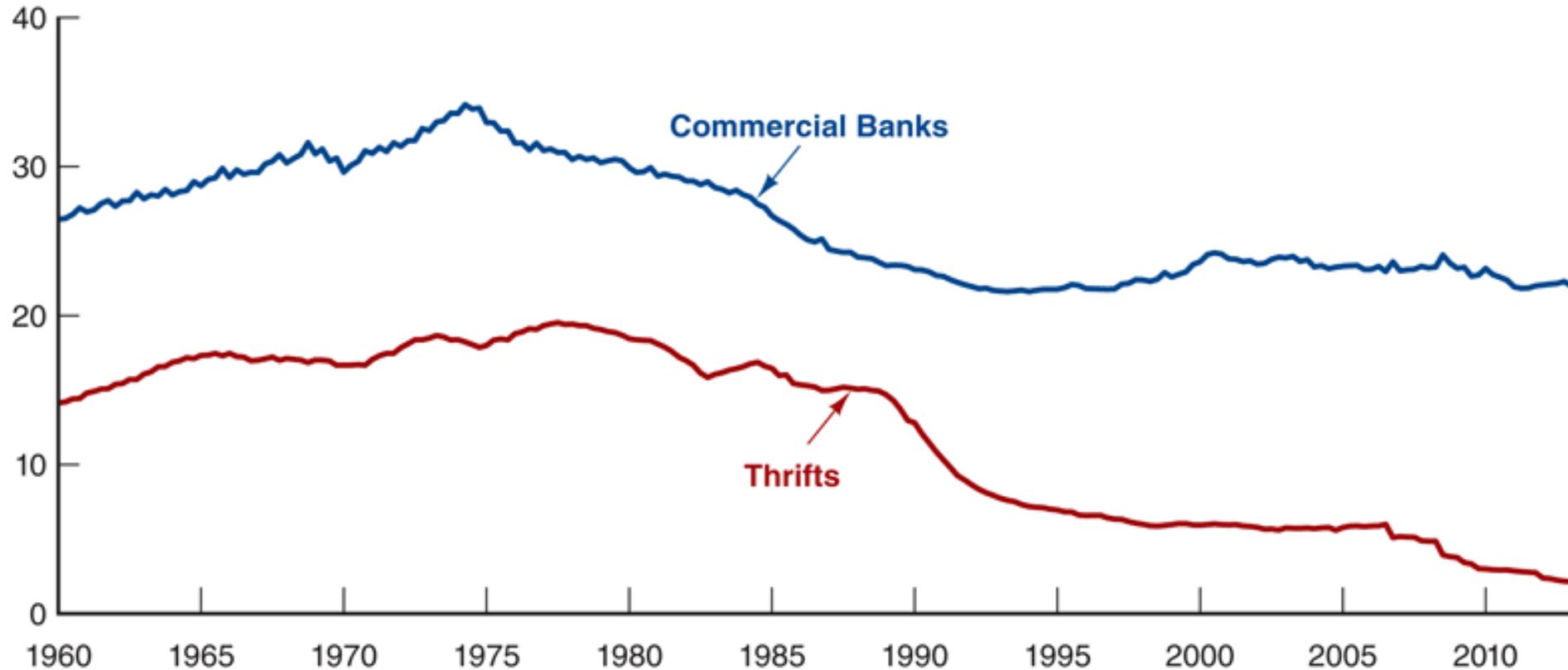
- Asset transformation affected by financial innovation.
- The importance of commercial banks as a source of funds to nonfinancial borrowers has shrunk dramatically.



# Financial Innovation and the Decline in Traditional Banking

## Bank Share of Total Nonfinancial Borrowing, 1960–2013

% of  
Total Credit  
Advanced





# Financial Innovation and the Decline in Traditional Banking

- Decline in Cost Advantages in Acquiring Funds (Liabilities)
  - $\pi \uparrow$   $i \uparrow$ , then disintermediation because
    1. Deposit rate ceilings and regulation Q
    2. Money market mutual funds
- Checkable deposits fell from 60% of bank liabilities to only 5% today.



# Financial Innovation and the Decline in Traditional Banking

- Decline in Income Advantages on Uses of Funds (Assets)
  1. Easier to use securities markets to raise funds: commercial paper, junk bonds, securitization
  2. Finance companies more important because easier for them to raise funds



# Banks' Responses

- Loss of cost advantages in raising funds and income advantages in making loans causes reduction in profitability in traditional banking
  1. Expand lending into riskier areas (e.g., real estate)
  2. Expand into off-balance sheet activities
- Creates problems for regulatory system
- Similar problems for banking industry in other countries



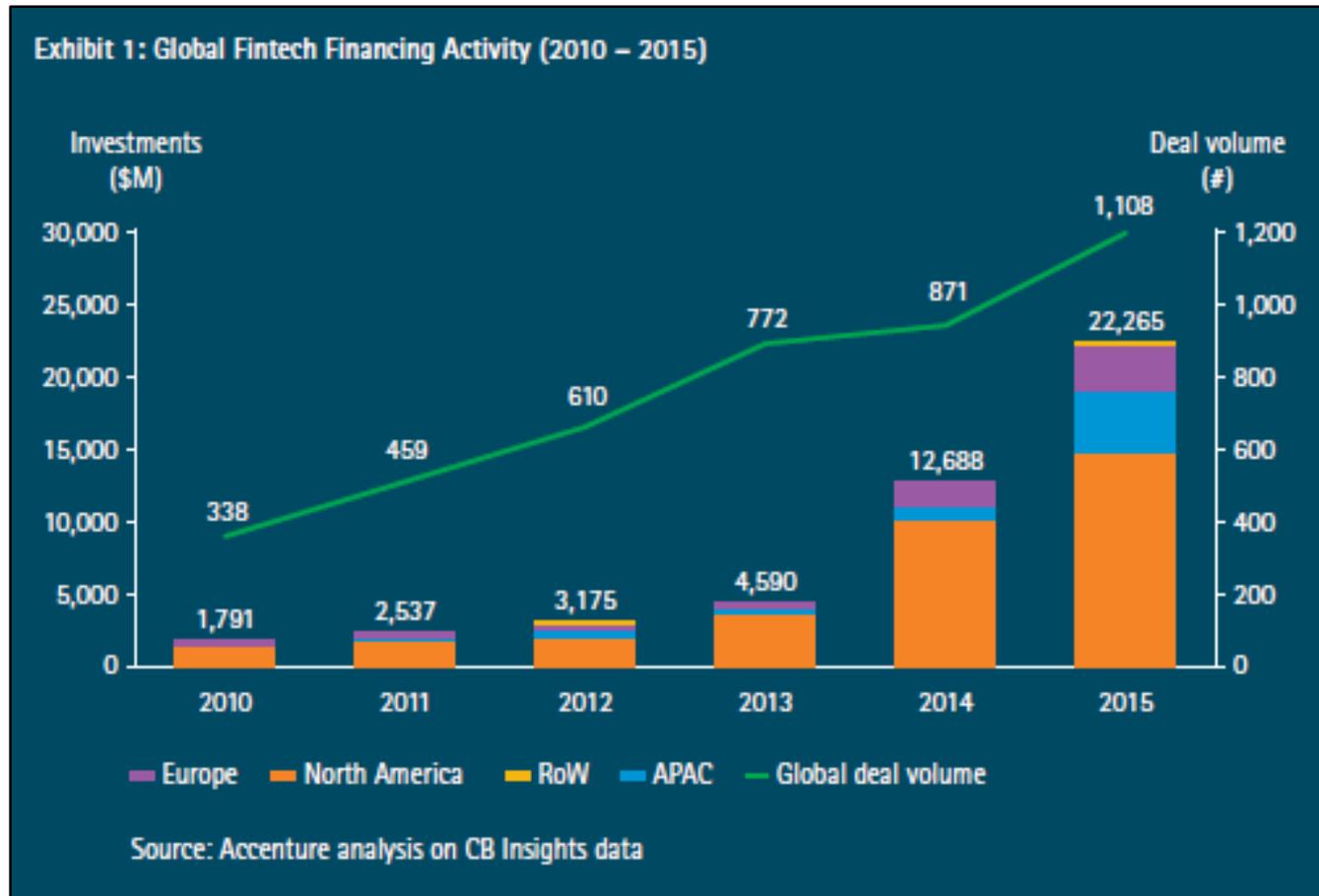
# Decline in Traditional Banking in Other Industrialized Countries

- Forces similar to those in the U.S. have led to a similar decline in other industrialized countries.
- For example, Australian banks have lost business to international securities markets
- In many countries, as securities markets develop, banks also face competition from the new products offered



# Fintech

- Global investments in Fintech ventures grew by 75% reaching \$22.3bn in 2015 (\$12.7bn in 2014)





# Innovation in payments

- **mPOS** - mobile points of sale
  - small businesses
  - merchants in low-margin segments
  - development of hardware and end-user software



# Crowdfunding

- **Crowd-based financing**
- Corporate crowdfunding was recently encouraged in the U.S. — the world's largest crowdfunding market so far.
- Decision of the SEC to let small businesses raise up to \$50 million from the general public, in connection with the JOBS Act.
- Example: LendingClub



# Digital Banking

- China has become a leading innovator in digital banking in part because of a favourable regulatory environment.
- Digital-only banks will likely be targeting a younger, more digitally savvy customer than incumbent banks.
- Marketing is a major cost, representing 25 to 35 percent of total operating expenses.
- Examples: mBank – Poland; AirBank - Czech Republic



# Digital Innovation across different areas of the financial sector

## Payment services and market infrastructures

- E-money and mobile money products
- Application program interfaces allowing overlay of services on existing products
- Use of distributed ledger technologies for new ways of structuring market infrastructures

## Leveraging transaction data and other sources of data for credit appraisals

- Transaction data from e-commerce and payment platforms like **Alibaba, WeChat** and **Paypal**
- Mobile phone usage data
- Social Network related data

## Deposits, Lending and Capital Raising

- Crowd-sourcing ideas and funding them through crowd-funding
- Peer 2 peer lending
- Internet-only banks

## Investment Management

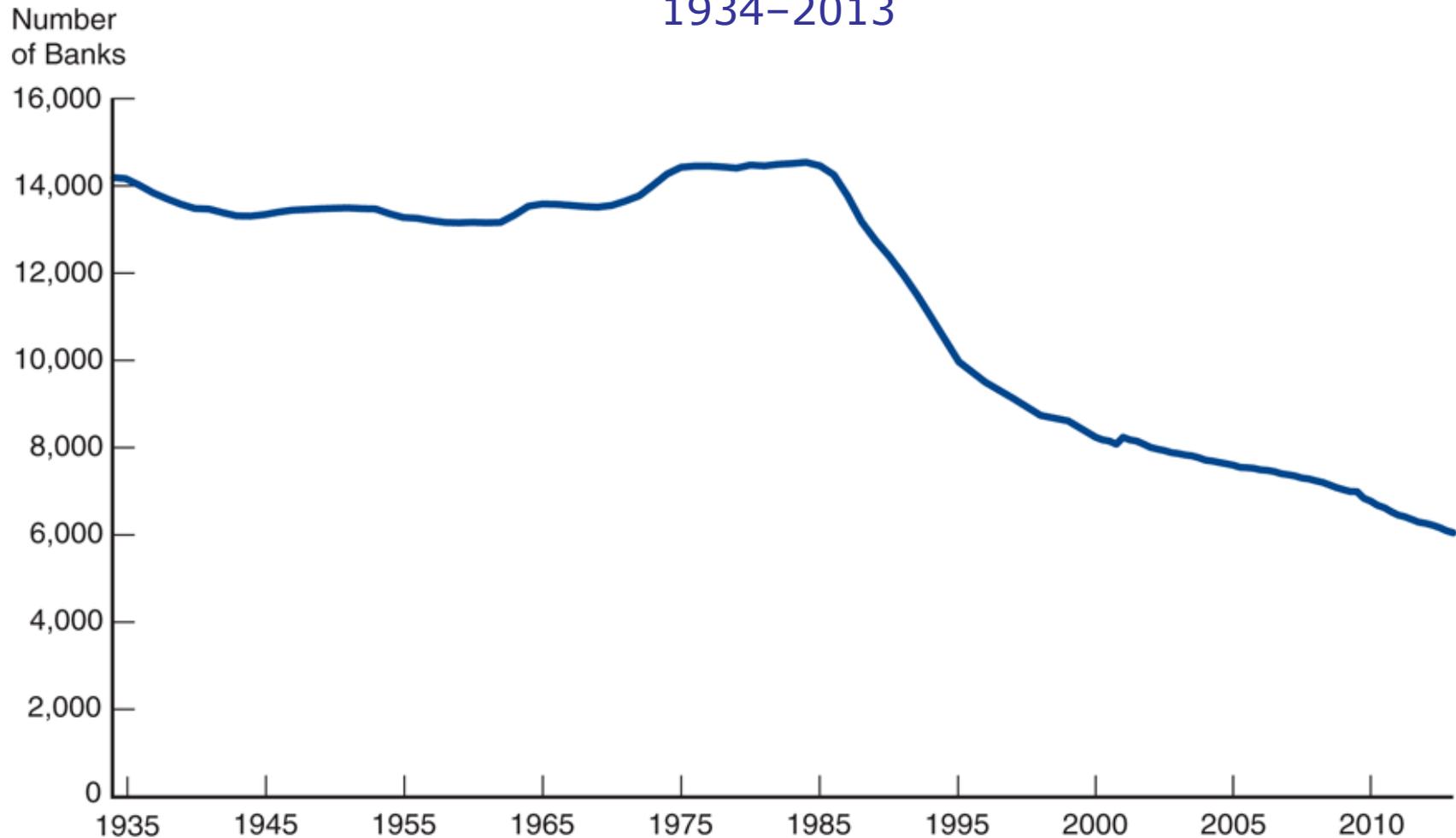
- Automated processing and dissemination of investment advice

Potential to significantly enhance efficiencies, reduce costs and expand access to financial services



# Bank Consolidation Trend

Number of Insured Commercial Banks in the United States,  
1934–2013





# Commercial Banking Industry

## Size Distribution of Insured Commercial Banks, March 31, 2013

| <b>Assets</b>             | <b>Number of Banks</b> | <b>Share of Banks (%)</b> | <b>Share of Assets Held (%)</b> |
|---------------------------|------------------------|---------------------------|---------------------------------|
| Less than \$100 million   | 1,954                  | 32.1                      | 0.9                             |
| \$100 million–\$1 billion | 3,607                  | 59.2                      | 7.9                             |
| \$1 billion or more       | 535                    | 8.8                       | 91.2                            |
| Total                     | 6,096                  | 100.00                    | 100.00                          |

Source: <http://www2.fdic.gov/sdi/main.asp>.

Banking assets are managed by a few large sized banks



# Top 10 Banks in the World (2017-2018)

| Rank | 2017                               | 2018                               |
|------|------------------------------------|------------------------------------|
| 1    | JP Morgan Chase & Co (U.S.)        | JP Morgan Chase & Co (U.S.)        |
| 2    | Well Fargo & Co. (U.S.)            | ICBC (China)                       |
| 3    | ICBC (China)                       | Bank of America (U.S.)             |
| 4    | Bank of America (U.S.)             | Well Fargo & Co. (U.S.)            |
| 5    | China Construction Bank (China)    | China Construction Bank (China)    |
| 6    | HSBC Holding (U.K.)                | HSBC Holding (U.K.)                |
| 7    | Citi Group Inc. (U.S.)             | Agricultural Bank of China (China) |
| 8    | Agricultural Bank of China (China) | Citi Group Inc. (U.S.)             |
| 9    | Bank of China (China)              | Bank of China (China)              |
| 10   | Common Wealth Bank of Australia    | China Merchant Bank                |



# Top 10 Banks in the World (2019)

| Rank | Banks  | Assets (US \$ billion) |
|------|--|------------------------|
| 1    | Industrial and Commercial Bank of China (ICBC) | 4,009                  |
| 2    | China Construction Bank Corporation            | 3,400                  |
| 3    | Agricultural Bank of China                     | 3,235                  |
| 4    | Bank of China                                  | 2,991                  |
| 5    | Mitsubishi UFJ Financial Group                 | 2,780                  |
| 6    | JPMorgan Chase                                 | 2,533                  |
| 7    | HSBC Holdings plc.                             | 2,520                  |
| 8    | BNP Pariba                                     | 2,357                  |
| 9    | Bank of America (BoA)                          | 2,281                  |
| 10   | Crédit Agricole                                | 2,117                  |



# Is Bank Consolidation Good?

## —Pros

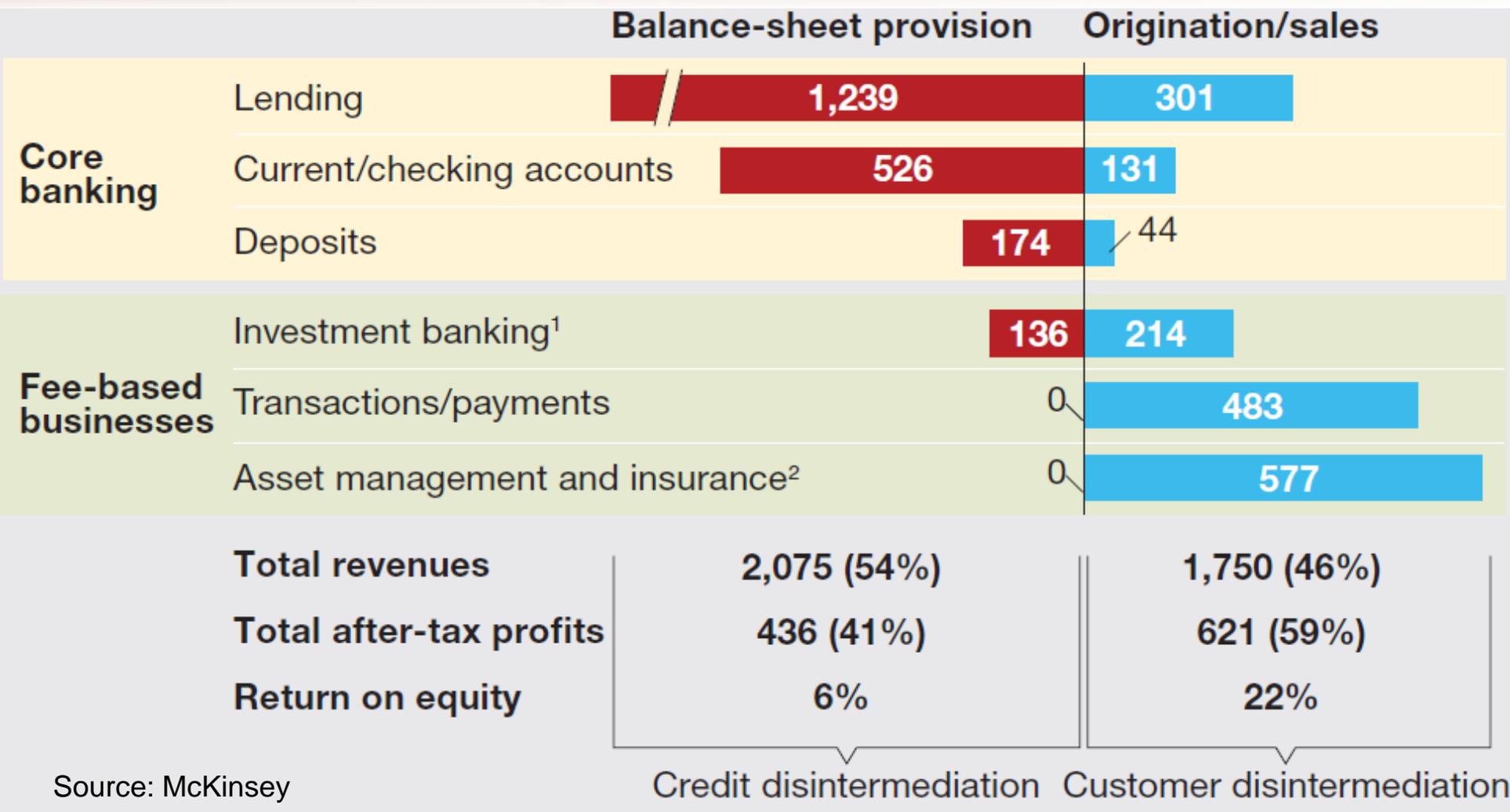
1. Increase competition and efficiency
2. Increased diversification of bank loan portfolios: lessens likelihood of failures

## —Cons

1. Fear of decline of small banks and small business lending
2. Rush to consolidation may increase risk taking



# Global banking revenues and profits by activity, 2014, \$ billion



Source: McKinsey

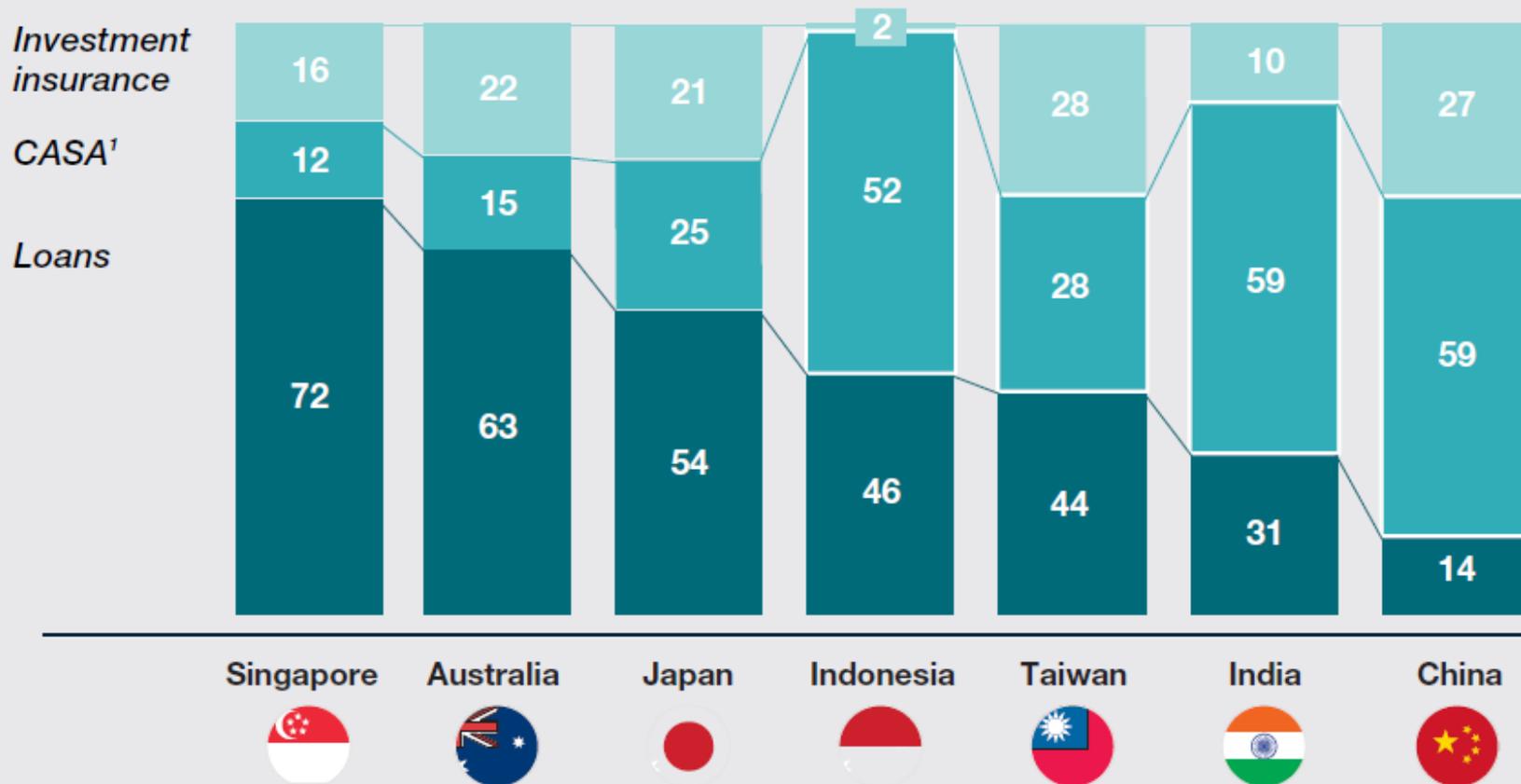
1 Corporate finance, capital markets, securities services.

2 Asset management includes investment and pension products. Insurance includes bank-sold insurance only.

# Retail-banking Revenue

## Retail-banking revenue pool

Split of postrisk revenues pools by product category—percentages, 2015





# Next Topic

- Mutual Funds
- Mishkin and Eakins (2015) Chapter 20