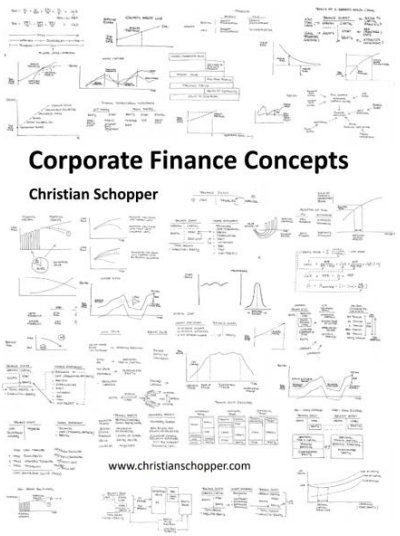
PRIMER ON FINANCIAL ANALYSIS OF BANKS

2018

For more concepts click on:



CorpFinCE
Corporate Finance Central Europe

www.christianschopper.com

Purpose of Financial Analysis

- Measure past performance
- Determine starting point for planning
- Estimate future performance (What-ifs?)
- Set values
  - Predict cashflows
  - Determine risk

Camels

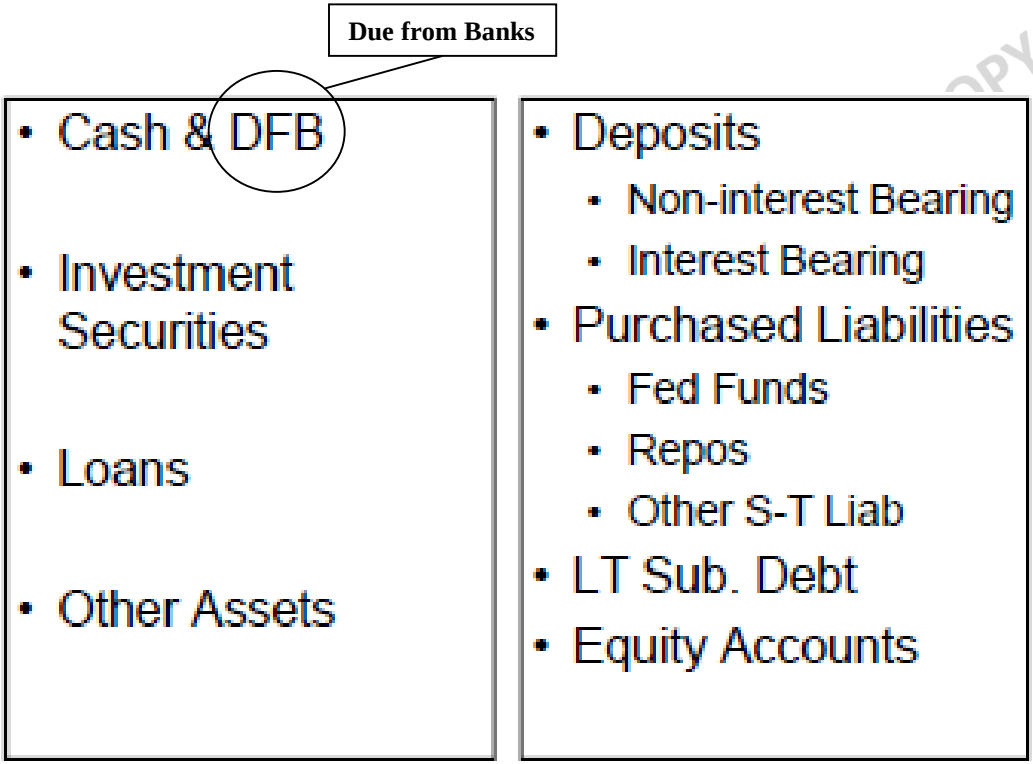
- Capital Adequacy
- Asset Quality
- Management Quality
- Earnings
- Liquidity
- Sensitivity

Financial Statements

- Balance Sheet
  - Assets = Liabilities + Equity
  - Balance sheet figures are calculated at a particular point in time

- Income Statement
  - Net Income = Revenues – Expenses
  - Indicates results over a period of time

Balance Sheet

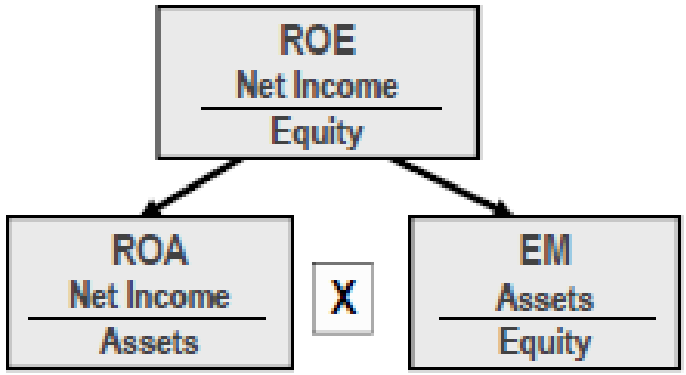


Income Statement

Interest Income
- Interest Expense
Net Interest Income
- Provision for Loan Losses
+ Noninterest Income
- Noninterest Expense
+ Gains/Losses on Secs
Pretax Earnings
- Taxes
Net income

Return on Equity (RoE)

- ROE and ROA are related through degree of financial leverage (EM = Equity multiplier)



$$EM = \frac{\text{Assets}}{\text{Equity}} = \frac{1}{\text{Equity ratio}}$$

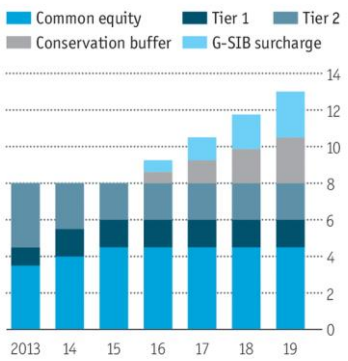
Capital Ratios

Elements of regulatory capital under Basel 2 and 3: minima

Elements of regulatory capital	Basel 2 rules	Basel 3 rules
Core Tier 1 capital	At least 2% of RWA	At least 4.5% of RWA
Tier 1 capital	At least 4% of RWA	At least 6% of RWA
Total capital	Tier 1 + Tier 2 + Tier 3 capital: at least 8% of RWA	Tier 1 + Tier 2 capital: at least 8% of RWA

Pile on the cushions

Basel 3 capital requirements, %



Source: Bank for International Settlements

Economist.com

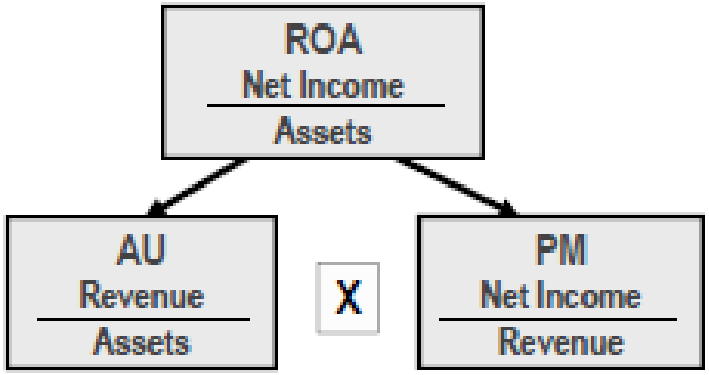
- Equity Ratio = equity/total assets
- Risk-based capital requirements

$$\frac{\text{Tier 1 (Core Capital)}}{\text{Risk} - \text{Adjusted Assets}} \geq \textbf{x percent (as per Basel III)}$$

- Texas Ratio
  - value of the lender's non-performing assets (Non performing loans + Real Estate Owned) divided by the sum of its tangible common equity capital and loan loss reserves

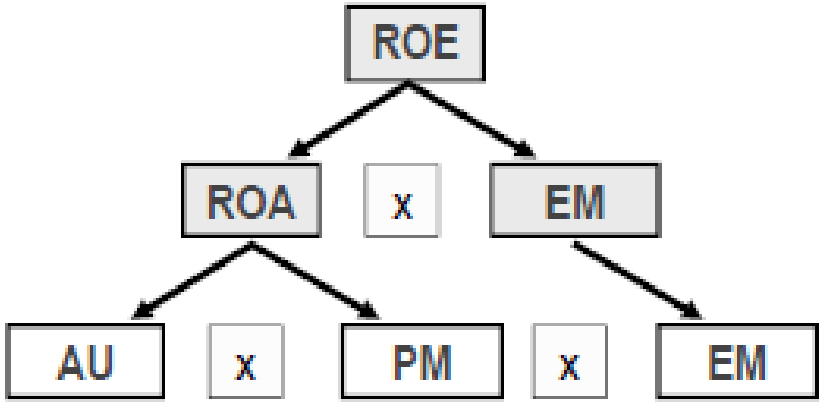
Return on Assets (RoA)

- ROA is determined by the Profit Margin (PM) and Asset Utilization (AU)



- AU – mix and yield on asset portfolio; generation of revenue given assets
- PM – effectiveness of expense management

RoE Breakdown



- Return on equity depends on
  - Asset Utilization (AU)
  - Profit Margin (PM)
  - Equity Multiplier (EM)

Income Statement

Net Income = **Revenue** − **Expense**

Interest Income
- Interest Expense
Net Interest Income
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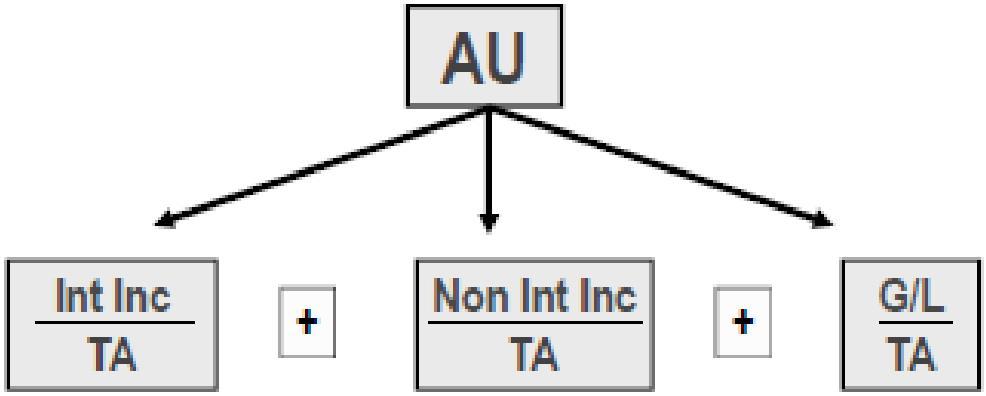
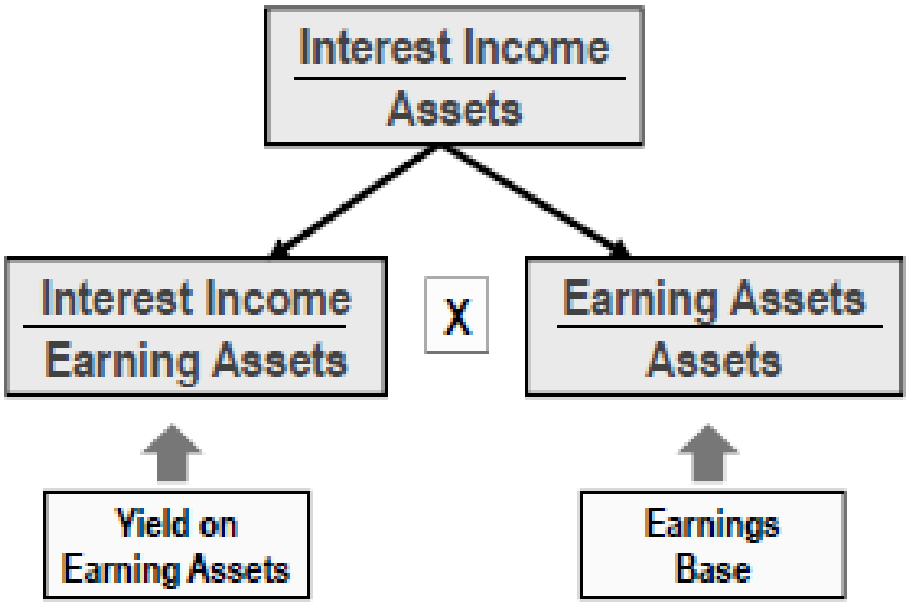
+ Noninterest Income
- Noninterest Expense
+ Gains/Losses on Secs
Pretax Earnings
- Taxes
Net income

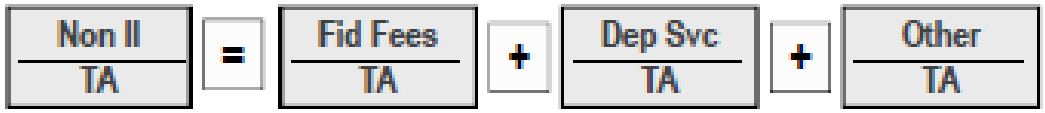
Asset Utilisation



Interest Income / Total Assets



Non-Interest Income



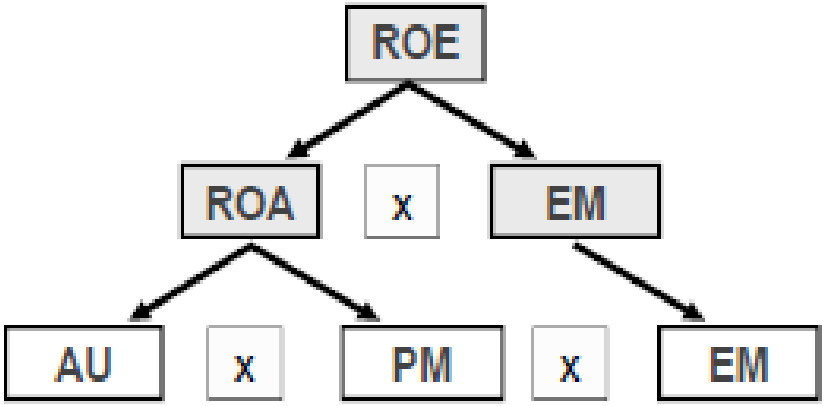
- Fee income measured relative to asset categories or number of employees
  - Deposit service charges to Deposits
- Breakdown of categories to reveal results of "focus areas"

Gains / Losses on Securities

- Gains/Losses relative to level of securities and securities as percentage of assets

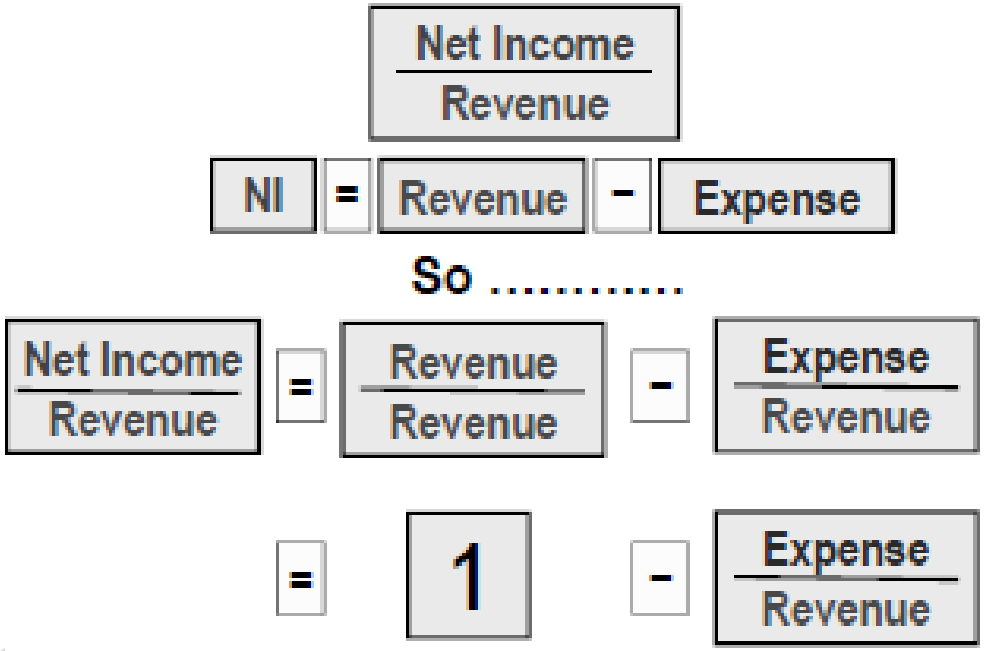
- Further breakdowns by category
  - Importance of potential gains/losses?

RoE Breakdown



- Return on equity depends on
  - Asset Utilization (AU)
  - Profit Margin (PM)
  - Equity Multiplier (EM)

Alternative Approach to Profit Margin



Income Statement

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Total Expense Ratio Components

$$\frac{\text{Expense}}{\text{Assets}} = \frac{\text{IE}}{\text{TA}} - \frac{\text{Non IE}}{\text{TA}} - \frac{\text{PLL}}{\text{TA}} - \frac{\text{TAX}}{\text{TA}}$$

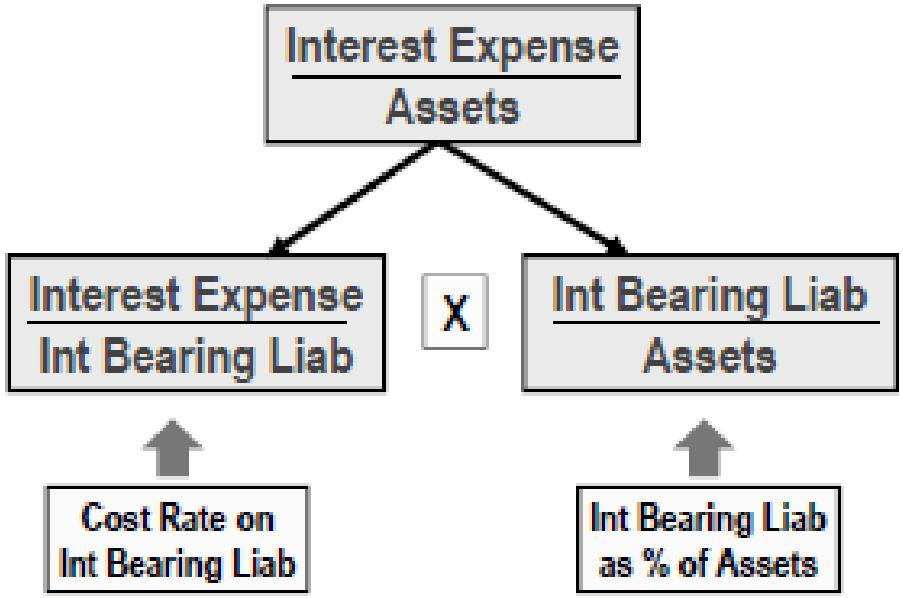
IE = Interest Expense

Non IE = Non-Interest Expense

PLL = Provision for Loan Losses

TAX = Taxes

Interest Expense / Total Assets



Non-Interest Expense

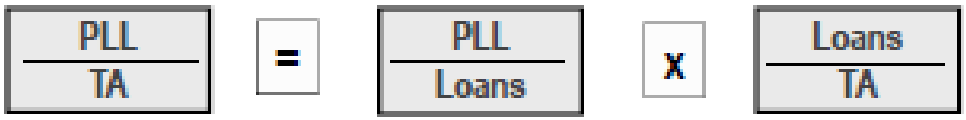
$$\frac{\text{Personnel}}{\text{TA}} = \frac{\text{Personnel}}{\text{\# Employees}} \times \frac{\text{\# Employees}}{\text{TA}}$$

- If Personnel / TA is high, then:
  - Personnel / # employees is high, and/or
  - # Employees / TA is high

$$\frac{\text{Occupancy}}{\text{TA}} = \frac{\text{Occupancy}}{\text{\# Branches}} \times \frac{\text{\# Branches}}{\text{TA}}$$

- If Occupancy / TA is high, then:
  - Occupancy / # Branches is high, and/or
  - # Branches / TA is high
- Composition effects may exist
  - More deposits – then more overhead

Provision for Loan Losses



- Provision for Loan Losses
  - Funds put aside to prepare for bad loans

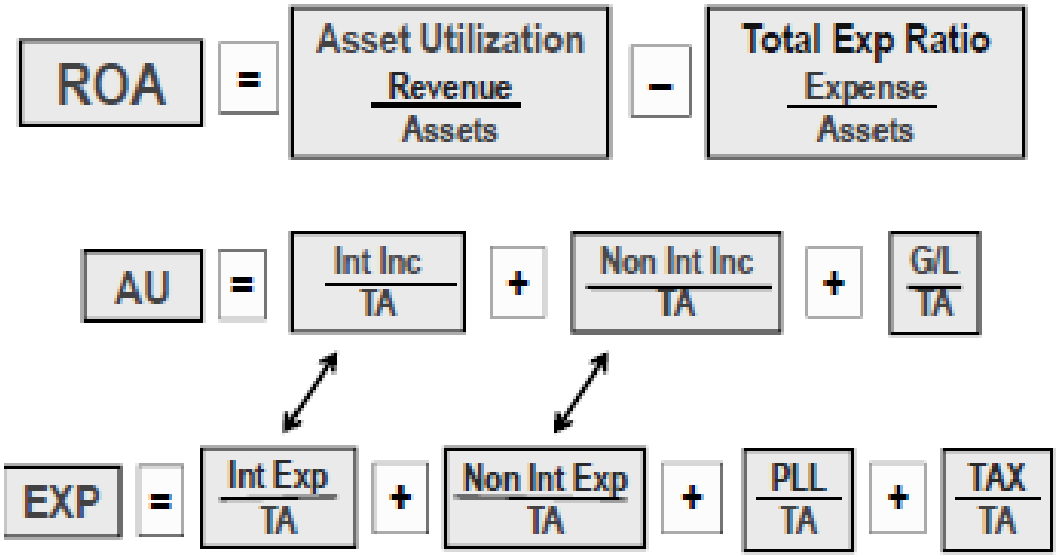
- Large PLL / Loans may indicate
  - New risky loans
  - Overall risk of loan portfolio (catch-up)
  - Safety conscious management

Taxes

$$\frac{TAX}{TA} = \frac{TAX}{Taxable\ Inc} \times \frac{Taxable\ Inc}{REV} \times \frac{REV}{TA}$$

- If Taxes/ TA is high, then:
  - The tax rate may be high
    - Increase over time could indicate tax rate changes or different tax rate environments
  - Revenue may be high
    - Good by itself
  - Taxable income may be high
    - Less use of "tax advantaged" assets

Components of RoA



Alternative Breakdown of RoA

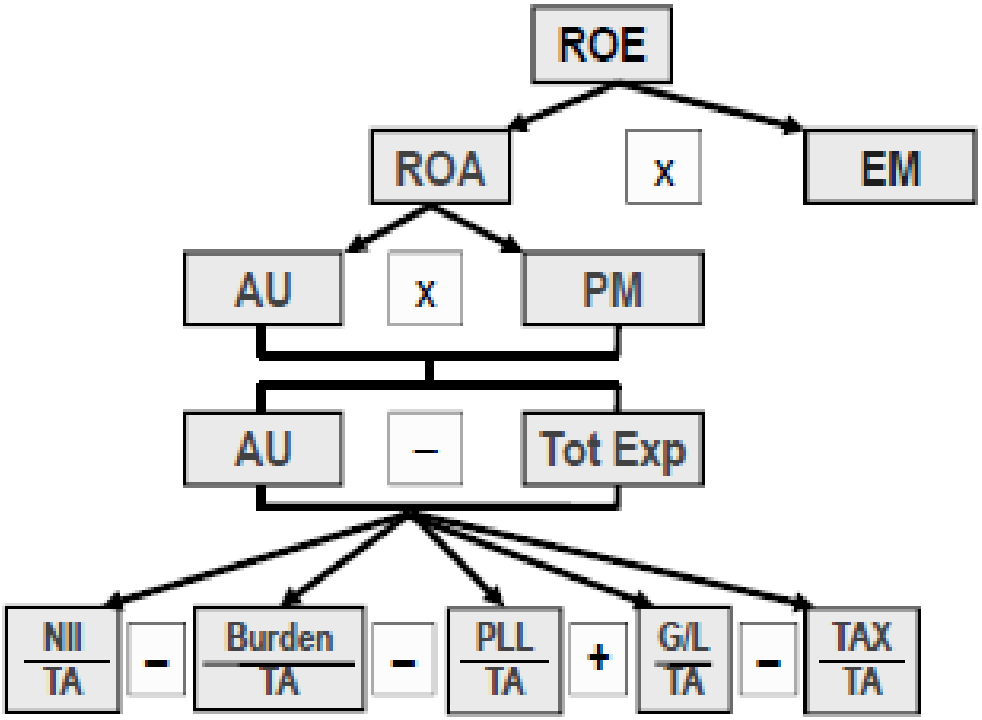
Net Interest Income = NII = Int Inc – Int Exp

Burden = Non IE – Non II

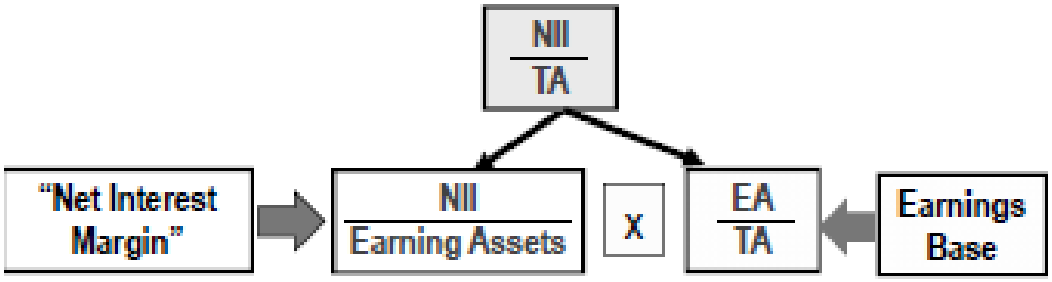
(some analysts include G/L in Non-interest income)

$$\text{ROA} = \frac{\text{NII}}{\text{TA}} - \frac{\text{Burden}}{\text{TA}} - \frac{\text{PLL}}{\text{TA}} + \frac{\text{G/L}}{\text{TA}} - \frac{\text{TAX}}{\text{TA}}$$

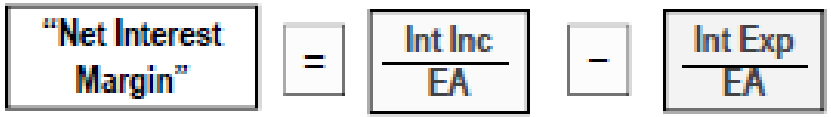
Decomposition of RoE



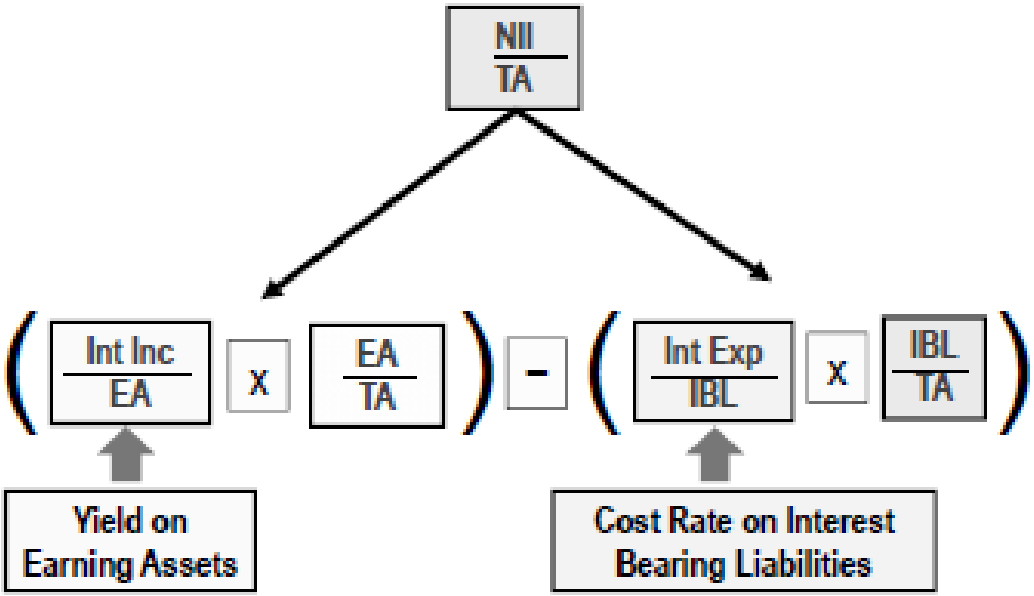
Net Interest Income / Total Assets



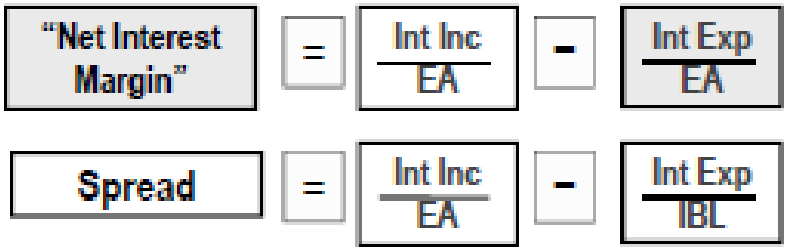
Net Int Income = Interest Income – Interest Expense



Net Interest Income / Total Assets



Net Interest Margin and Spread



- Spread and NIM are important in evaluating a bank's ability to manage interest rate risk
  - As rates change, interest income and expense change
  - Variation in NIM and Spread indicate whether a bank positioned itself to handle rate changes
  - Expected changes in NIM and Spread are examined to access a bank's exposure to interest rate risk
    - GAP and Earnings Sensitivity Analysis

Efficiency Ratio

$$\text{Efficiency Ratio} = \frac{\text{Non Int Exp}}{\text{NII + Non Int Inc}}$$

- Measures ability to control Non-Int Exp
- Indicates how much non-interest expense a bank has per dollar of operating income
- The smaller the efficiency ratio, the more profitable the bank, all other factors equal
- Many analysts consider below 55% as "good" on average

Examples for Financial Statement Shortcomings

- Off-balance sheet activities
  - Derivative contracts may have massive notional values that are not reflected in traditional measures
- Window dressing
  - Timing of asset/liability adjustments may impact reported numbers
- Accounting Differences
  - Leeway in accounting reporting rules often make comparisons difficult

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