BALANCE SHEET ANALYSIS

Assets

Current Assets / Liquid Assets

- **Cash** and cash due from Central Bank; cash on deposit in postal banking accounts; Due from Banks; Interest-bearing deposits in other banks

- Cash held in trust: may be on the behalf of a third party or the result of a merger/acquisition and may have restrictions encumbering its usage.

- **Fed Funds Sold**: Federal funds, or fed funds, are unsecured loans of reserve balances at Federal Reserve Banks that depository institutions make to one another. Banks keep reserve balances at the Federal Reserve Banks to meet their reserve requirements and to clear financial transactions. Transactions in the fed funds market enable depository institutions with reserve balances in excess of reserve requirements to lend them, or "sell" as it is called by market participants, to institutions with reserve deficiencies. Fed Funds are sold daily to various financial institutions (commercial banks, thrift institutions, agencies and branches of foreign banks in the United States, federal agencies, and government securities dealers) throughout the United States. The most common duration or term for fed funds transaction is overnight, though longer-term deals are arranged. The rate at which these transactions occur is called the fed funds rate.

Fed funds transactions can be initiated by either a funds lender or a funds borrower. An institution seeking to lend fed funds identifies a borrower directly, through an existing banking relationship, or indirectly, through a fed funds broker. The most commonly used method to transfer funds between depository institutions is for the lending institution to authorize its district Federal Reserve Bank to debit its reserve account and to credit the reserve account of the borrowing institution.

Most overnight loans are booked without a contract. The borrowing and lending institutions exchange verbal agreements based on various considerations, particularly their experience in doing business together, and limit the size of transactions to established credit lines in order to minimize the lender's exposure to default risk.

Overnight fed funds transactions under a continuing contract are renewed automatically until termination by either the lender or the borrower. This type of agreement is used most frequently by correspondent banks that borrow overnight fed funds from a respondent bank.

- **Due From Banks**: demand and time deposits with other banks (does not include loans to banks that may be termed time deposits due from banks) and although there is a slight element of risk involved, it is still considered cash.

- **Negotiable Certificates of Deposit**, which should be stated at the lower of cost or net realizable value.

- **Investment Securities:** These securities are classified as trading securities, available-for-sale securities or in the case of debt investments, held-to-maturity securities. The classification is based on the intent of the bank as to the length of time it will hold each investment.

- Securities classified as trading securities are those bought for the purpose of selling them within a short time of their purchase. These investments are considered short-term assets and are revalued at each balance sheet date to their current fair market value. Any gains or losses due to changes in fair market value during the period are reported as gains or losses on the income statement because, by definition, a trading security will be sold in the near future at its market value. In recording the gains and losses on trading securities, a valuation account is used to hold the adjustment for the gains and losses so when each investment is sold, the actual gain or loss can be determined. The valuation account is used to adjust the value in the trading securities account reported on the balance sheet. For example if a bank has the following investments classified as trading securities, an adjustment for $9,000 is necessary to record the trading securities at their fair market value.

- **Valuation of Trading Securities**

	Cost	**Fair Market Value**	**Unrealized Gain (Loss)**
XYZ Bonds	$25,000	$24,000	$(1,000)
Gov't Security	65,000	75,000	10,000
Total Trading Securities	$90,000	$99,000	$9,000

The entry to record the valuation adjustment is:

General Journal

Date	Account Title and Description	Ref.	Debit	Credit
20X0				
Dec. 31	Trading Securities Market Value Adjustment		9,000	
	Unrealized Gains and Losses Trading Securities			9,000
	Adjust trading securities to market value			

Debt and equity investments that are not classified as trading securities or held-to-maturity securities are called **available-for-sale securities**. Whereas trading securities are short-term, available-for-sale securities may be classified as either short-term or long-term assets based on management's intention of when to sell the securities. Available-for-sale securities are also valued at fair market value. Any resulting gain or loss is recorded to an unrealized gain and loss account that is reported as a separate line item in the stockholders' equity section of the balance sheet. The gains and losses for available-for-sale securities are not reported on the income statement until the securities are sold. Unlike trading securities that will be sold in the near future, there is a longer time before available-for-sale securities will be sold, and therefore, greater potential exists for changes in the fair market value. For example, assume a bank has available-for-sale securities, whose cost and fair market value are:

Valuation of Available-for-Sale Securities

	Cost	Fair Market Value	Unrealized Gain (Loss)
TLM Bonds	$40,000	$38,000	$(2,000)
Securtiy A	50,000	70,000	20,000
Security B	25,000	22,000	(3,000)

Total Available-for-Sale Securities	$115,000	$130,000	$15,000

The entry to record the valuation adjustment is:

General Journal

Date	**Account Title and Description**	**Ref.**	**Debit**	**Credit**
20X0				
Dec. 31	Available-for-Sale Securities Market Value Adjustment		15,000	
	Unrealized Gains and Losses Available-for-Sale Securities			15,000
	Adjust available-for-sale securities to market value			

In the balance sheet the market value of short-term available-for-sale securities is classified as short-term investments, also known as marketable securities, and the unrealized gain (loss) account balance of $15,000 is considered a stockholders' equity account and is part of comprehensive income. When the balance is a net loss, it is subtracted from stockholders' equity.

A debt investment classified as **held-to-maturity** means the business has the intent and ability to hold the bond until it matures. The balance sheet classification of these investments as short-term (current) or long-term is based on their maturity dates.

- **Marketable Securities**: U.S. Treasury and other U.S. government agencies, States and political subdivisions, exchange listed (publicly traded) securities such as corporate bonds equities, Asset-backed securities Mortgage-backed securities. This account is also sometimes known as Securities Available-for-Sale (amortized; price movements in these securities are dependent upon the movement in market interest rate).

During 2009, many banks in the United States have purchased mortgage-backed securities issued and guaranteed by the Government National Mortgage Association (Ginnie Mae / GNMA), which are also backed by the FHA, in order to improve the bank's balance sheet as they are seen as high quality compared to other securities (due to the federal government guarantee) and also because they receive a zero risk weighting under regulatory guidelines and improve the bank's capital ratios. However, it is some what manipulative of the capital ratio as the replacing FNMA, FHLMC and private label securities with GNMA securities will quickly improve the capital ratios even as loans in the bank's portfolio are deteriorating.

- **Repurchase Agreement (REPO)**

In a typical Repurchase Agreement / REPO transaction, the holder of a security sells it to a counterparty and simultaneously agrees to buy it back again on a pre-determined date.

Conversely, on the other side of the typical Repurchase Agreement / REPO transaction, one party lends cash and receives delivery of the security as collateral and simultaneously agrees to sell it back again on the same pre-determined date.

The party borrowing the cash and pledging the security as collateral is entering into a Repurchase Agreement as they have contractually committed to "repurchase" the security on the expiration date of the Agreement.

The party lending the cash and taking the security as collateral is entering into a Reverse Repurchase Agreement as they have contractually committed to "sell" the security on the expiration date of the Agreement.

The Reverse Repurchase Agreement party (the one taking delivery of the security and lending cash) deposits cash in an amount less than the full price of the security with the original owner (money is usually lent at a discount to the mark-to-market value of the security).

The price of a repo transaction is always expressed as an interest rate.

The "repo rate" reflects the rate on the cash extended but also takes into account the coupon and yield of the fixed income security offered as collateral in the repo transaction. The repo rate is usually lower than the rate of interest the bond pays. The lender of the cash earns the "repo rate." The lender of the bond earns the coupon the bond pays less the repo rate.

In November 2008, the repo rate in the $4.5 trillion U.S. Treasury repo market declined to near zero, which was indicative that traders and investors would have rather held the security instead of the cash. The repo rate also tends to track the U.S. Federal Funds rate, which on October 29, 2008, was decreased to 1.0%. Due to the low repo rate, holders of Treasuries were reluctant to lend them, which further reduced the available supply. This led to a period in November where the number of settlement fails increased (a fail occurs when one party does not receive the security or one other party does not deliver the security).

In this manner the Reverse Repurchase Agreement party has essentially made a short-term, secured loan with minimal risk to the seller of the security and has earned a discount to yield return by lending less than the value of the security but receiving an amount equal to the value of the security at the end of the Agreement.

Conversely, the Repurchase Agreement party (the one that borrowed the cash and pledged the security as collateral) received a low cost, short-term loan and does not have to lose control over a desirable security in their portfolio.

Thus, REPOS cover a wide range of fixed income securities and is a sale and forward repurchase of a security at a specified price for a specified time period. There are no restrictions during the term of the transaction on the use of either the cash or the collateral, other than the agreement that the transaction will be unwound. The yields established in repo transactions are in part a function of the quality of the underlying collateral.

Collateral is generally delivered to the lender through: Actual delivery, either physically or by wire with simultaneous payment; also referred to as delivery vs. payment.

Third party custody, also known as a Tri-party Repo, which refers to having a third party involved in the transaction who acts as the custodian and transfer agent for both parties, In a tri-party repo, both parties to the repo must have cash and collateral accounts at the same tri-party agent. The tri-party agent will ensure that collateral pledged is sufficient and meets eligibility requirements, and all parties agree to use collateral prices supplied by the tri-party agent.

Hold In Custody, sometimes also referred to as Due bill, is when the seller of the security does not deliver the securities for settlement but holds them as the custodian in the repo transaction, while it is more lucrative to both parties as they do not incur the delivery expense this situation can lead to fraud, sometimes it is the only route as the securities may only settle locally.

On maturity date, the cash plus accrued interest is exchanged for the securities (usually "substantially identical" securities).

A back-to-back Repurchase Agreement is one in which the counterparties receive and redeliver the security in the same day.

The United States is the largest repo market followed by France. The U.K. has the largest cross border, multi-currency repo market. In Germany, repo transactions are subject to the same minimum reserve requirements as sight demand deposits (2%).

Loans or Receivables (of various maturities in excess of one year) will represent one of the main business activities of the bank and may account for the largest percentage of total assets. A loan is an extension of credit resulting from direct negotiations between a lender and a borrower. Loans may be held until maturity, may be sold in whole or a portion to third parties, and may also be obtained through purchase in whole or in portion from third parties.

- What is in the portfolio? Corporate / commercial loans (secured / unsecured, fixed-term / revolving)? Construction loans (this is one of the riskiest types of loan), Commercial lease financing, Mortgages (residential or commercial), secured loans, loans to public authorities, consumer loans such as credit card, home equity and personal loans; consumer lease financing?

- Collateralized loans mean that the grantor has in its possession (or a fiduciary, administrator, trustee) readily marketable or highly liquid instruments (cash, CDs, stocks and bonds). Sufficient margin on collateralized credits should also be provided (due to interest rate and market sensitivity).

- Secured loans are secured by assets that are not readily marketable and/or under the control of the recipient of the loan (UCC filings on receivables, pledges of inventory, equipment, assignment of real estate mortgages or rents, contracts). Pledge of inventory and real estate should be adequately insured and in the name the Grantor.

- Loans secured by real estate are loans predicated upon a security interest in real property. A loan predicated upon a security interest in real property is a loan secured wholly or substantially by a lien on real property for which the lien is central to the extension of the credit

- Shown net of Allowance of Losses (the reserve set aside that represents an amount considered by management to be adequate to cover estimated losses in the loan portfolio).

What is the difference between Loan Loss Reserve and Loan Loss Provision? The Reserve is the balance sheet component that has already been established (to cover actual or anticipated deterioration of the loan assets). The provision is the income statement component amount that is charged against earnings and will be added to the Reserves (thus increasing the Reserve account).

Legal lending limits: The legal lending limit for national banks is set forth at 12 U.S.C. § 84. Specifically, 12 U.S.C. § 84(a) indicates that loans to one borrower generally cannot exceed 15% of the bank’s capital and that lenders can make additional loans to a borrower totaling up to 10% of the bank’s capital if those additional loans are fully secured by “readily marketable collateral.” The legal lending limit also generally applies to Federal Deposit Insurance Corporation-insured thrift institutions. See 12 U.S.C. § 1464(u). Respective state law applies legal lending limits to state-regulated banks.

- **Mortgage Servicing Rights (MSRs)**: Many banks that originate primary residential mortgages and then sell them into the secondary market retain the servicing rights of the mortgage. This means that for a fee the bank collects the monthly payment from the mortgagee and passes on the principal and interest components of the payment to the trust that owns the mortgage and then also makes the insurance and real estate tax payments from the escrow account that is maintained.

Mortgage servicing rights represent a future stream of payments. The on-balance sheet carrying value of these MSRs is still subject to a fair value test under FAS 140, Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities. The value of the MSRs are affected by the prepayment speed of the underlying mortgages being serviced because if they pay off faster than had been assumed then there are fewer mortgages to be serviced and a resultant lower income stream than had been anticipated. Thus, in a declining interest rate environment where home owners are refinancing to a lower rate or selling and purchasing a new home and the original MSR is rapidly losing mortgages from the original group to be serviced the bank must now write down the value of the MSR portfolio. Conversely, in a rising interest rate environment the MSRs tend to have a stable or increasing value as the maturity of the MSRs lengthens (as no one is refinancing).

- **Fixed Assets**

Leasehold and freehold land and buildings (at historical cost or at revised market value at time of statements, less depreciation and amortization).

Tangible fixed assets: fixtures, equipment, motor vehicles (depreciated or amortized).

- **Investments**

Brady bonds (should not be carried at a value not exceeding their secondary market value).

Investments in subsidiaries.

- **Other Assets**

Bank-Owned Life Insurance

Other real estate owned ("OREO")

Foreclosed property held by the bank.

- **Intangibles and Goodwill**

Goodwill is generated when a bank purchases an operating company in excess of its book value. U.S. Banks are required under GAAP accounting guidelines to perform goodwill impairment tests periodically.

Liabilities

Current Liabilities

- Due to customers (on sight or time deposits) / Deposits: Savings accounts, regular checking accounts, NOW accounts, money market deposit accounts, CDs.

- **Core Deposits** consist of all interest-bearing and noninterest-bearing deposits, except certificates of deposit over $100,000. They include checking interest deposits, money market deposit accounts, time and other savings, plus demand deposits.

Core deposits represent the most significant source of funding for a bank and are comprised of noninterest-bearing deposits, interest-bearing transaction accounts, non-brokered savings deposits and non-brokered domestic time deposits under $100,000. The branch network is a bank's principal source of core deposits, which generally carry lower interest rates than wholesale funds of comparable maturities.

- **Brokered Deposits** represent funds which the bank obtains, directly or indirectly, by or through any deposit broker for deposit into one or more deposit accounts. Thus, brokered deposits include both those in which the entire beneficial interest in a given bank deposit account or instrument is held by a single depositor and those in which the deposit broker sells participations in a given bank deposit account or instrument to one or more investors. Fully insured brokered deposits are brokered deposits that are issued in denominations of $100,000 or less or that are issued in denominations greater than $100,000 and participated out by the deposit broker in shares of $100,000 or less.

- Due to banks (on-sight or time deposits)

- **Commercial Paper** consists of short-term negotiable promissory notes issued in the United States, which rollover every 30 to 270 days and are usually not collateralized.

Short-term borrowings are usually from banks, securities dealers, the Federal Home Loan Bank, unsecured federal funds borrowings, which generally mature daily.

Fed Funds Purchased are short-term, unsecured borrowings.

Advances from a Federal Home Loan Bank are fully collateralized by loans on the bank's asset-side of the balance sheet.

Dividend payable (preferred stock dividend in arrears)

- **Long-Term Liabilities**

Notes payable

Mortgages payable

Subordinated Note (or debenture) is a form of debt issued by a bank or a consolidated subsidiary. When issued by a bank, a subordinated note or debenture is not insured by a federal agency, is subordinated to the claims of depositors, and has an original weighted average maturity of five years or more. Such debt shall be issued by a bank with the approval of, or under the rules and regulations of, the appropriate federal bank supervisory agency.

Accrued/deferred taxes

- ***Stockholder's Equity / Share Capital***

Common shares (authorized and outstanding). Is there a tier system of voting shares and common shares?

Preferred stock is a form of ownership interest in a bank or other company which entitles its holders to some preference or priority over the owners of common stock, usually with respect to dividends or asset distributions in liquidation.

Some trust related preferred securities may have equity characteristics and are treated favorably under Tier 1 guidelines; and may have lower interest costs. The instruments are deeply subordinated (just ahead of common stock) and have long maturities although they may have call provisions. Dividend payments may have some favorable tax treatment for the issuers. However, these securities generally have debt-like characteristics. The bank is unlikely to defer dividend payments due to the message it may send to other sources of funding.

- Retained Earnings: equity will increase if retained earnings are increasing.

- Subordinated, perpetual notes

Income Statement

- **Income**

Interest income is adversely affected by falling long and short-term interest rates.

- **Interest expense**

Subtracted from Interest Income Only. It represents the cost of funds the company borrows on a short- and long-term basis, buys in the money markets, or takes in from depositors. Competition for customer funding will increase interest expense, placing pressure on margins. Some banks and financial services companies will also break out the average annual interest rate paid on the various sources of funds.

If interest expense is increasing it may be caused by competition forcing the bank to pay more for deposits. Check to see if management relies on high cost funds instead of alternative lower-cost funds to meet the bank's funding needs.

- **Net Interest Income**

This is interest income minus interest expense. Even a small decline in net interest income can result in a large decline in net income if not offset by a decline in expenses.

- **Non-interest Income**

It is important that banks develop/increase revenues derived from non-interest sources (bank services, fees such service charges on deposits, trust income, mortgage servicing fees, securities processing and brokerage services, results of trading operations) that have more stable growth rates and are not tied to loan growth cycles, and can provide an offset if loan growth slows.

□ Other Income

Dividend income: from third party investment or subsidiary/affiliate?

Net/gain loss from securities trading: volatility from year to year.

Foreign exchange: based on customer activity and volatility in the market.

Sale of investments: is it exceptional?

Net commission/fee income; based on transactions such as insurance brokering, stock-broking

Related party transaction(s)

Watch-out for financial institutions that utilize "gain on sale" accounting which means that the company records the sale of a loan immediately but the actual profit is received over the life of the loan. The profit is the difference between the spread that the loan is sold at to the investor and what the seller receives from the Obligor. The problem is that the application of estimated future interest rates (and default rates) is incorrect and the loans are over-valued compared to where interest rates may actually be during the life-time of the loan and whether it will prepay if rates decline, and/or if the loan will default and become un-collectible.

□ Non-interest expense

Personnel costs

As part of the $787 billion U.S. economic stimulus package passed in February 2009, there is a stipulation that all banks that receive infusions from the government's $700 billion financial rescue fund must restrict executive compensation to those persons earning $1 million or more per year in salary may receive only $500,000 in additional bonus compensation. The prohibition does not apply to bonuses that were negotiated as part of an executive's compensation contract signed prior to Feb. 11, 2009. www.ustreas.gov/press/releases/tg15.htm

Premises / branch operating expenses (rent).

Systems development costs

Merger of networks: as companies must compete based on the ability to provide state-of-the art trading, retail access and information service, these costs have risen.

- **Operating income**

After expenses but before provisions and taxes and extraordinary items.

- **Extraordinary / Non-recurring Items**

Material events and transactions that are unusual and infrequent.

Profit (gains) or loss on sale of fixed assets.

- **Provision (for loan losses)**

Changing market conditions where the bank operates may result in a deterioration of loan and lease assets, which may result in actual and anticipated losses (write-down or write-off of the asset's value). The accumulated loss may exceed the existing Loan Reserve thus earnings may have to added to the Loan Reserve account to either increase or replenish the amount to meet an actual or anticipated loss.

- **Taxation**

Current taxation (tax payable on recognized income for the fiscal year, which was paid to federal, state and local, and foreign revenue authorities).

Footnotes

Allowance for losses (Loan Loss Account) - is a reserve account that is set aside by management to cover an estimate of losses (charge-offs) in the loan portfolio. The loan loss account has an opening balance at the beginning of the year, it receives additional provisions based on actual losses and anticipated losses for the coming year; has actual charged-off loans subtracted from the account and then has a closing balance for the year).

Classified Loans - loans that have been determined to be not collectable for the full amount due to the deteriorating performance and/or condition of the borrower. The "classification" is based upon internal examination and rating system (based on generally accepted industry practices) such as non-performing accrual, non-accrual. The Office of the Comptroller of the Currency (OCC) also rates loans are classified as substandard, doubtful, and 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. (Uniform Financial Institutions Rating System established by the Federal Financial Institutions Examination Council)

The acronym CAMELS stands for:

- Capital Adequacy
- Asset Quality
- Management
- Earnings (Profitability)
- Liquidity & Funding
- Sensitivity to Market Risk (losses arising from changes in market prices)

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

In reviewing ratios, two concepts should be kept in mind:

- Level or whether the ratio for a given fiscal period is either equal to or exceeds (which can be either positive or negative depending on the ratio) the established parameters of what is considered a generally acceptable position for that specific ratio.
- Trend or whether the fiscal to fiscal comparison period indicates that the level of the ratio is improving or deteriorating.

In addition, individual ratios must not be reviewed in isolation to other ratios and what is the present strategy of the management of the financial institution.

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.

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 Established by Basel Committee Capital Accord

The Basel Committee on Banking Supervision (BCBS), on which the United States serves as a participating member, developed international regulatory capital standards through a number of capital accords and related publications, which have collectively been in effect since 1988.

The Basel Committee is the primary global standard-setter for the prudential regulation of banks and provides a forum for cooperation on banking supervisory matters. Its mandate is to strengthen the regulation, supervision and practices of banks worldwide with the purpose of enhancing financial stability by establishing a benchmark for measuring bank capital (and for correctly calculating / risk weighting assets, which became the denominator of the capital ratio)

The Committee's members come from Argentina, Australia, Belgium, Brazil, Canada, China, European Union, France, Germany, Hong Kong SAR, India, Indonesia, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, Russia, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.

The present Chairman of the Committee is Mr Stefan Ingves, Governor of Sveriges Riksbank. He was appointed as Basel Committee chairman in July 2011 and has been reappointed until June 2017.

The Committee reports to the Group of Governors and Heads of Supervision (GHOS). The Committee seeks the endorsement of GHOS for its major decisions and its work program.

The Committee seeks to achieve its aims by setting minimum standards for the regulation and supervision of banks; by sharing supervisory issues, approaches and techniques to promote common understanding and to improve cross-border cooperation; and by exchanging information on developments in the banking sector and financial markets to help identify current or emerging risks for the global financial system. Also, to engage with the challenges presented by diversified financial conglomerates, the Committee also works with other standard-setting bodies.

Basel III is a comprehensive set of reform measures, developed by the BCBS, to strengthen the regulation, supervision, and risk management of the banking sector. The measures include both liquidity and capital reforms.

In July 2013, the Federal Reserve Board finalized a rule to implement Basel III capital rules in the United States, a package of regulatory reforms developed by the BCBS. The comprehensive reform package is designed to help ensure that banks maintain strong capital positions that will enable them to continue lending to creditworthy households and businesses even after unforeseen losses and during severe economic downturns. This final rule increases both the quantity and quality of capital held by U.S. banking organizations. The Board also published the Community Banking Organization Reference Guide, which is intended to help small, non-complex banking organizations navigate the final rule and identify the changes most relevant to them. A copy of this document is attached and is a part of this training material.

A copy of the Reference Guide is attached and should be studied carefully.

Key Ratios for Examining Capital Adequacy

Equity Capital

Common Equity Tier 1 capital (CETI) ratio

Equity Capital / 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 before FASB 115 & 133 adjustments.
- Intangibles and net unrealized holding gains (losses) on available-for-sale securities are excluded from Capital.

Tier 1 Leveage Ratio

Tier 1 Capital / Total Tangible Assets (Total Assets less Goodwill and Intangibles)

- Utilized by federal and state banking agencies to determine one of the components of capital adequacy ("Well Capitalized" is equal to or greater than 5%).
- 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.

Tier 1 Risk-based Capital Ratio

Tier 1 Capital / Total Risk-adjusted Assets

- Required to be a minimum 6.0% to be "Well Capitalized"
- Risk-adjusted assets go through the analysis and "weighting" process outlined at the top of this section.

Tier 2 Risk-based Capital Ratio or Total Risk Capital Ratio

Tier 2 Capital / Total Risk-adjusted Assets

- Required to be a minimum 8.0% to be "Well Capitalized"
- For most small banks supplemental / Tier 2 capital is usually the loan loss reserve

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.

Key Ratios for Examining Asset Quality

Loan Loss Reserves / Total Loans

- 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.
- Intangibles and net unrealized holding gains (losses) on available-for-sale securities are excluded from Capital.

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

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 Loans Ratio

Total Loans 90-Days Past Due / Total Loans

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

Management Structure

- Is the bank newly privatized from government ownership?

- 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?

Earnings (Profitability)

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.

New banks, or De Novo banks, are usually not profitable for the first two to three years as they develop their core business operations, hire employees, open branches and may also have to pay a higher interest rate to attract deposits. What the analyst should look at in this case is the "burn rate" (on a monthly and quarterly basis), which is an indication of how much of the initial equity investment (stockholder's equity) is being used up to cover operating expenses. What needs to be demonstrated is that income is increasing faster than expenses and the monthly and quarterly losses are decreasing, hence equity is not decreasing as rapidly.

Overall, 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, nominee and custodial services, executor 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?

The need to charge provisions for loan and lease losses against earnings can also reduce profitability, at lease on a quarterly basis. The bank's management has to look at what type of loans are in the portfolio, what the performance is of the portfolio and what is happening with national, regional and local economic conditions. For instance, recession, increase in bankruptcies, increase in unemployment, local corporate layoffs and plant closings, drought, low farm prices, and so on suggest rising numbers of delinquent loans that the bank must correctly estimate and have sufficient reserves thus provisions may be taken against earnings just as the bank's revenues may be declining. Conversely, if economic conditions are deteriorating and the bank is not provisioning for anticipated losses in order to maintain profitability then problems may develop during the next fiscal period.

Key Ratios for Examining Profitability

Net Interest Margin

Net Interest Income (annualized) / Average Interest Earning Assets

- This is net interest income expressed as a percentage of average 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?

Return on Average Assets (ROAA)

Net operating income (annualized) after taxes (including realized gain or loss on investment securities) / Total Average Assets (assets at the previous fiscal year plus assets at this current fiscal year divided by 2) for a given fiscal year

- 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 0.60% to under 2.0% for U.S. Banks. Historically in the U.S. the benchmark was 1.0% or better for the bank to be considered to be doing well. De novo banks are usually below the 1.0% benchmark.

If the bank is a Subchapter S Corp. then the corporation is treated as a pass-through entity and is not subject to Federal income taxes at the corporate level. Therefore, an adjustment to net income is needed to improve the comparability between banks that are taxed at the corporate level and those that are not.

Return on Average Equity (ROAE)

Net operating income after taxes (including realized gain or loss on investment securities) / Total (average) equity (common stock) for a given fiscal year

- This ratio is affected by the level of capitalization of the financial institution.
- Measures the ability to augment capital internally (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).
- In the long run, a return of around 15% to 17% is regarded as necessary to provide a proper dividend to shareholders and maintain necessary capital strengths.

Adjusted ROE or ROAE:

Net income / Total equity plus loan loss reserves in excess of 10% of equity.

Return on Earning Assets (ROEA)

Revenue from loans, securities, cash equivalents and earning assets (including non-interest) before interest expense / Earning Assets

- Measures the results of operations prior to funding costs and as if the operations were totally funded by equity.

Operating Profit Margin

Operating profits (before the loan loss provision and excluding gains or losses from asset sales and amortization expense of intangibles) / Net operating revenues (interest income less interest expense plus noninterest income)

- 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).
- Inverse of the efficiency ratio.

Non-interest Income to Average Assets Ratio

Non-Interest Income (annualized) / Total Average Assets

- 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 and other fee income, fiduciary, brokerage and insurance activities.

- Realized gains on the sale of securities is 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.

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.

Overhead Ratio

Total Non-Interest Expenses (annualized) / Total Average 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.

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 increasing net interest income, increasing non-interest revenues and/or reducing operating expenses.

- Non-interest expenses (expenses other than interest expense and loan loss provisions, such as salaries and employee benefits plus occupancy plus depreciation and amortization) tend to rise faster than income in a time of inflation.

- 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.

Liquidity & Funding

Funding and Liquidity 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.

A bank's least expensive means of funding loan growth is through deposit accounts. When this is not available, banks must rely on more expensive funding sources such as borrowing funds at wholesale rates or liquidating investment securities portfolios. The best type of deposits are "core" deposits, which are balances that are left at the bank due to convenience (the depositor resides in the area) or through loyalty. Non-core deposits / funding are sources that can be very sensitive to changes in interest rates such as brokered deposits, CDs greater than $100,000, and borrowed money.

The **Deposit Growth Rate**, which is computed by subtracting prior-period total deposits from current-period total deposits, then dividing the difference by prior-period total deposits, indicates how a bank is funding the asset side of its balance sheet.

Funding sources also include:

- Net earnings
- Issuance of common and preferred securities
- Trust preferred securities
- Commercial paper
- Senior debt
- Subordinated debt
- Securitizing various financial assets including credit card receivables and other receivables generally secured by collateral such as single-family residences and automobiles
- Monetizing investment securities

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.

Probably the most critical issue to examine for a bank is the ability to meet obligations. If earnings are poor and liquidity is high, the bank's lending may be too conservative, with a high proportion of proceeds from deposits are invested in low yielding liquid assets. If earnings are low and liquidity is low, then the bank may have an aggressive lending policy coupled with heavy borrowing. It examines "internal" sources of funds: maturing loans and marketable securities; and "external" sources of funds: is the bank dependent on large deposits from a single source or does it have a large and stable retail funding base? (single sources should not exceed 10% of short-term liabilities).

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.

 Sources and uses of funds approach: liquidity required for deposit withdrawals and loan demand.

 Structure of deposits approach: focuses on the stability of deposit liabilities.

Awareness of gap management: gap analysis is a measurement of interest rate sensitivity of assets and liabilities. If a company has a negative duration gap that means that its assets are paying off faster than its liabilities. The response can either be defensive or aggressive with regard to managing the spread between the yields of the institution's assets and their income from service sales and the cost of carrying on their operations, especially the return paid to savers to attract deposits and equity investments.

Management's goal for assets:

Primary reserves

 Sufficient cash on hand to cover customer deposits and withdrawals or clearing and collecting check payments; and maintain contemporaneous reserve requirements.

 Cash in the vault is not earning interest.

 Cash/total assets ratio rises in relation to the size of the institution.

Secondary reserves

 Marketable securities portfolio: short-term and liquid for cash needs and pledging collateral.

 U. S. Treasury: relatively short-term maturities, increasing to 20% of total assets due to favorable tax and capital reserve treatment.

 Securities of states and municipalities: declined due to less favorable tax and capital treatment.

Loans

- At a rate in excess of the cost of funds, to borrower with a good credit profile.
- Rates on corporate loans have been declining due to disintermediation/competition.
- Real estate loans have the highest margin but are less liquid and riskier.
- Total loans tend to approximate 60% of the total assets.

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 theory: 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.

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.

Funding requirements.

- Customer deposits: the least expensive source of funding for the institution. The institution is seeking "core deposits," or passive accounts that stay with the institution out of loyalty or convenience (checking accounts, savings certificates and regular savings accounts). What happens if a bank experiences a credit ratings downgrade: deposits from local municipalities, state governments, escrow accounts and fiduciary deposits must be withdrawn if the downgrade results in a non-investment grade rating.
- Non-deposit borrowed funds: cost more than customer deposit funds
- Federal funds for short-term liquidity.
- CDs if funding is needed for a longer period

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.

Management's goal for Capital: provide the buffer to absorb losses, must maintain adequate equity capital to satisfy regulatory requirements, and have a financial condition that allows it to borrow funds.

- Must meet BIS risk assets to capital guidelines: 4% Tier one, 8% including Tier two capital; risk weighted asset categories.
- If condition has weakened, then funds will cost more.

It is poor liquidity, as opposed to poor asset quality or inadequate capital that leads to most bank failures.

Key Ratios for Examining Liquidity

Loans (gross) / Total Deposits

- Indicates the percentage of a bank's loans funded through deposits (measures funding by borrowing as opposed to equity)
- Maximum 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.

Liquid Assets to Total Deposits

Liquid Assets / Total Deposits

- Measures deposits matched to investments and whether they could be converted quickly to cover redemptions.

Issues Affecting Banks

- Further disintermediation of bank assets: trend toward the securitization of assets by corporate customers (banks will decrease as primary suppliers of credit to high quality borrowers. This means that a higher proportion of bank's remaining credit exposure will be to less marketable credits where there is less demand and less hedging instruments available) and the increasing use of mutual funds and private pension funds by consumer customers. Other issues include:
- The continuing increase in non-bank competitors offering similar services.
- Continued deregulation and globalization of services.
- Increased technological innovation and technology costs in order to compete effectively.
- Cyber Attacks and breach of sensitive information
- How to differentiate and appropriately price services such as origination, structuring and administration.
- Consistent risk pricing and Basle Committee capital requirements for credit risk.