FN 211 Financial Markets

Class 7: Commercial Banks

By Martina Watcharawaratorn

Mr. Smith Banomyong

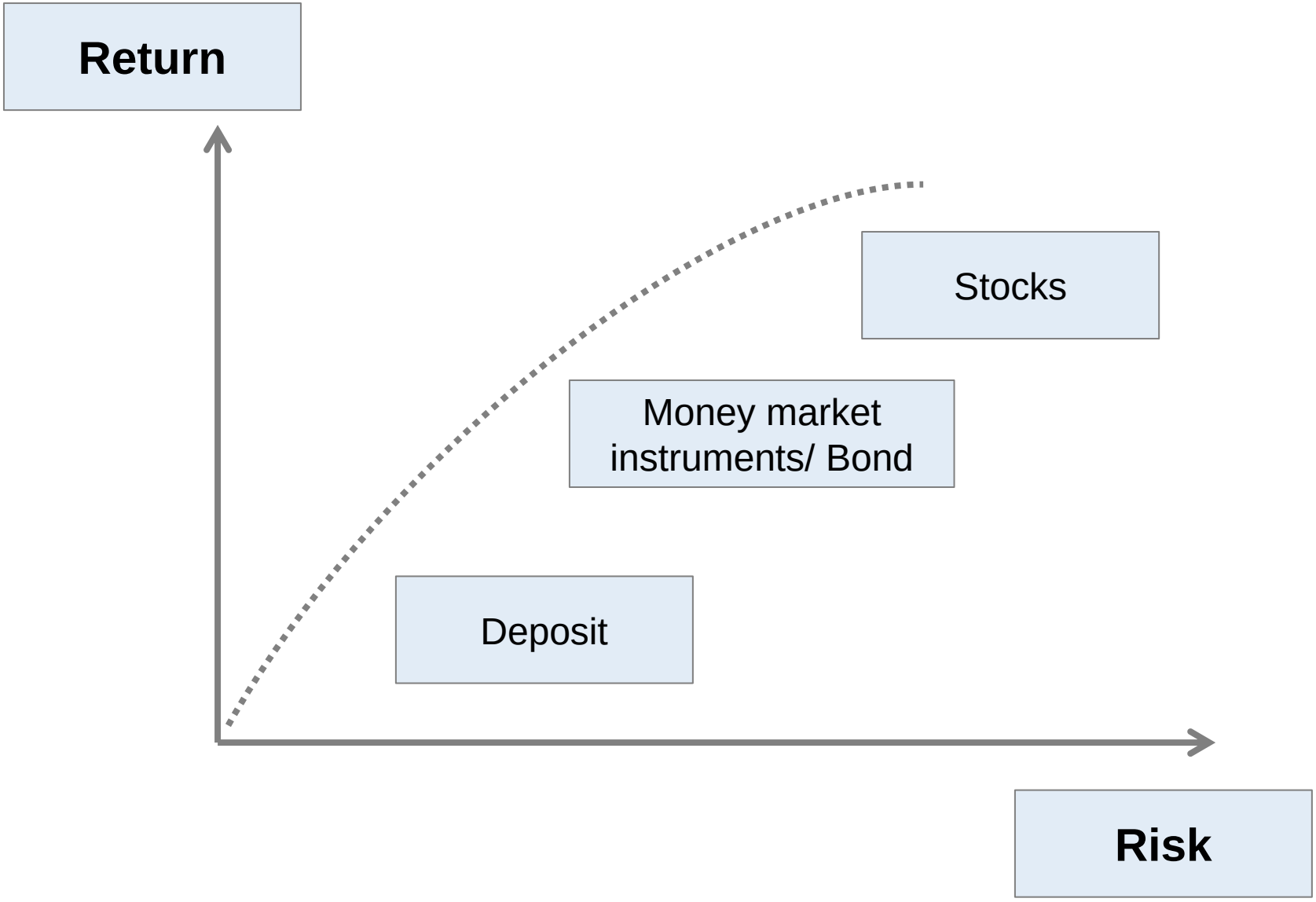
-President of Siam Commercial Bank Asset Management Co. Ltd.
-Served as an Executive Vice President of Wealth Division at The Siam Commercial Bank Public Company Limited.
-Head of Corporate Strategy and Executive Vice President at SCB since September 2010.
-His experiences include credit trading in Asia Pacific and global relationship banking at the firm's Hong Kong and Bangkok offices, global management in emerging markets, including China and India.

-Earned Best Asset & Fund Manager awards at the Annual Best Financial Institution Awards 2015 held by Alpha Southeast Asia, the leading institutional magazine in the region.

-He holds an M.Sc. in Economics from the London School of Economics and Political Science, a B.A. in Economics from Reed College, and a B. Engineering degree from Chulalongkorn University.

Contents

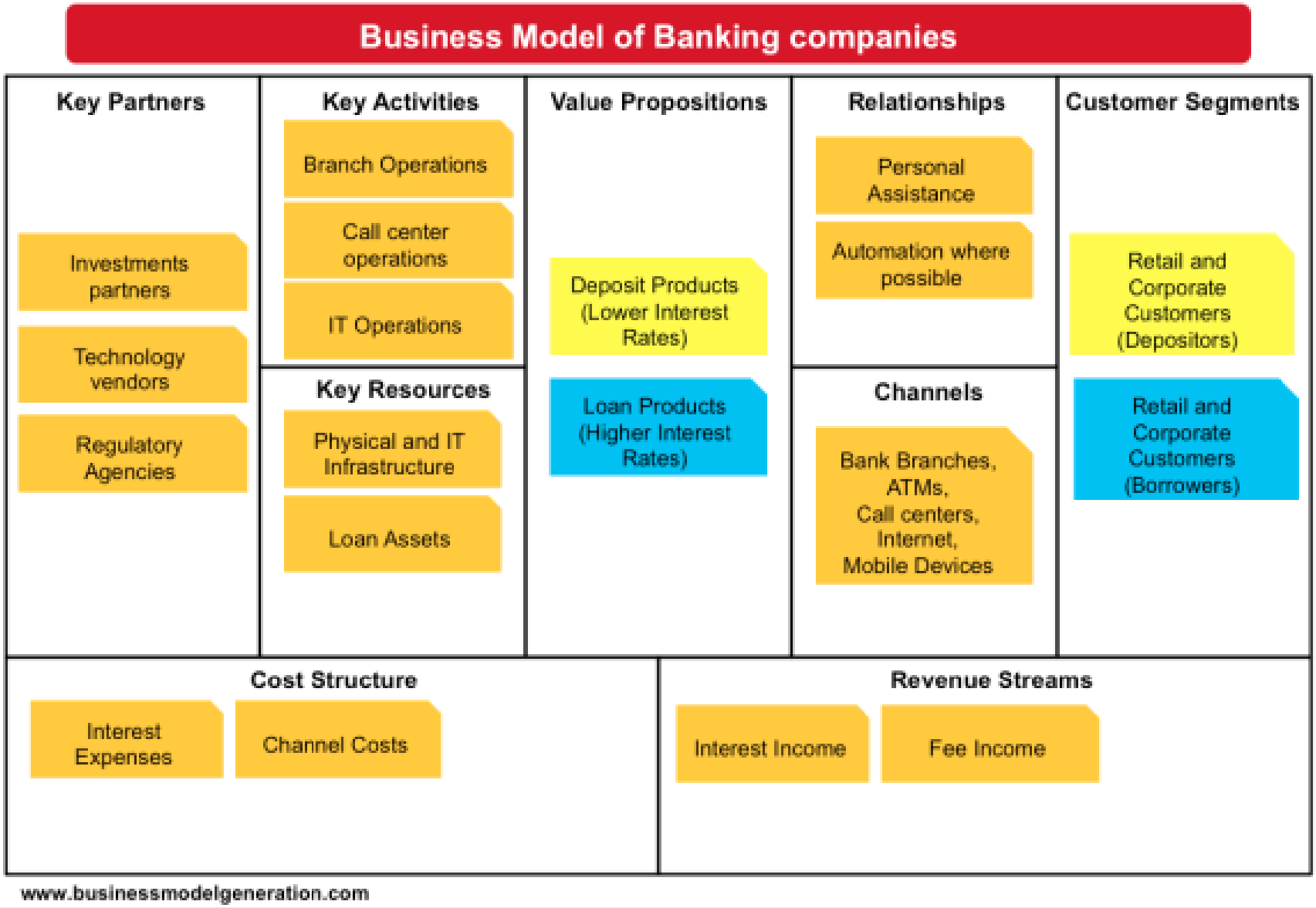
Overview: Risk & Return



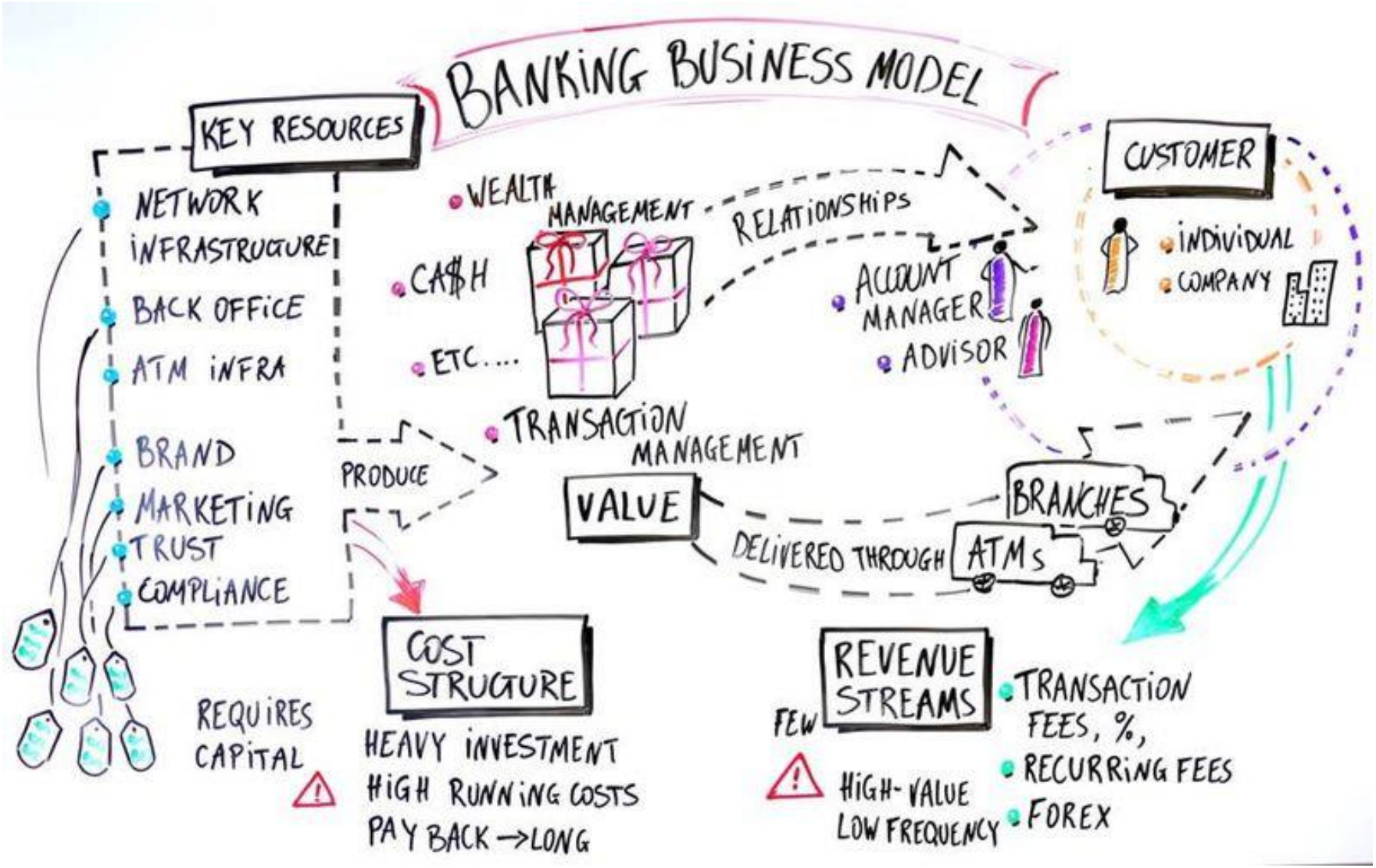
Why we need to study about a commercial bank?

1. Banking products involve your every day's life.
2. As a consumer, you need to understand a commercial bank's business model.
3. As an investor, you may need to measure performance of a commercial bank?

Business Model of a commercial bank



Banking Business Model



Contents

I start my small bank ….

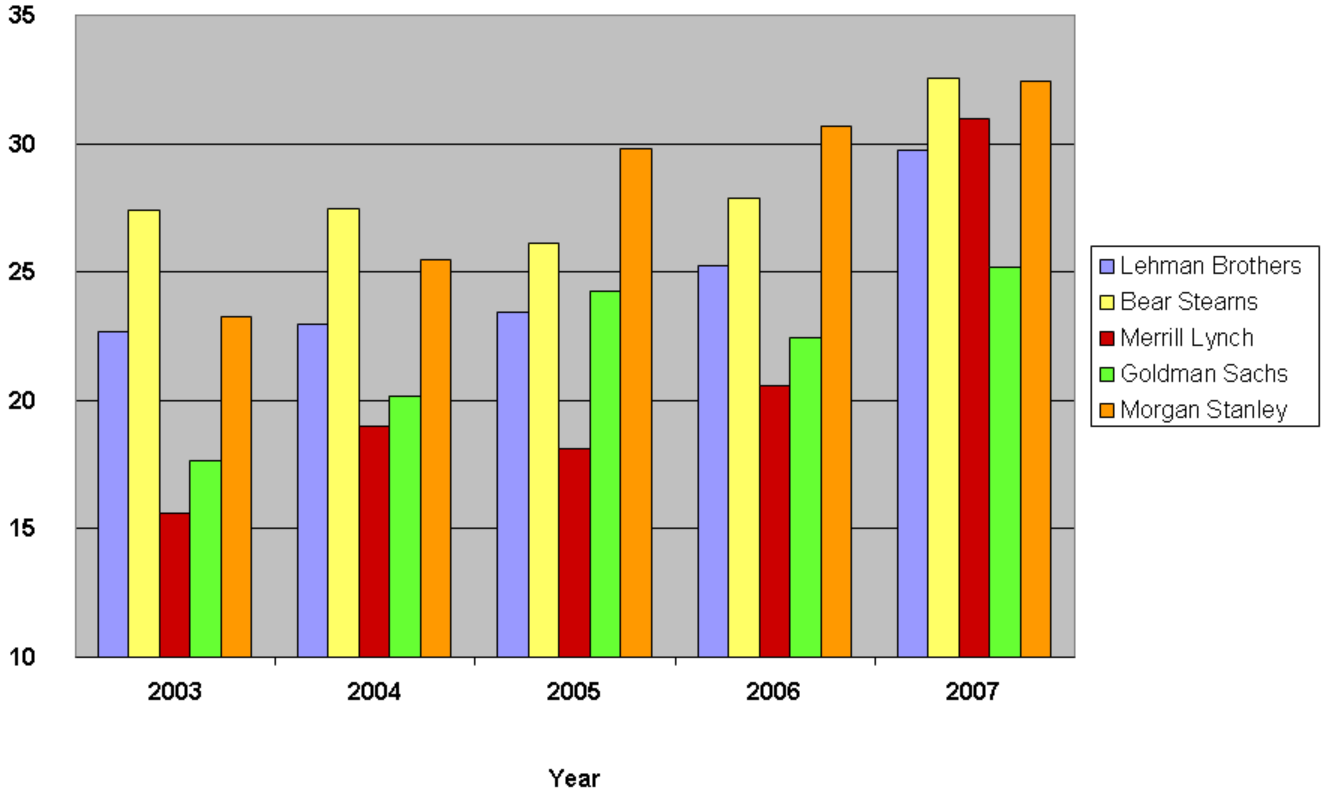
Cash	$1,000,000
Loans $9,000,000 (8% interest rate)	
	$1,000,000

Deposits	$10,000,000 (3% interest rate)
My equity	$1,000,000

When banks are overleveraged …

Leverage Ratios For Major Investment Banks

The leverage ratio is a measure of the risk taken by a firm; a higher ratio indicates more risk.
It is calculated as total debt divided by stockholders equity. Each firm's ratio increased between 2003-2007.



Source Data: Company Annual Reports (SEC Form 10K)

Balance Sheets and Recent Trends

Assets

- Cash
- Investments
- Loans
- Other assets

Liabilities

- Deposits
- Borrowings

Equity

Balance Sheets and Recent Trends

Balance Sheet of Thai Commercial Banks as of Dec 2011		
	Million Baht	**%**
Cash	233,908	1.80%
Due from Financial Institutions and Money Market	1,589,804	12.25%
Investments in Securities (Net)	1,900,741	14.64%
Credits (Net)	8,199,592	63.16%
Premises and Equipment (Net)	170,977	1.32%
Other Assets (Net)	886,715	6.83%
Total Assets	**12,981,737**	**100.00%**
Deposits	7,864,597	60.58%
Due to Financial Institutions and Money Market	716,545	5.52%
Borrowings	2,004,532	15.44%
Other Liabilities	805,420	6.20%
Stockholders' Equity	1,590,643	12.25%
Total Liabilities and Equities	**12,981,737**	**100.00%**

Balance Sheets and Recent Trends

Assets

Primary reserves consist of cash and deposits held with other banks.

- These reserves are the banker's first line of defense against withdrawals by depositors and customer demand for loans.
- Banks generally hold no more cash than is absolutely required to meet short-term contingencies, however, because the yield on cash assets is minimal.

Balance Sheets and Recent Trends

Assets

Secondary reserves consist of investments in (mostly) short-term government securities.

- Commercial banks hold securities acquired in the open market as a long-term investment and as a secondary reserve to help meet short-term cash needs.

- Banks generally favor short-term government securities (T-bills, BOT bonds and short-term government bonds) because these securities can be marketed readily to cover short-term cash needs and are free of default risk.

Balance Sheets and Recent Trends

Assets
Loans

- Banks make loans of reserves to other banks through the interbank market (e.g. at BIBOR rate) and to central bank through repurchase agreement (*securities purchased under reverse repo/resale agreements*).
- However, the principal business of commercial banks is to make loans to qualified borrowers. These loans arise from negotiation between the bank and its customer and result in a written agreement designed to meet the specific credit needs of both parties.
- Loans are among the highest yielding assets a bank can add to its portfolio, and they often provide the largest portion of traditional banks' operating revenue.

Balance Sheets and Recent Trends

Assets

Loans can be in many forms…

- Short-term loans to businesses to support purchase of inventory
- Long-term loans to businesses to finance purchase of buildings, machinery, equipment, construction of residential and commercial structures, etc.
- Loans to individuals to finance the purchase of residential properties, automobiles, education, etc.

Balance Sheets and Recent Trends

Liabilities

Deposits are primary sources of funding. There are 3 main types of deposits.

- Demand or checking deposits are means of making payments because they are safer than cash and are widely accepted.
- Savings deposits bear relatively low interest rate *(0.75% at the moment)* but may be withdrawn conveniently through ATM machines by the depositor with no notice.
- Time deposits carry a fixed maturity (3-, 6-, or 12-month) and usually offer higher interest rates *(1.00-3.00% at the moment)*.

Balance Sheets and Recent Trends

Liabilities

Non-deposits funds or borrowings include

- Borrowing from other banks in the interbank market and from the central bank through repurchase agreement (*securities sold under repurchase agreements*)
- Issuance of Subordinated Bonds or Bill of Exchange (B/E)
- Issuance of Hybrid Bonds which are bonds that pay coupon interest but can be classified as 'Tier I' or 'Tier II' capital for the purpose of meeting the capital adequacy requirements.
  - *Examples are Stapled Limited Interest Preferred Securities (SLIPS), and Capital Augmented Preferred Securities (CAPS), issued by Thai commercial banks after the Financial Crisis of 1997.*

Balance Sheets and Recent Trends

Stockholders' Equity

- Very small portion, meaning banks are highly leveraged (a relatively small amount of loan defaults can wipe out equity, leaving it insolvent)
- Regulators require banks to hold a minimum level of equity to act as a buffer

Balance Sheets and Recent Trends

Off-Balance-Sheet activities are not recorded on a bank's balance sheet and using up little of no bank capital but help banks provide services to their customers and earn fee income.

Off-balance-sheet asset - when an event occurs, this item moves onto the asset side of the balance sheet or income is realized on the income statement

Off-balance-sheet liability - when an event occurs, this item moves onto the liability side of the balance sheet or an expense is realized on the income statement

Balance Sheets and Recent Trends

Off-Balance-Sheet activities: Examples

Issue standby letters of credit (LC) on behalf of their customers who borrow from another lender. LCs contain the bank's pledge to pay or guarantee if its customer cannot pay the third party.

Securitized assets which have included packages of auto, credit-card, and home mortgage loans. These packaged loans generate interest and principal payments which are passed through to investors who purchased the securities backed by these loans.

Balance Sheets and Recent Trends

Sources of Income

Interest Spread – is the difference between interest earned on loans and interest paid for deposits

- MLR = 6.00%, 1-year Deposit Rate = 1.00%, Gross spread is 5.00%

Investment Income – profit from trading or investing in bonds, stocks, and money market securities, normally ‘non-recurring’

Fee Income – from services such as issuing letters of credits, money transfer, foreign exchange, issuing new ATM card or credit cards, custodian (or trustee)

Analyzing a bank

2 risks concerning a commercial banks…

- **Interest rate risk** is the management of the spread between interest paid on deposits and received on loans over time.
- **Credit risk** is the likelihood that a borrower will default on a loan or lease, causing the bank to lose any potential interest earned as well as the principal that was loaned to the borrower.

Contents

Impact of Rising Interest Rates

Economic Surplus can be defined as

$$MV_{assets} - MV_{liabilities}$$

A bank with longer asset duration relative to the duration of its liabilities will experience a decline in its economic surplus if interest rate rises, because the longer duration of the assets will cause their market value to fall more than the market value of the liabilities fall.

Impact of Rising Interest Rates

Example: Assume that Primo Bank has a balance sheet with the market value of its asset portfolio equal to $50 billion and the present value of its liabilities equal to $40 billion. Calculate Primo's economic surplus.

$$\text{Economic surplus} = MV_{\text{assets}} - MV_{\text{liabilities}}$$
$$= 50 - 40$$
$$= 10 \text{ billion}$$

Impact of Rising Interest Rates

Example: Now assume
Interest rates rise by 100 basis points.
Modified Duration of Primo's assets is 5.0
Convexity of Primo's assets is 22.5
Modified Duration of Primo's liabilities is 3.0
Convexity of Primo's liabilities is 45

Calculate Primo's economic surplus after the interest rate change.

Impact of Rising Interest Rates

Answer:

% change = (-)(MD)(Δy) + (convexity) (Δy)^2

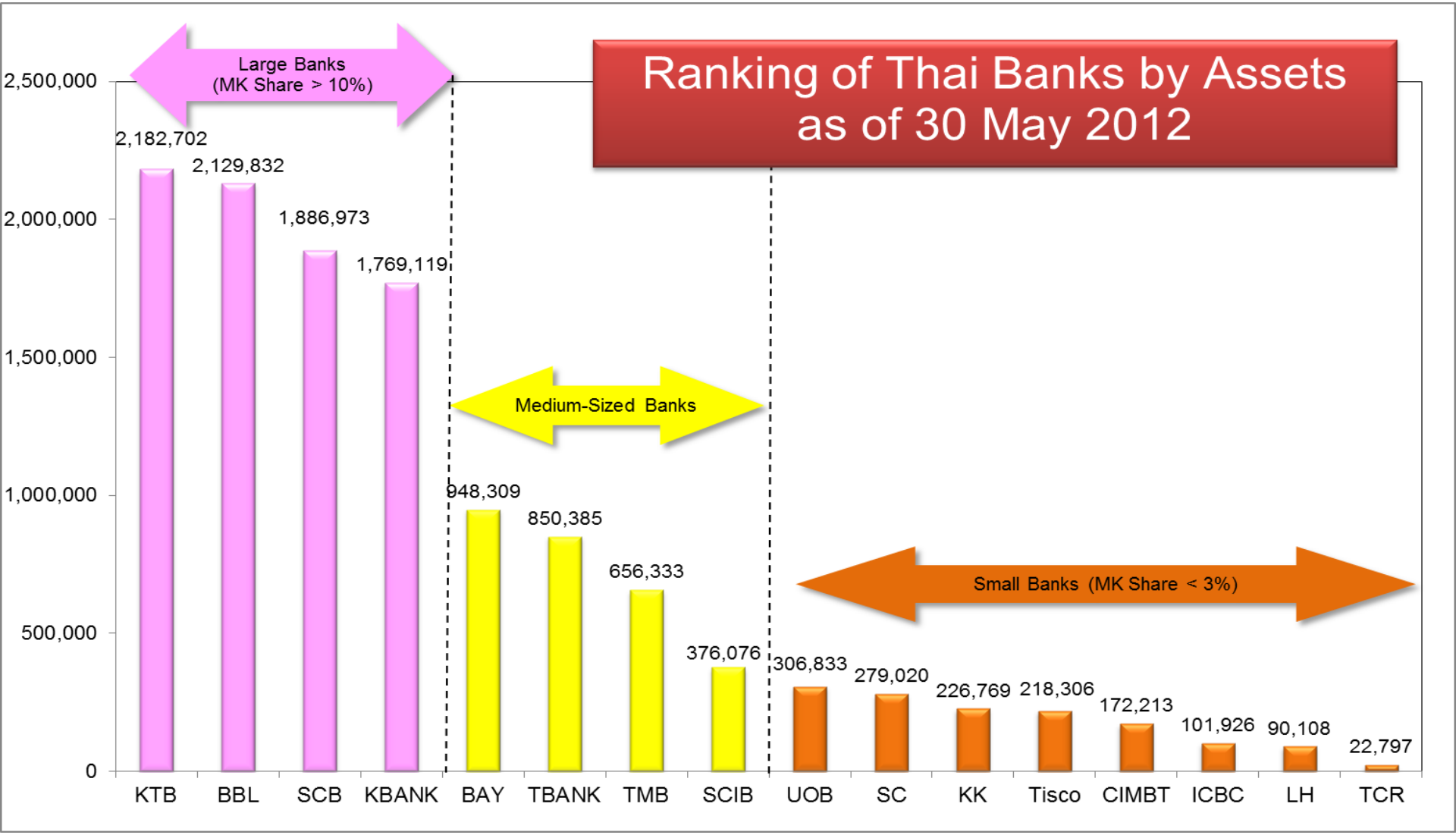
For assets: = (-)(5)(0.01) + (22.5)(0.01)^2 = -4.775%

For liabilities= (-)(3)(0.01) + (45)(0.01)^2 = -2.55%

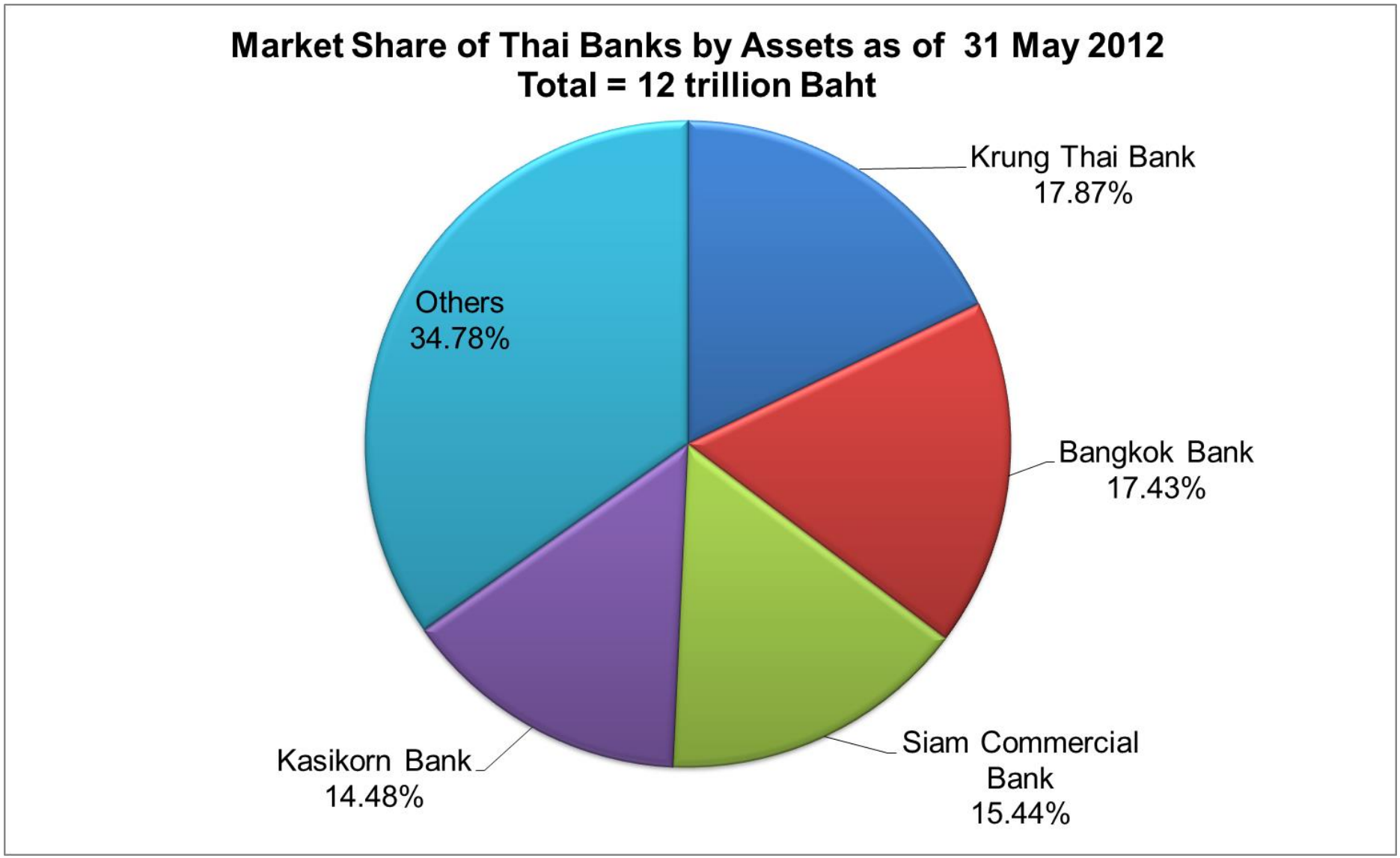
Asset value	= 50,000(1-0.04775) =	47,612.5 million
Liabilities value	= 40,000(1-0.0255) =	-38,980 million
Economic surplus	=	8,632.5 million

Contents

The Banking Industry



The Banking Industry



The Banking Industry

Current Trends

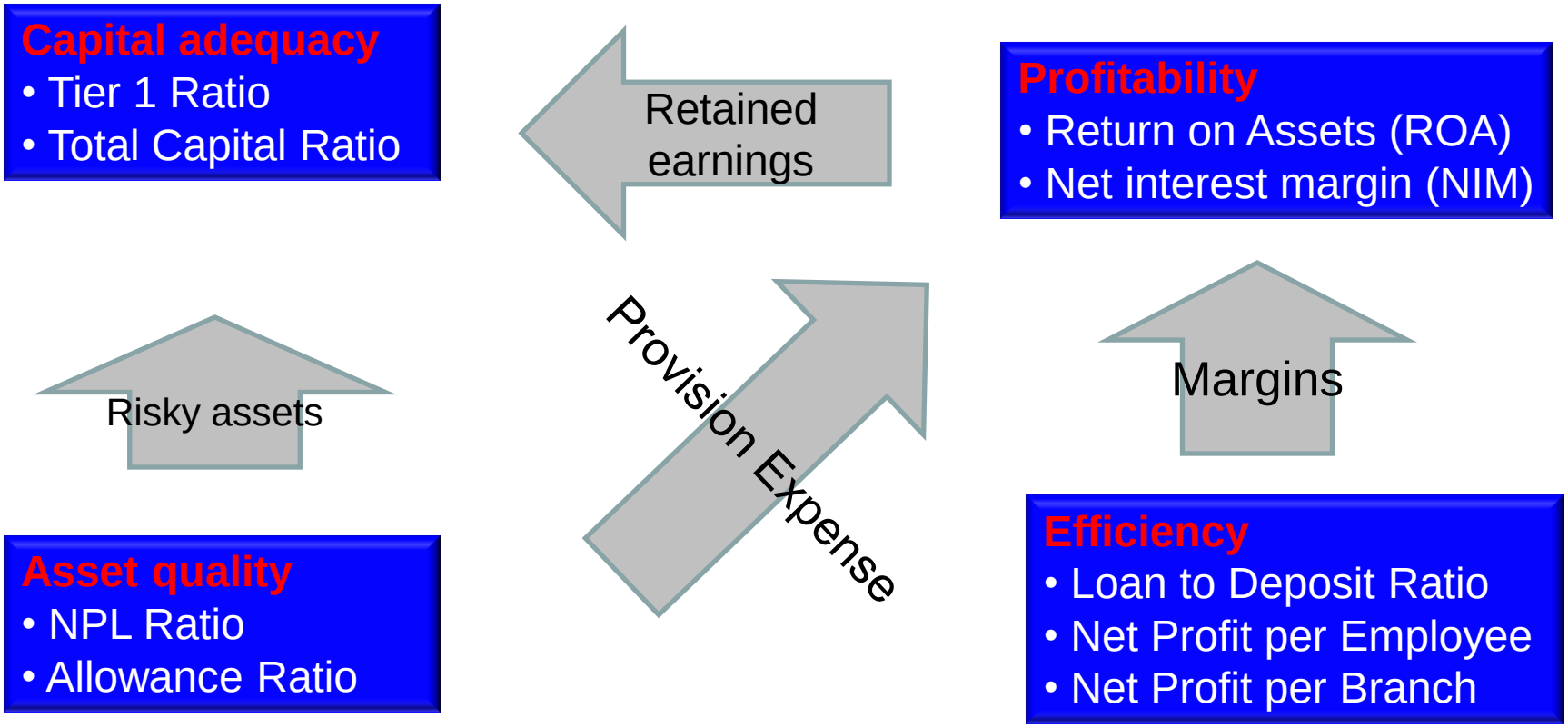
Fee-based Income – banks are now selling insurance, mutual funds, personal loans, credit cards, money transfer, payment services, etc.

Private Banking and Wealth Management – providing complete and customized services for high net worth individuals, with assets of at least 3 million baht. It is estimated that there are 160,000 of them in Thailand.

Loans for SMEs – given matured lending business for large companies, banks are going after SME sector with higher yield and more room to grow.

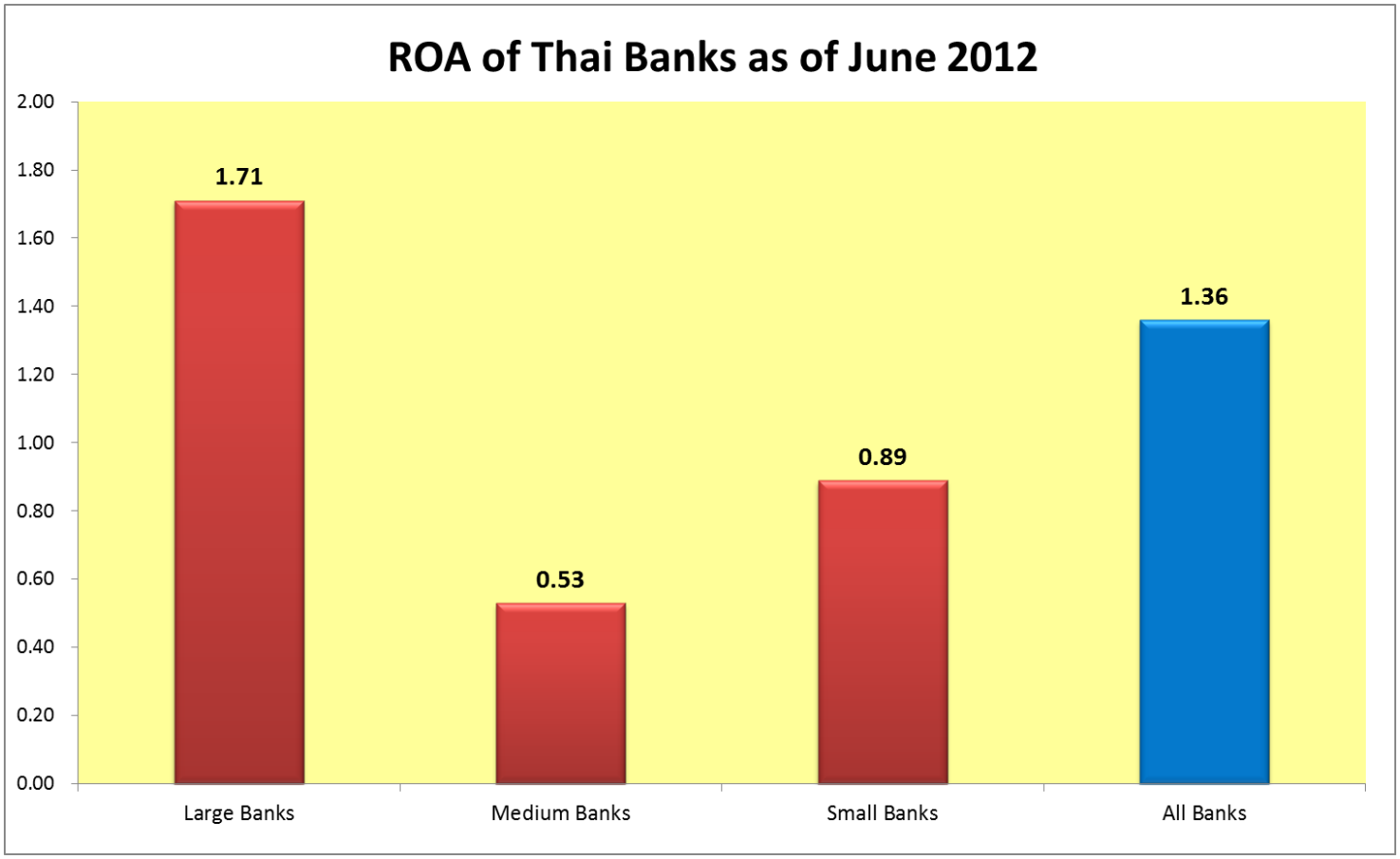
Contents

How to measure bank's performance



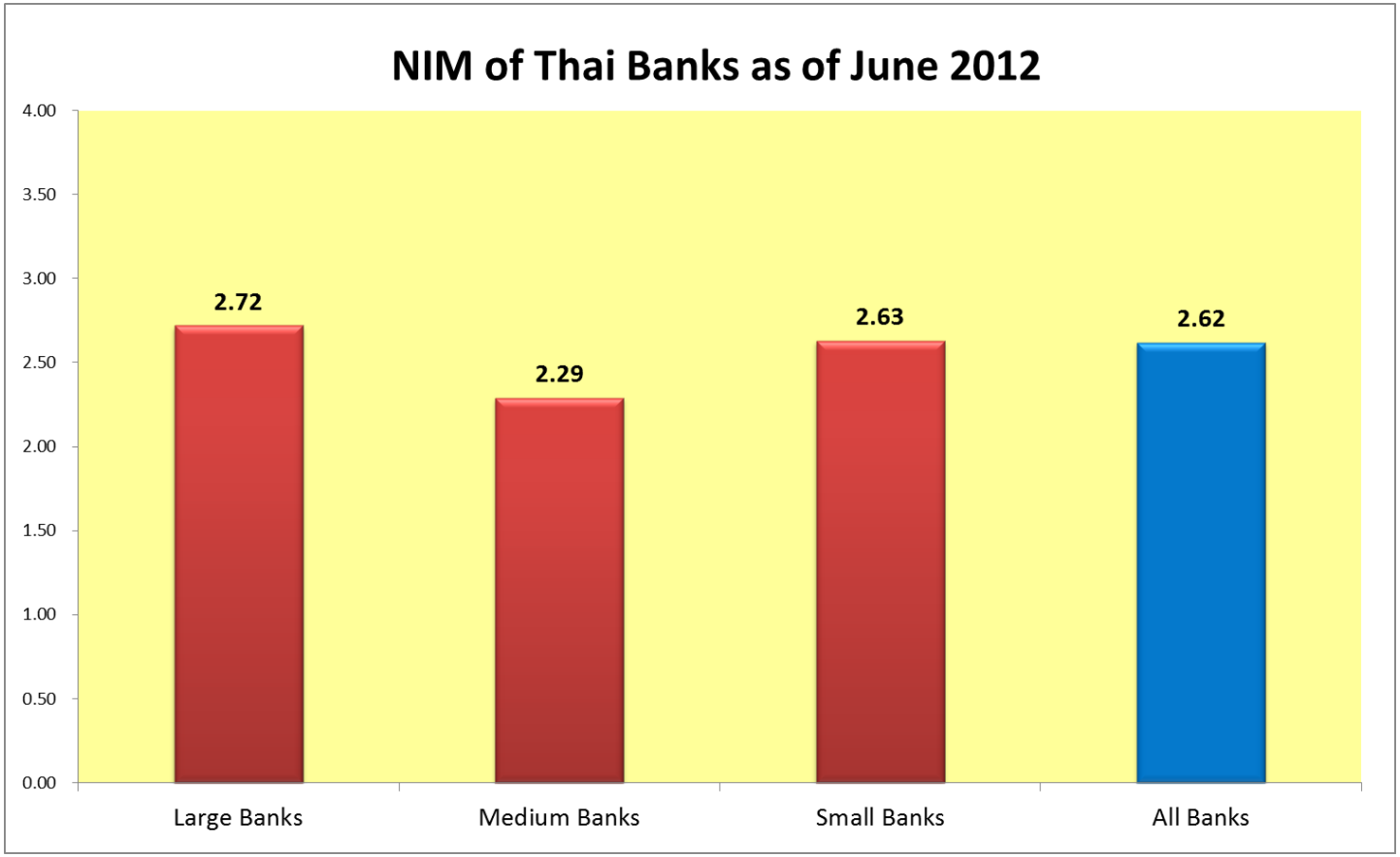
1. Profitability

$$\text{Return on Assets (ROA)} = \frac{\text{Net Profit}}{\text{Average Net Assets}}$$



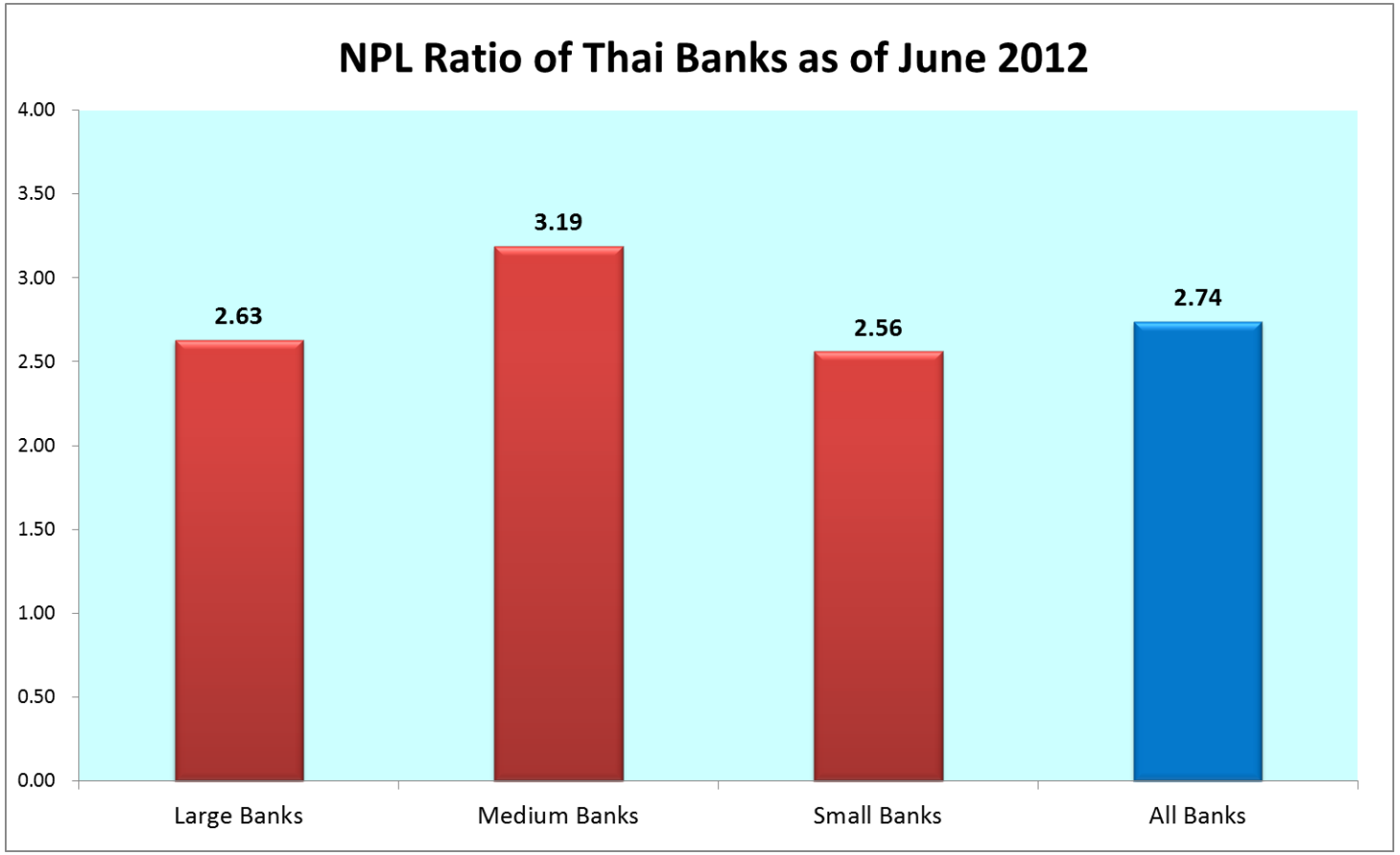
1. Profitability

$$\text{Net Interest Margin (NIM)} = \frac{\text{Interest Income - Interest Expense}}{\text{Average Net Assets}}$$



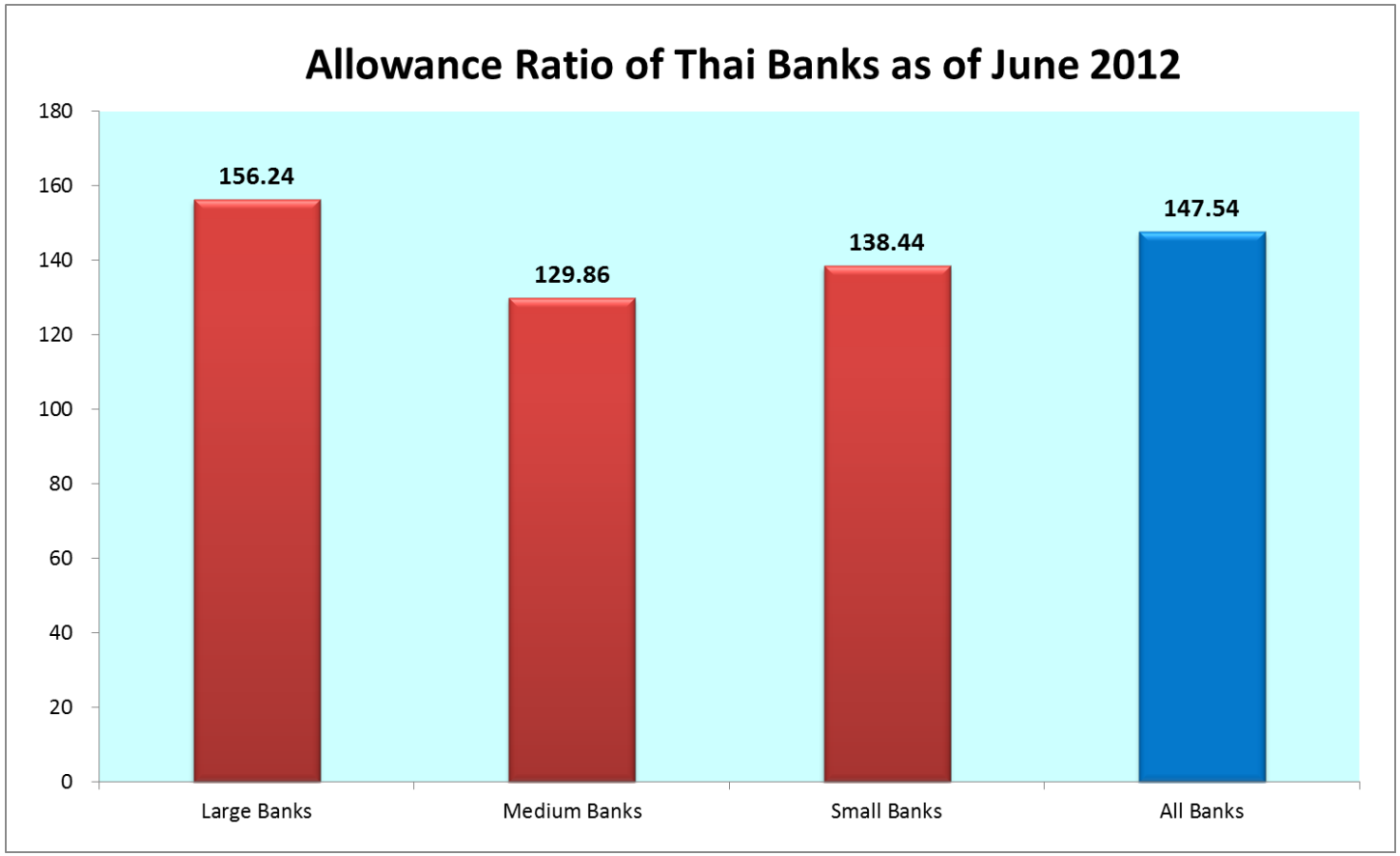
2. Asset Quality

$$\text{NPL Ratio} = \frac{\text{Non - performing Loans (NPL)}}{\text{Total Loans}}$$



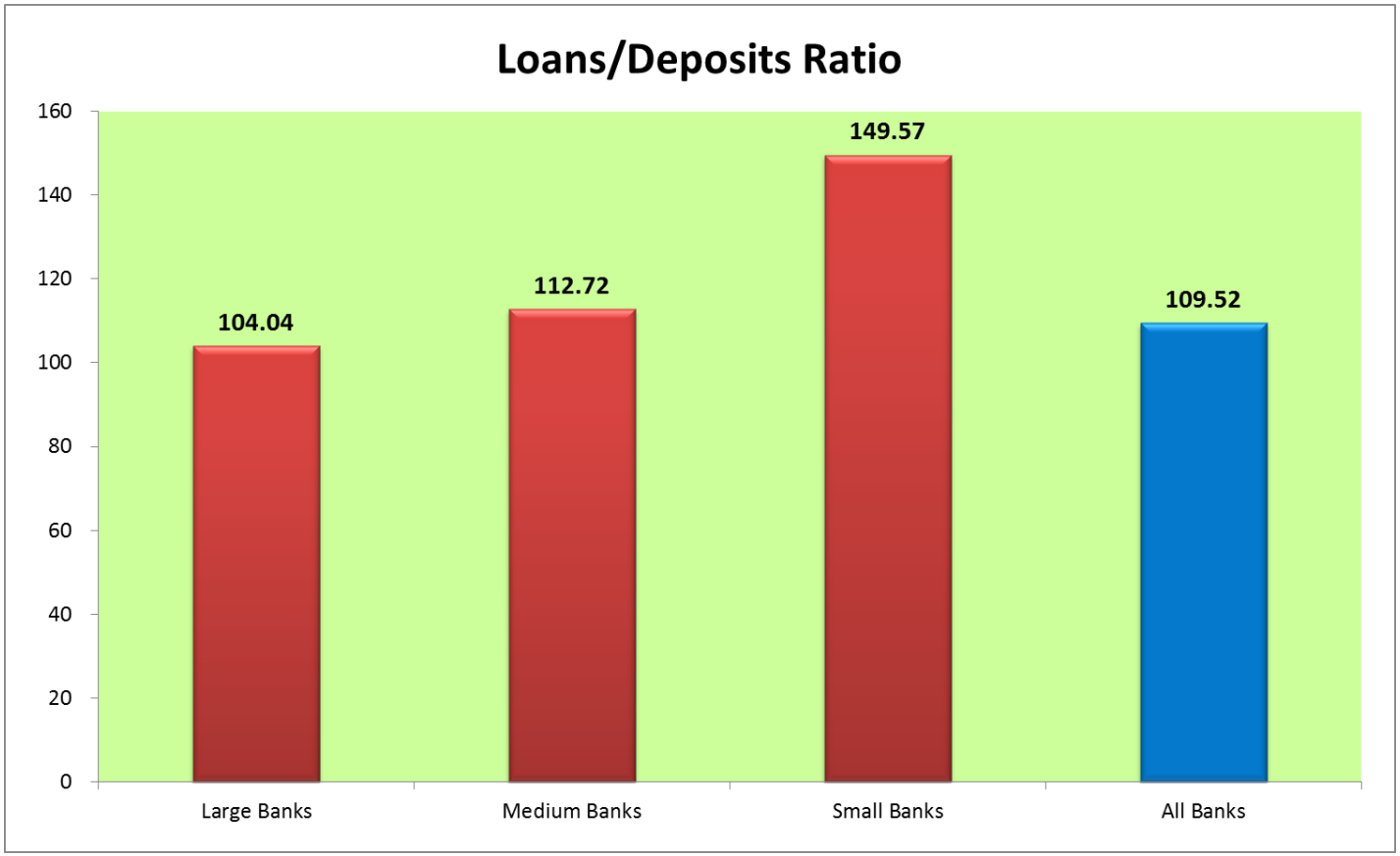
2. Asset Quality

$$\text{Allowance Ratio} = \frac{\text{Actual Allowance}}{\text{Required Allowance}}$$



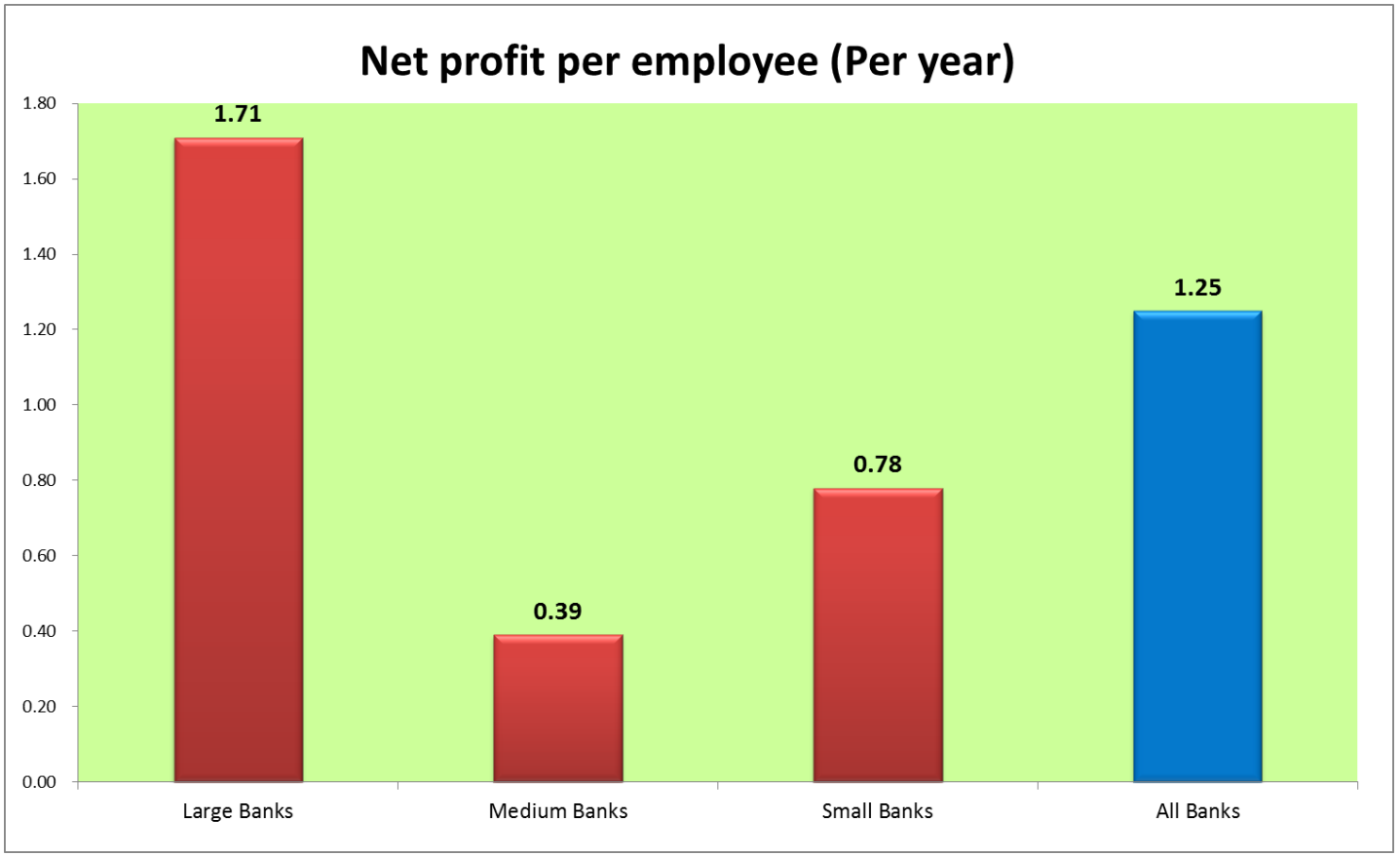
3. Efficiency

$$\text{Loans/Deposits Ratio} = \frac{\text{Loans}}{\text{Deposits}}$$



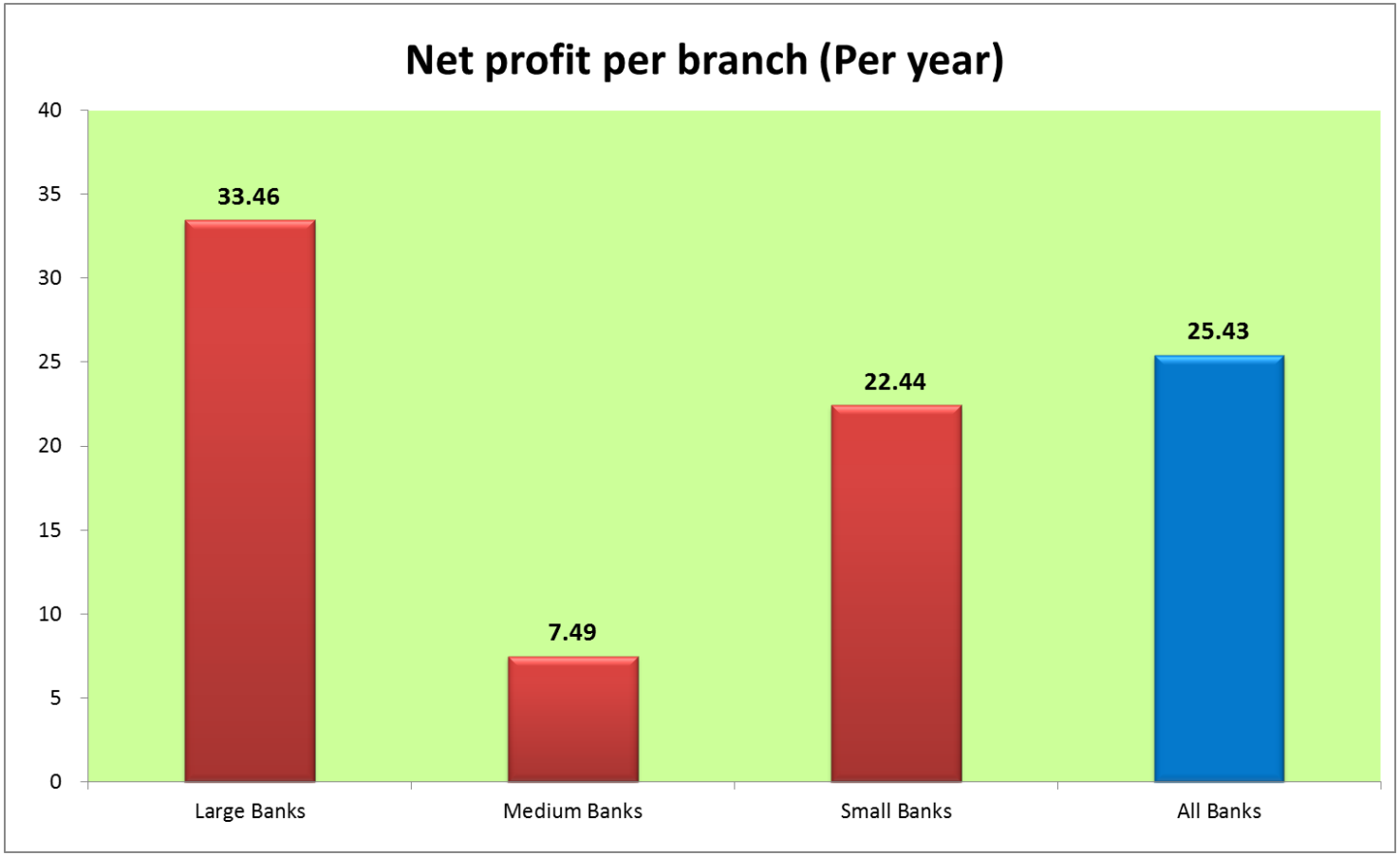
3. Efficiency

$$\text{Net Profit/Emp loyee} = \frac{\text{Net Profit}}{\text{No. of Employees}}.$$



3. Efficiency

$$\text{Net Profit/Bra nch} = \frac{\text{Net Profit}}{\text{No. of Branches}}$$



4. Capital Adequacy

$$\text{Tier1 Ratio} = \frac{\text{Tier 1}}{\text{Risk Adjusted Assets}} \geq 4.25\%^{*}$$

$$\text{Total Capital Ratio} = \frac{\text{Total Capital (Tier 1} + \text{Tier 2)}}{\text{Risk Adjusted Assets}} \geq 8.50\%^{*}$$

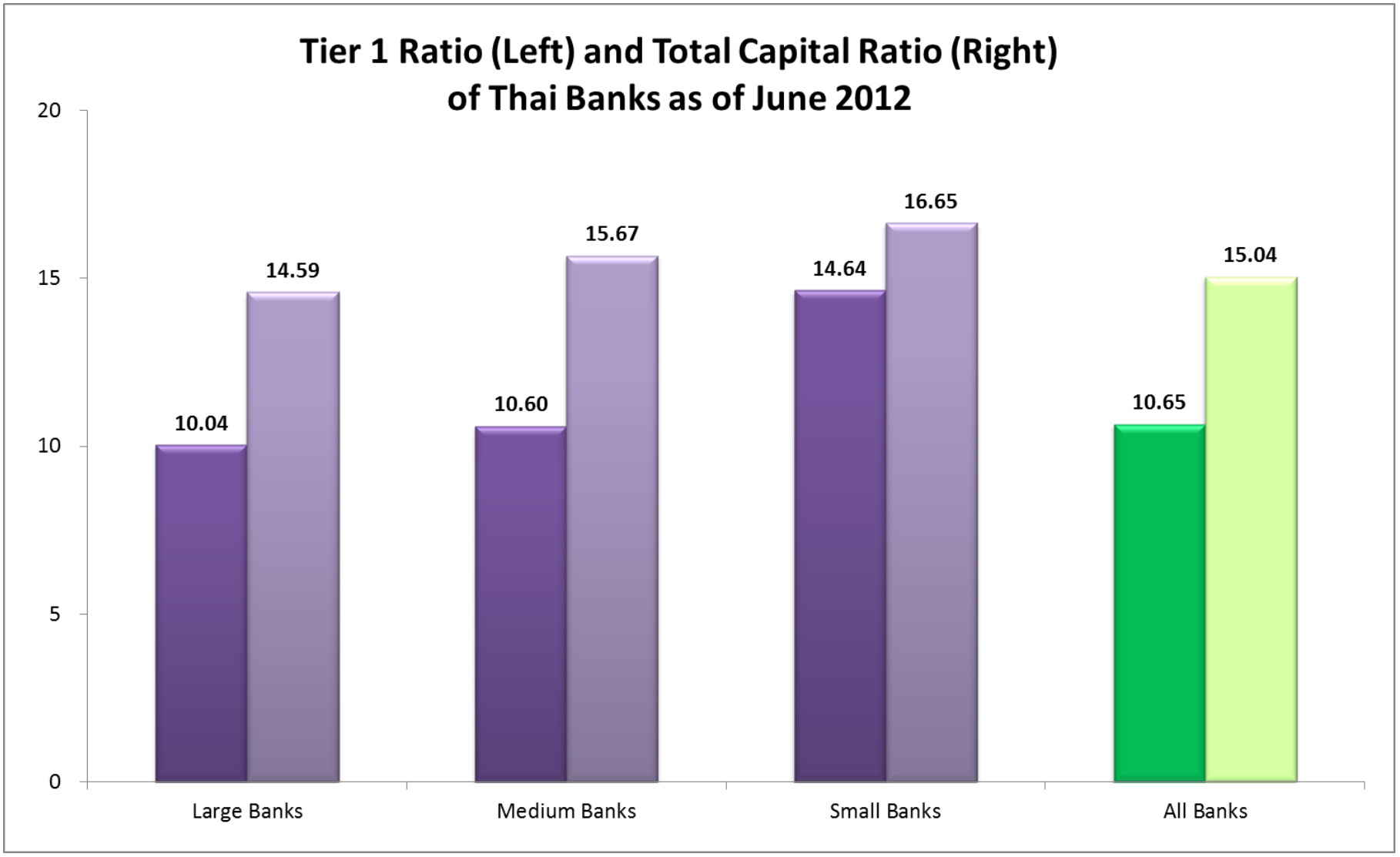
Tier 1 - core capital, mainly stockholders' equity, hybrid instruments (SLIPS, CAPS)

Tier 2 – subordinated debt, allowance for loan loss

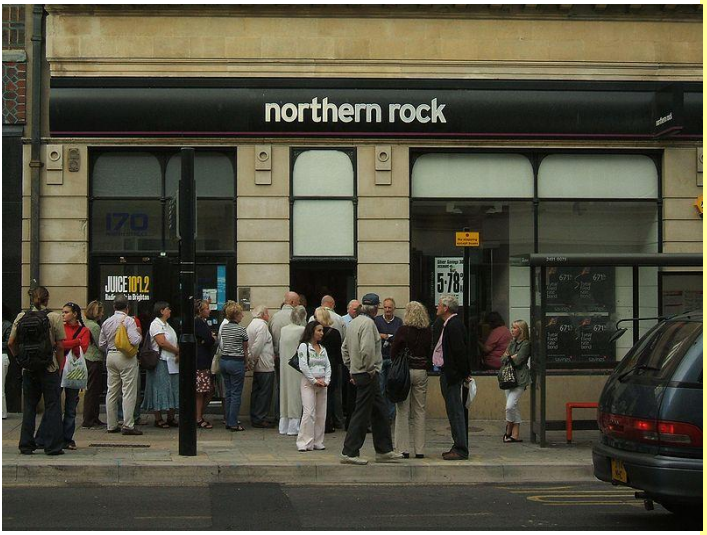
Risk-adjusted Assets – On- and off-balance-sheet assets whose value is adjusted for credit risk

**Minimum requirement set by the Bank of Thailand, according to the standards of the Bank for International Settlement (BIS)*

4. Capital Adequacy



How to measure bank's performance



What is 'Bank Run'?

- A bank run occurs when a large number of bank customers withdraw their deposits because they believe the bank is, or might become, insolvent.
- As a bank run progresses, it generates its own momentum, in a kind of self-fulfilling prophecy; as more people withdraw their deposits, the likelihood of default increases, and this encourages further withdrawals.
- Several techniques can help to prevent bank runs.
  - temporary suspension of withdrawals
  - central banks act as a lender of last resort
  - the protection of deposit insurance systems