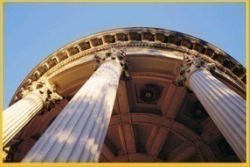


BANK FINANCIAL ANALYSIS

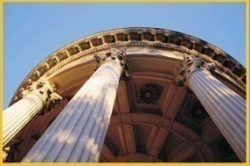
26-27 March 2014, ISTANBUL

OGUZ KEMAL BULUT



BANK FINANCIAL ANALYSIS

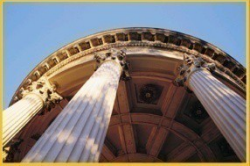
- **What** happened?
- **Why** did it happen?
- What is the **Impact** of event?
- **Action** plan going forward
 - Accountability
 - Target date



BANK FINANCIAL ANALYSIS

Questions to consider...

- What is the purpose of the analysis?
- What level of detail will be needed?
- What factors or relationships (context) will influence the analysis?
- What are the analytical limitations, and will these limitations have a potential to impair the analysis?
- What data is available?
- How will data be processed?
- What methodologies will be used to interpret the data?
- How will conclusions and recommendations be communicated?



OVERVIEW OF BANKING INDUSTRY

- Last five years: Chaos, Uncertainty, Cautiousness
- Precautinary optimism in 2013
- Some signs of life: Balance sheets are stabilizing, consumer confidence is toward the positive, credit availability is easing for credible clients



OVERVIEW OF BANKING INDUSTRY

What are expected in 2014?

- It will likely be one of continued challenge for industry executives.
- Margins are under heavy pressure
- Volatility in developing markets is still common
- Need for funding is arising
- Construction sector is in better way



OVERVIEW OF BANKING INDUSTRY

What are the focuses?

- More and tighter regulations
- Financial consumer satisfaction
- More concentration on profitability and productivity
- Increasing awareness on risk management



FINANCIAL STATEMENT COMPONENTS

- Commercial Banks
- Islamic Banks
- Investment Banks
- Development Banks



ESSENTIALS IN ASSET LIABILITY MANAGEMENT

- Liquidity
- Management of credit, market and operational risks
- Fund costing and loan profitability
- Funding needs
- Increasing net interest gains
- Stability



ESSENTIALS IN ASSET LIABILITY MANAGEMENT

ALM is a kind of financial engineering. It aims to build and to maintain a balanced and well-designed financial statement.

* Demirbank Case

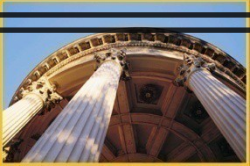


ESSENTIALS IN ASSET LIABILITY MANAGEMENT

Disconnect between risk and controls: *“These are stories of what happens when the **desire for excess returns** overrides risk controls”*.

The person in charge (in each case) showed **excellent results in the beginning**, and thus was allowed to transact without proper supervision and controls.” Beware of star performer who is unconstrained by lack of supervision.

If returns are too good to be true, there is likelihood of elevated risk



Risk in the context of a Bank Balance Sheet

Assets

	Jun-09
Cash and Short Term Funds	25,756
Derivative Financial Instruments	60,229
Net Advances	420,224
Investment Securities and Other	113,083
Property and Equipment	9,488
Other Assets	18,052
Total Assets	646,833

High level allocation to key risk types

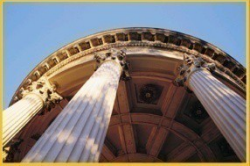
- Liquidity risk
- Market risk + Banking book hedges
- Credit risk + Interest Rate in the banking book
- Investment risk + Liquidity risk + Market risk

Liabilities

	Jun-09
Deposits	489,129
Derivative Financial Instruments	54,436
Short Trading Positions	23,434
Long Term Liabilities	10,887
Capital related	49,429
Other Liabilities	19,518
Total Liabilities	646,833

- Liquidity & Funding risk + Interest rate in the banking book
- Market risk + Banking book hedges
- Market risk
- Funding risk
- Capital risk





WHY USE RATIOS?

- Standardize numbers
- Facilitate comparisons: past performance and other banks
- Look at trends over time for clues to whether a bank's financial condition is likely to improve or to deteriorate



WARNING!

- Be careful not to infer too much from ratios as changes often affect them
- Accounting discretion makes a difference: Approaches to loan loss expenses and write-offs
- Calculating ratios is mechanical and their relationships are also mechanical
- Ratios help us ask the right questions, yet by themselves, they do not always give us all the answers!



FINANCIAL STATEMENTS

- **Balance Sheet**

Assets = Liabilities + Equity

Balance sheet figures are represented at a particular point in time

- **Income Statement**

Net Income = Revenues – Expenses

Indicates results over a period of time



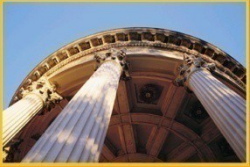
BALANCE SHEET

Cash & Equivalent	Deposits
Central Bank	Syndicated Borrowings
Investment Securities	Provisions
Loans	Other Liabilities
Other Assets	Equity



BANK ASSETS

- Cash and due from banks
 - Vault cash, deposits held central bank and other financial institutions and cash items in the process of collection
- Investment securities
 - Bonds, notes, and other securities held to generate return and help meet liquidity needs
- Loans (short and long term)
 - Commercial, consumer, retail, agricultural etc
- Other Assets
 - Equipments, fixed and intangible assets



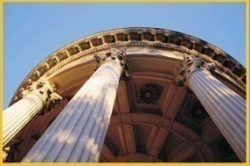
FINANCIAL INVESTMENTS

- Why different classification?
- Held for trading
- Available-for-sale
- Held to maturity
- Measuring values and bookkeeping



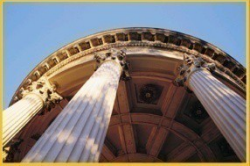
FINANCIAL INVESTMENTS

- Held for trading; actively bought and sold, marked to market on balance sheet and gains and losses reported on income statement
- Available-for-sale; recorded at market value on balance sheet with a corresponding change to stockholders' equity as value changes(no income statement effect)
- Held to maturity; recorded on the balance sheet at amortized cost



BANK LIABILITIES

- Deposits
- Borrowings
- Tax liabilities
- Provisions
- Stockholders equity



INCOME STATEMENT ITEMS

- Net interest income = interest income – interest expense
- **Plus** non-interest income
- **Minus** non-interest expense
- **Minus** provisions for loan losses
- **Plus** gains/losses on securities
- = Pretax earnings
- **Minus** taxes
- = Net income/loss



CAMELS

The CAMELS approach was developed by bank regulators in the United States as a means of measurement of the financial condition of a financial institution.

CAMELS analysis requires:

- financial statements (the last three years and interim statements for the most recent 12-month period)
- cash flow projections
- portfolio aging schedules
- funding sources
- information about the board of directors
- operations/staffing
- macroeconomic information



CAMELS

- Capital Adequacy
- Asset Quality
- Management Quality
- Earnings
- Liquidity
- Sensitivity to Market Risk



CAPITAL ADEQUACY

Capital Adequacy is a measurement of a bank to determine if solvency can be maintained due to risks that have been incurred as a course of business. Capital allows a financial institution to grow, establish and maintain both public and regulatory confidence, and provide a cushion (reserves) to be able to absorb potential loan losses above and beyond identified problems. A bank must be able to generate capital internally, through earnings retention, as a test of capital strength. An increase in capital as a result of restatements due to accounting standard changes is not an actual increase in capital.



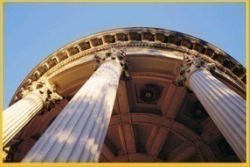
CAPITAL ADEQUACY

The **Capital Growth Rate**, which is calculated by subtracting prior-period equity capital from current-period equity capital, then dividing the difference by prior-period equity capital, indicates that either earnings are extremely good, minimal dividends are being extracted or additional capital funds have been received through the sale of new stock or a capital infusion, or it can mean that earnings are low or that dividends are excessive. The capital growth rate generated from earnings must be sufficient to maintain pace with the asset growth rate.



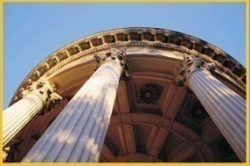
CAPITAL ADEQUACY

BIS Tier 1 (core capital): total own funds (called up and fully paid, ordinary share capital/common stock net of any shares held; perpetual, preferred shares, including such shares redeemable at the option of the issuer; disclosed equity reserves in the form of general and other reserves created by appropriations of retained earnings, share premiums and other surplus; published interim retained profits verified by external auditors.



CAPITAL ADEQUACY

BIS Tier 2 (supplemental): total own funds (plus value adjustments; reserves arising from the revaluation of tangible fixed assets and financial fixed assets; hybrid capital instruments)

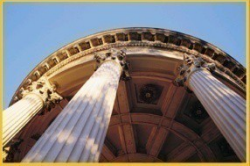


CAPITAL ADEQUACY RATIO

- Definition of capital to remain almost unchanged
- Modifications to denominator of risk-based capital ratios
- Risk weighted assets and off-balance sheet items: Basel I 0%, 20%, 50%, 100% risk groups; additionally with Basel II 150% and 200% risk groups

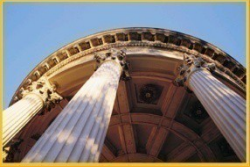
Total Capital(capital base)

(Credit risk + Market risk + Operational risk)



BASEL II

- Framework finalised and released in June 2004
- National processes already underway
- Basel II should not be regarded as only a compliance issue but as an opportunity to improve risk management capabilities
- Capital standards cannot and should not be considered a tool to ensure that no bank will ever fail

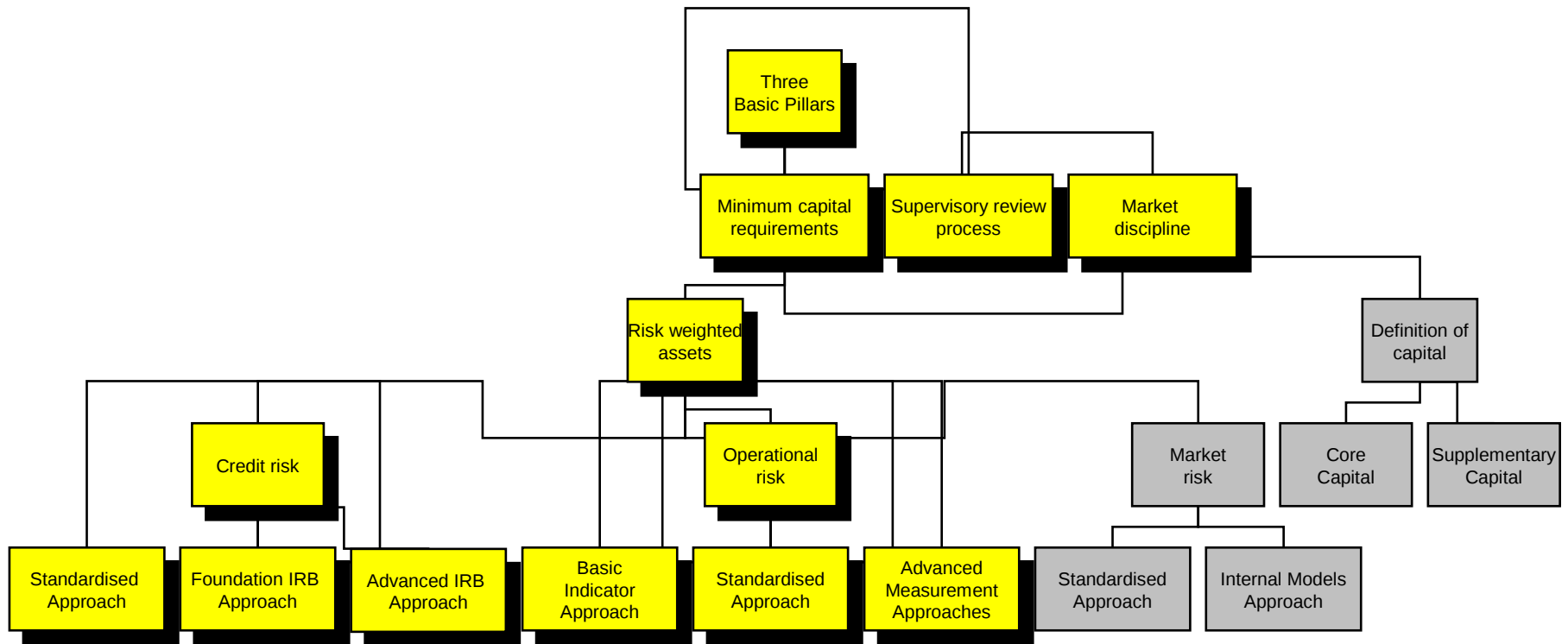


Basel II - Objectives

- Better align regulatory capital to underlying risks
- Cover a more comprehensive range of risks
- Encourage improvements in risk management
- Provide options for banks
- Integrate capital requirements into a larger framework
 - Role of supervisors
 - Role of market discipline



Basel II - Basic Structure





Basel II - Main Features

- Two new pillars (supervisory review process and market discipline)
- Reliance on banks' own assessments of risk
- Greater recognition of credit risk mitigation techniques
- Inclusion of a specific capital charge for operational risk
- Large menu of options for both banks and supervisors
- Able to accommodate future developments in the financial system



OPTIMUM EQUITY: WHY SO IMPORTANT?

- Two critical variable: liquidity or profitability?
- Cost of capital in banking industry
- How do banks calculate cost of funds?
- Motto of “the more equity, the better” is not effective for banks.
- Hidden but crucially important reality:
“Shareholders’ equity is the most expensive fund in banking industry!”



KEY RATIOS FOR EXAMINING CAPITAL ADEQUACY

Equity ratio

Equity / Average Assets

- This is a primary measurement for judging capital strength.
- Equity capital is defined as the total of common stock, surplus, perpetual preferred stock, undivided profits and capital reserves
- Intangibles and net unrealized holding gains (losses) on available-for-sale securities can be excluded from Capital.

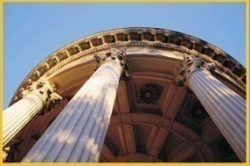


KEY RATIOS FOR EXAMINING CAPITAL ADEQUACY

Tier I Risk Based Capital Ratio

Tier 1 Capital / Total Risk Adjusted Assets

- * Utilized by banks to determine one of the components of capital adequacy ("Well Capitalized" is equal to or greater than 8%).
- * The greater the number the more capital there is to cover problems on the asset side of the balance sheet.
- * For most small to medium-sized banks, Tier 1 Capital generally consists of only common equity, which is the sum of common stock, surplus and retained earnings.



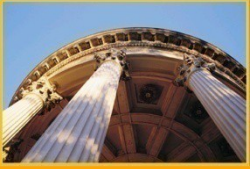
KEY RATIOS FOR EXAMINING CAPITAL ADEQUACY

Texas Ratio

Delinquent Loans + Non-performing Assets / Capital + Loan Loss Reserves

* If the ratio is 100% or higher then the bank may be in imminent danger of failing.

* If the ratio is between 50% and 100% then a capital infusion is necessary. The ratio is a quick way to determine the bank's ability to absorb losses.



REVIEW QUESTION 1

Which of the following are found on a typical bank's income statement?

- A) pre-paid expenses
- B) interest receivables
- C) provision for loan losses
- D) Extraordinary expenses



REVIEW QUESTION 2

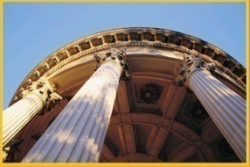
Deposits	650,000 \$
Syndicated loans	100,000 \$
Provisions	70,000\$
Other Liabilities	50,000\$
Shareholders' equity	<u>130,000\$</u>
	1,000,000\$

Find cost of funding assuming interest rate for deposits is 6%, average cost of syndicated loans is 5% and cost of capital is 10%. What would happen if equity increases to 300,000 \$?



ASSET QUALITY

Asset Quality evaluates risk (and there must be some risk to earn a return), controllability, adequacy of loan loss reserves, and acceptable earnings; and the affect of off-balance sheet earnings and loss. The quality of a bank's assets hinges on their ability to be collected a during and at maturity. Thus, one must examine the portfolio quality, the portfolio classification system (aging schedule and the methodology to classifying a receivable) and the fixed assets (the productivity of the long-term assets, for instance the branch network). It is also necessary to determine the liquidity and the maturity structure of various assets. Investing in assets is how a bank primarily earns a return. The question is that how well these assets aregoing to perform?



ASSET QUALITY

- **Earning Assets:** interest bearing financial instruments which are principally commercial, real estate, and consumer loans; investment securities and trading account securities; money market investments; lease finance receivables; time deposits placed in foreign banks.
- **Risk-based / Risk Weighted Assets:** Some investments and loans are riskier than others and regulators realize that there should be a flexible scale of allocating bank reserve capital to these various types of assets. For instance, a bank that has Treasury securities in its portfolio of securities does not have to assign any capital reserve for this particular asset.



ASSET QUALITY

Loans are usually the largest asset category for a bank.

Main Concerns:

- * Change in loan volume
- * why has it grown or stable?
- * has what percentage variable and/or fixed interest rate?
- * what part of the portfolio is growing (consumer vs. commercial)
- * is the bank overly exposed in one sector (i.e. commercial real estate, industry sector, country)
- * what is the environment for the performance and value of the assets?



ASSET QUALITY

Loans quality is one of the essential indicator about the bank management and strategies. Depending on financial conditions and management preference, the loan portfolio reflects the business mentality of the bank.

Key drivers of loan portfolio quality:

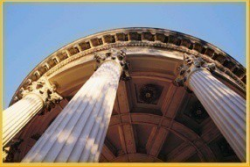
- * Appetite for risk
- * Cost of funds
- * Existence or non-existence in a specific area and/or in a sector
- * Capital Adequacy Ratio



ASSET QUALITY

Loan Loss Reserve: is created and built up by placing provisions in an account on the asset-side of the balance sheet, and which must be a sufficiently funded amount to cover actual or anticipated losses.

- * **Loss experience**
- * **Future expected/possible losses**
- * **Bank preparation**

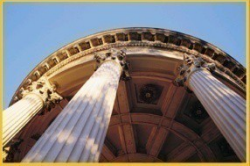


BRSA OF TURKEY

Since 2001, Banking Regulation and Supervision Agency of Turkey has been applying provision procedure that is in accordance with BIS rules. This procedure says; banks have to classify and monitor their loans according to the groups indicated below:

- Group 1: Loans of a Standard Nature
- Group 2: Loans Under Close Monitoring
- Group 3: Loans with Limited Recovery
- Group 4: Loans with Suspicious Recovery
- Group 5: Loans Having the Nature of Loss

All the loans classified under Groups 3,4 and 5 are considered non-performing loans



BRSA OF TURKEY PROCEDURE

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BRSA OF TURKEY PROCEDURE

- **General Provisions**
- **Particular (Special) Provisions**
- **Consideration of Guarantees in Calculation of Special Provisions**

Group 1: 100%

Group 2: 75%

Group 3: 50%

Group 4: 25%



KEY RATIOS FOR EXAMINING ASSET QUALITY

Loan Loss Reserves / Total Loans Ratio

- This is a primary measurement for judging capital strength.
- Traditionally the amount is a minimum 1.0% but it is not sure if it is adequate unless it is compared to Provisions/Total loans: percentage of provisions from fiscal income statement as a percentage of the portfolio.
- The less, the better for a bank
- Around 2.5% in the Turkish banking sector



KEY RATIOS FOR EXAMINING ASSET QUALITY

Coverage Ratio

Loan Loss Reserves / Non-Performing or Non-current Loans and leases

- Non-performing or Non-current loans consist of loans that are 90 days or more overdue and still accruing and nonaccrual loans.
- Also sometimes known as the coverage ratio should be in excess of 1.5x



KEY RATIOS FOR EXAMINING ASSET QUALITY

Overdue Loans to Total Loan Ratio

Total Loans 30-89 Days Past Due / Total Loans

Indicates that either credit underwriting standards are inappropriate or collection procedures are inadequate.

90- day Overdue Loans to Total Loan Ratio

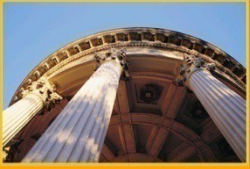
Indicates that the loan portfolio may be experiencing some deterioration through either poor underwriting and/or collections.



KEY RATIOS FOR EXAMINING ASSET QUALITY

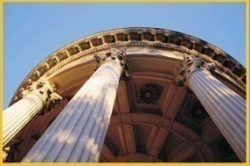
$$\frac{\text{Provision for Loan Losses}}{\text{Total Assets}} = \frac{\text{PLL}}{\text{Loans}} \times \frac{\text{Loans}}{\text{TA}}$$

- Provision for Loan Losses
 - Funds put aside to prepare for bad loans
- Large PPL / Loans may indicate;
 - new risky loans
 - overall risk of loan portfolio
 - safety conscious management



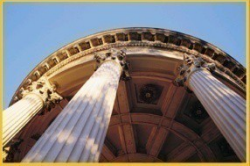
MANAGEMENT STRUCTURE

- What is the ownership structure of the bank? (Government support? Independently capitalized or a branch? Can rely on parent support implicit/explicit?)
- Is as small branch network a constraint on business?
- Loan portfolio management, credit administration, policy development, employee training, loan workout
- Is it possible to determine governance, audit oversight and strategic planning?



MANAGEMENT STRUCTURE

- Efficiency of internal and financial control
- Employee trainings
- IT systems
- Risk-oriented management approach
- Specific procedures for “humanbeing problems”



EARNINGS

Earnings determine the ability of a bank to increase capital (through retained earnings), absorb loan losses, support the future growth of assets, and provide a return to investors. The largest source of income for a bank is net interest revenue (interest income from lending activity less interest paid on deposits and debt). The second most important source is from investing activity. A substantial source of income also comes from foreign exchange and precious metal trading, and commissions/transaction fees and trust operations.



EARNINGS

The issues to consider include:

- * What is the concentration of business: retail, trade finance, corporate, mortgage, merchant, personal, investment, portfolio management, asset financing, leasing, advisory, custodial services and trustee?
- * Are the bank's core earnings in its home market only?
- * What is the ratio between interest and non-interest income sources?
- * Is operating income declining compared to previous periods due to insufficient revenue or higher operating expense?
- * Is net income low due to non-accrual loans?
- * Is an improvement in revenue and earnings coming from extraordinary / non-recurring items? Would the elimination of this one-time item actually result in a loss? Is the increase in earnings derived from the adoption of new accounting standards?



EARNINGS

An analyst should review the income statement to ascertain the following;

- Source of profitability and hence sectors of the business or economy upon which the entity is dependent
- Quality and quantity of earnings considering the risk taken
- Quality of the loan portfolio
- Taxation and its impact on the choice of products
- Dividend payout



KEY RATIOS FOR EXAMINING EARNINGS

Net interest margin

Net Interest Income (annualized) / Interest Earning Assets

- This is net interest income expressed as a percentage of earning assets
- Net interest income is derived by subtracting interest expense from interest income.
- Indicates how well management employed the earning asset base (the denominator focuses strictly on assets that generate income).
- May come under pressure from offering preferential rates to customer base, a low level of growth in savings and the higher percentage of more expensive wholesale funds available. The lower the net interest margin, approximately 3.0% or lower, generally it is reflective of a bank with a large volume of non-earning or low-yielding assets.
- Conversely, are high or increasing margins the result of a favorable interest rate environment, or are they the result of the bank moving out of safe but low-yielding, low-return securities into higher-risk, higher yielding and less liquid loans or investment securities?



KEY RATIOS FOR EXAMINING EARNINGS

Return on Assets(ROA)

Net income (annualized) after taxes / Total Assets

- Actual net income should be examined for the inclusion of extraordinary earnings (which may be excluded).
- This measures how the assets are utilized by indicating the profitability of the assets base or asset mix.
- Ranges from approximately 1% to 5.0% for Turkish banks. Historically in Turkey the benchmark was 1.0% or better for the bank to be considered to be doing well. New banks are usually below the 1.0% benchmark



KEY RATIOS FOR EXAMINING EARNINGS

Return on Equity(ROE)

Net income (annualized) after taxes / Total equity

- This ratio is affected by the level of capitalization of the financial institution.
- Measures the ability to augment capital and increase net worth, and pay a dividend.
- Measures the return on the stockholder's investment (not considered an effective measure of earnings performance from the bank's standpoint). From the Turkish experience of last years, a return of around 15% to 17% is regarded as necessary to provide a proper dividend to shareholders and maintain necessary capital strengths



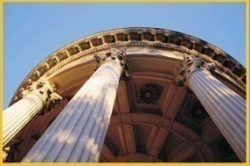
KEY RATIOS FOR EXAMINING EARNINGS

Operating Profit Margin

(Interest Income-Interest Expense) / Interest Expense

This ratio measures the percent of net operating revenues consumed by operating expenses, providing the remaining operating profit

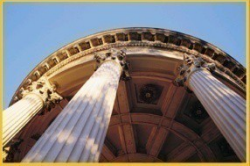
The higher the margin, the more efficient the bank.



KEY RATIOS FOR EXAMINING EARNINGS

Non-interest Income to Total Assets Ratio

- Non-interest income is income derived from fee-based banking services such as service charges on deposit accounts, consulting and advisory fees, rental of safe deposit boxes, other fee income, cross-sale activities etc.
- Realized gains on the sale of securities can be excluded.
- It is important that a bank develop non-interest income sources but it should become a major portion of the bank's total revenue unless it really is an annual core business operation.



KEY RATIOS FOR EXAMINING EARNINGS

Average Collection of Interest (Days)

Accrued Interest Receivable / Interest Income x 365

This is a measurement of the number of days interest on earning assets remains uncollected and indicates that volume of overdue loans is increasing or repayment terms are being extended to accommodate a borrower's inability to properly service debt.



KEY RATIOS FOR EXAMINING EARNINGS

Overhead Ratio

Total Non-Interest Expenses (annualized) / Total Assets

- Non-interest expenses (annualized), which are the normal operating expense associated with the daily operation of a bank such as salaries and employee benefits plus occupancy / fixed asset costs plus depreciation and amortization.
- These costs tend to rise faster than income in a time of inflation or if the institution is expanding by the purchase or construction of a new branches.
- Provisions for loan and lease losses, realized losses on securities and income taxes should not be included in non-interest expense.



KEY RATIOS FOR EXAMINING EARNINGS

Efficiency Ratio

Total Non-interest expenses / Total Net Interest Income (before provisions) plus Total Non-Interest Income

- Efficiency improves as the ratio decreases, which is obtained by either increasing net interest income, increasing non-interest revenues and/or reducing operating expenses.
- This is a measure of productivity of the bank, and is targeted at the middle to low 50% range. This may seem like break-even but it is not; what this is saying is that for every dollar the bank is earning it gets to keep 50 cents and it has to spend 50 cents to earn that dollar. The ratio can be as low as the mid to low 40% range, which means that for every dollar the bank earns it gets to keep 60 cents and spends 40 cents, a very efficient bank.
- Ratios in excess of 75% mean the bank is very expensive to operate.



ECONOMIC VALUE ADDED (EVA)

It is a new and pragmatic approach to measure profitability. It was developed by an internationally renowned management consultancy firm to create an alternative performance measurement. However, it has become very useful key driver of earning and many banks and companies employ it to understand if they have “quality profit”.



ECONOMIC VALUE ADDED (EVA)

The innovative side of EVA is to link cost of equity and ROE. EVA have to be positive to get quality profit.

EVA: Net profit – (Cost of equity x (total equity-net profit))



REVIEW QUESTION 1

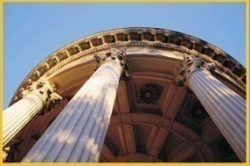
Other things constant, if a bank increases its level of liabilities, its ROE will:

- a) increase
- b) decrease
- c) remained constant
- d) cannot be determined with the given information



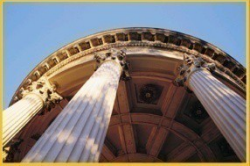
REVIEW QUESTION 2

X Bank has net profit of 100 million USD and its total equity is 1,200 million USD. Calculate and interpret the EVA by taking the cost of equity as 10%.



LIQUIDITY AND FUNDING

- Liquidity and Funding are related, however they are separate situations. Funding is what a bank relies upon to grow its business and the asset side of the balance sheet above and beyond what could be accomplished with just equity. Funding is provided by deposits, short-term debt and longer-term debt. Funding means access to capital.
- Liquidity is what a bank requires if Funding is interrupted and the bank must still be able to meet certain obligations (bank's ability to repay depositors and other creditors without incurring excessive costs). What is the liability structure / composition of the institution's liabilities, including their tenor, interest rate, payment terms, sensitivity to changes in the macroeconomic environment, types of guarantees required on credit facilities, sources of credit available to the institution and the extent of resource diversification.



LIQUIDITY AND FUNDING

Funding sources include:

- Deposits
- Syndicated loans
- Bank accounts
- Repos
- Net earnings
- Issuance of common and preferred securities
- Commercial paper
- Subordinated debt
- Monetizing investment securities
- Murabaha and musharaka



LIQUIDITY AND FUNDING

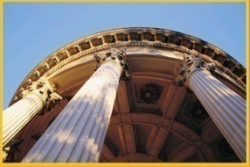
Liquidity refers to reserves of cash, securities, a bank's ability to convert an asset into cash, and unused bank lines of credit. The faster the conversion the more liquid the asset. Illiquidity is a risk in that a bank might not be able to convert the asset to cash when most needed. Moreover, having to wait for the sale of an asset can pose an additional risk if the price of the asset decreases while waiting to liquidate. Thus, if loans or assets are illiquid then liquidity is also limited, especially if the loans exceed stable deposits and available lines of credit. Liquidity must be sufficient to meet all maturing unsecured debt obligations due **within a one-year time** horizon without incremental access to the unsecured markets.



LIQUIDITY AND FUNDING

Liquidity Gap Analysis is an attempt to measure future funding needs of a bank by comparing the amount of assets and liabilities maturing over time.

- The overall goal of management in the asset/liability/capital structure of the institution is to maximize the return earned from the assets, with the lowest risk profile and default ratio, and also minimize the cost of funds as much as possible to widen the spread between earnings and expenses (manage the net interest margin); and to utilize leverage over invested capital.
- Liquidity Management: "cash-out" or the risk of being illiquid when cash is needed.



LIQUIDITY MANAGEMENT

Liquidity Management related to assets: match maturity of assets with liquidity needs.

- The historical decline in liquid assets on hand is related to better management.
- Anticipation of deposit and loan changes.
- If the bank invests for yield, it will not be able to cover demands.
- Could be covered by liquidation of assets and borrowings.
- Commercial loan approach: confine loans to short-term, self-liquidating commercial loans.
- Money market approach: hold money market instruments such as Treasury bills, CP or banker's acceptances



LIQUIDITY MANAGEMENT

Management's goal for liabilities: to also manage sources of funds (not just uses of funds/asset management) to meet liquidity requirements; and increase income potential.

Liquidity Management related to Liabilities:

- Interest rates may be higher when the institution seeks to acquire funds. Requires that the financial condition of the bank be strong



KEY RATIOS FOR EXAMINING LIQUIDITY

Loans as a Percentage of Deposits:

$\text{Loans(gross) / Deposits}$

- Indicates the percentage of a bank's loans funded through deposits
- Normally 80% to 90% (the higher the ratio the more the institution is relying on borrowed funds)
- However, cannot also be too low as loans are considered the highest and best use of bank funds (indicates excess liquidity).
- Between 70% to 80% indicates that the bank still has capacity to write new loans.
- A high loan-to-deposit ratio indicates that a bank has fewer funds invested in readily marketable assets, which provide a greater margin of liquidity to the bank.



KEY RATIOS FOR EXAMINING LIQUIDITY

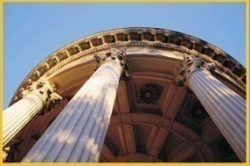
Total Liquidity Adequacy Ratio (implemented by BRSA)

TL&FX Assets / TL&FX Liabilities = 100% or bigger

Total FX Liquidity Adequacy Ratio (implemented by BRSA)

FX Assets / FX Liabilities = 80% or bigger

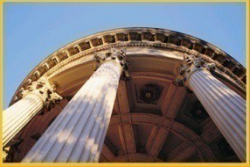
These ratios are applied on the assets and liabilities 31 days before the due dates of their first slice term.



KEY RATIOS FOR EXAMINING LIQUIDITY

As a crucial matter in banking business, examining liquidity by using ratios may not be sufficient to prevent a possible failure. In banking business, insufficient liquidity, even for one hour, cannot be acceptable by regulators, investors and depositors.

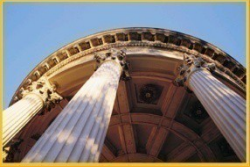
For this reason, bankers mostly prefer to monitor liquidity in more specific ways instead of using ratios.



SENSITIVITY TO MARKET RISK

Market risk is based primarily on the following evaluating factors:

- sensitivity to adverse changes in interest rates, fx rates and stock prices(if the bank shares are listed in stock market)
- nature of the operations of the bank
- trends in the banking industry



SENSITIVITY TO MARKET RISK

The sensitivity component places focus on the quantity of risk and risk management with respect to the full range of the bank's activities, and the quality of risk management as defined by how risk is identified, measured, monitored and controlled.



GAP ANALYSIS

It is considered as the most useful method to analyze the possible effects of the adverse changes in interest rates. It shows how income statement is affected when there is an increase or decrease in the unit percentage interest rate

GAP ratio = Interest-sensitive assets / interest sensitive liabilities



GAP ANALYSIS

If this ratio is bigger than 1, there is a positive gap or vice versa.

The GAP analysis indicates whether the institution is in a position to benefit from rising interest rates by having a positive gap whether it is in a position to benefit from declining interest rates by having a negative gap.

A risk averse bank wants to stay around 1. Otherwise, this bank should make a estimation about the future movements of interest.



DURATION ANALYSIS

Duration is a measure of a bond's sensitivity to interest rate changes. The higher the bond's duration, the greater its sensitivity to the change (also known as volatility) and vice versa

There is more than one way to calculate duration, depending on one's compounding assumptions, but the Macaulay duration (named after Frederick Macaulay, an economist who developed the concept in 1938) is the most common. It is, in fact, a slightly different version of the present value formula.



DURATION ANALYSIS

In Turkey, some banks calculate the duration for deposits, too. It is crucial for them, because the average maturity of deposit in Turkey is less than three months. Under this condition, it is too risky to give loan. However, banks should estimate the “**effective duration**” through duration analysis. The **effective duration** is a discrete approximation of how long an average deposit stays in bank and depends on an option pricing model.

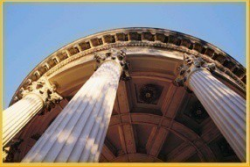


FOREIGN EXCHANGE SENSITIVITY

It can be measured through balance sheet. Basically, the ratio is(including off-balance sheet items);

FX assets and receivables / FX liabilities and payables.

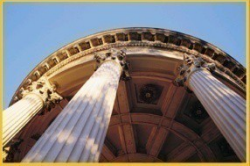
If it is more than 1.00, the bank is in long position whereas if it is less than 1.00 the bank is in short position. Banks mostly prefer to be in square position. It is normal for banks if this ratio between 0.80 and 1.10.



REVIEW QUESTION 1

If a bank's yield on earning assets falls, one can conclude that it pays too much for deposits

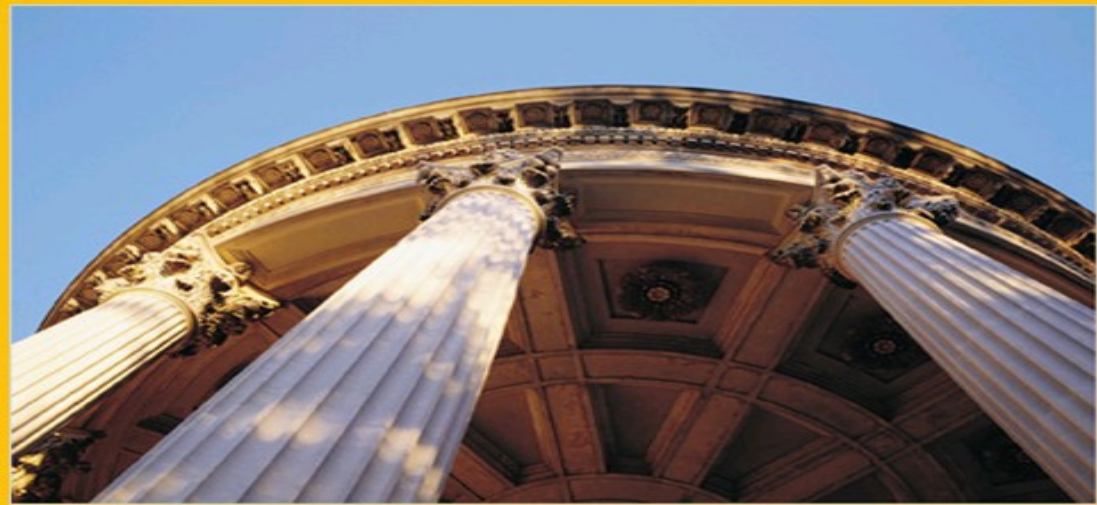
True or false?



REVIEW QUESTION 2

If we know that a bank's yield on earning assets has increased, we also know its net interest margin has increased.

True or false?



***Thank You Very
Much***

26-27 March 2014, Istanbul

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