Bank Valuation

Financial Issues, Valuation Implications

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Outline

Introduction
- Current Industry Issues Affecting Bank Financial Analysis

Current Valuation Issues
- Asset Approach
- Guideline Company Method
- Guideline Transactions Method
- Discounted Cash Flow Method
- Financial Assets & Liabilities
Current Industry Issues
1. Overview

- Sector overview – then vs. now
- Bank financial analysis is an exercise in risk assessment and measurement
  1. Credit risk
  2. Interest rate risk
  3. Liquidity risk
- Other Issues
  4. Capital
  5. Holding company/subsidiary relationship
  6. Regulation
### Sector Overview – Then vs. Now

<table>
<thead>
<tr>
<th></th>
<th>Assets &gt; $10B</th>
<th>Assets $3B - $10B</th>
<th>Assets $500M - $1B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Tax ROA</td>
<td>1.83%</td>
<td>1.40%</td>
<td>1.73%</td>
</tr>
<tr>
<td>ROA</td>
<td>1.21%</td>
<td>0.94%</td>
<td>1.12%</td>
</tr>
<tr>
<td>ROE</td>
<td>14.0%</td>
<td>8.3%</td>
<td>12.4%</td>
</tr>
<tr>
<td>ROTE (~)</td>
<td>20.5%</td>
<td>11.3%</td>
<td>16.1%</td>
</tr>
<tr>
<td>Tangible Common / Tang Assets</td>
<td>5.9%</td>
<td>8.3%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Net Interest Margin</td>
<td>3.41%</td>
<td>3.17%</td>
<td>3.87%</td>
</tr>
<tr>
<td>NIM less Net Charge-Offs</td>
<td>3.18%</td>
<td>2.72%</td>
<td>3.72%</td>
</tr>
<tr>
<td>Fee Income / Revenue</td>
<td>36.4%</td>
<td>35.1%</td>
<td>24.6%</td>
</tr>
<tr>
<td>Efficiency Ratio</td>
<td>60.9%</td>
<td>67.6%</td>
<td>61.2%</td>
</tr>
<tr>
<td>Loans / Assets</td>
<td>62.6%</td>
<td>60.2%</td>
<td>67.6%</td>
</tr>
<tr>
<td>NPAs+ORE / Loans+ORE</td>
<td>0.57%</td>
<td>1.42%</td>
<td>0.49%</td>
</tr>
<tr>
<td>Net Charge-Offs / Avg Loans</td>
<td>0.23%</td>
<td>0.45%</td>
<td>0.15%</td>
</tr>
<tr>
<td>Loan Loss Reserve / Loans</td>
<td>1.11%</td>
<td>1.41%</td>
<td>1.23%</td>
</tr>
</tbody>
</table>

Source: FFIEC Bank Holding Company Performance Report Peer Data

1H14 returns are comparable to 2013 – lower credit and op expenses have offset lower NIMs and mortgage banking income.
Typical “spread” to 10-year US Treasury 6% – 7%

Latest 12 month (LTM) ROE through 2Q14 within the historical range

But, increasing capital requirements and NIM pressure from very low rates may cause some narrowing
Community Banks

Recent Industry Trends

Current Challenges

- Yields under NIM compression via Fed’s zero interest rate policy (ZIRP)
- Loan demand still lagging in many regions
- Operating leverage is tough to achieve given pressure on revenues and rising compliance expenses
- Regulatory expectations regarding higher capital ratios (and more common equity within the capital structure)
1. Asset Quality

- Median nonperforming asset ratios remain elevated due to legacy assets
- Weaker underwriting of new loans?

Source: Mercer Capital research, SNL Financial
Peer group includes approximately 3,900 banks with assets between $100 million and $5 billion
OREO = Other Real Estate Owned = Foreclosed Property
1. Asset Quality

**What trends would indicate higher credit risk?**

- Level of and trend in non-performing assets
- Composition of the portfolio (e.g., level of construction and development loans; type of C&D loans, such as land vs. finished houses)
- Historical growth rates
- Weak market
- High loan yields
- Out-of-market loans, particularly purchased participations
- Large exposures to one borrower
- Experience of management
- Off balance sheet exposure (mortgage repurchase claims, for instance)
- Low charge-offs in relation to level of problem loans
- Less onerous loan terms (interest only versus amortizing loans, for example)
1. Analyzing Asset Quality

**Loan Loss Reserve Adequacy**

- **Reserve / Loan Ratio**
  - Effect: Declining ratio suggests that the bank’s loan loss provision is not keeping up with growth or loan losses. Future income could be affected as provisions are recorded to account for previous growth.

- **Reserve / Non-Performing Assets**
  - Effect: Declining ratio suggests that credit risk in the portfolio is mounting and reserve may not be adequate to cover potential losses.

- **Directional consistency**
  - Expect that reserve should increase along with problem loans.

- **Composition of portfolio**

- **Gut instinct – impression of management, markets in which the bank operates, product types emphasized**

- **Migration to Current Expected Credit Loss (CECL) model for determining reserves in the offing**
Assume that you believe the reserves are appropriate and management has a good grasp of the portfolio. How should you reflect asset quality issues in an appraisal?

- Locate a group of guideline companies/transactions that share the characteristics of the subject bank
- Factor the asset quality issues into the cash flows of a discounted cash flow analysis or adjust the discount rate

Assume, on the other hand, that you don’t believe the reserves are appropriate or that credit risk is greater than management believes. How should you deal with this issue?

- Adjust the loan loss reserve for the assumed deficiency
- Adjust the guideline company/transaction multiples
- Perform some type of scenario analysis in a DCF with higher credit loss scenarios
2. Interest Rate Risk

- **Interest rate risk** represents the impact on revenue, earnings, or equity attributable to changing interest rates.

- **Community banks’ net interest margins** generally have been under pressure but NIMs appear to have stabilized more recently:
  - Funding cost leverage is waning:
    - Limited opportunities to reduce rates on non-maturity deposits and declining spreads between rates on new CDs and maturing CDs.
    - Loan competition is aggressive; significant pressure on community banks to match longer term, fixed rate loan pricing offered by larger banks.
    - Obtaining yield in the bond market is challenging without going out on the yield curve.

- **In short, Fed’s zero interest rate policy will be a challenge for banks**:
  - Most at risk appear to be banks with larger commercial loan portfolios.
2. Interest Rate Risk – Rising Rates Always Around the Corner

Forward Eurodollar 90-day spot rates (%) at four points in time

- May-09 Eurodollar
- Feb-11 Eurodollar
- Jul-13 Eurodollar
- Aug-14 Eurodollar

* Forward curves are as of 5/4/09, 2/2/11, 7/19/13 and 8/8/2014

Source: WSJ and Bloomberg

Euro$ settled based on 90-day LIBOR... 0.70%
Jun 09... 0.24% today
2. Interest Rate Risk

Quarterly Net Interest Margin

Source: Mercer Capital research, SNL Financial
Peer group includes approximately 3,900 banks with assets between $100 million and $5 billion
Net Interest Margin = Net Interest Income / Average Earning Assets (Yield on Earning Assets – Cost of Earning Assets)
3. Liquidity Risk

- Liquidity risk represents the ability of banks to satisfy obligations to depositors or other creditors
  - Usually appears in stressed environments or in conjunction with other risks
  - Greater pressure from regulators to hold on balance sheet liquidity
  - New liquidity rules limited to larger banks but may eventually trickle down
4. Capital

- By regulation, banks need to maintain certain ratios of “capital” to assets
  - Currently, “Tier 1 Capital” is basically defined as shareholders’ equity, minus intangible assets, plus/minus the loss/gain on available-for-sale securities
    - Also can include preferred stock and trust preferred securities (subject to certain limits) in holding company’s Tier 1 capital
    - TARP Capital Purchase Program preferred stock is Tier 1
  - “Tier 2” capital includes the loan loss reserve and subordinated debt
4. Capital

**Capital standards will change significantly**

- Transition to Basel III standards for banks and holding companies with more than $500 million in assets
- Introduction of a new capital measure – Tier 1 common ratio
- Significant tightening of rules regarding instruments that qualify as capital; hybrid instruments, such as trust preferred securities, to be phased out
- Less favorable treatment of items such as mortgage servicing rights
- New rules regarding the calculation of risk-weighted assets
- New capital buffer and impact on dividends and bonuses

**Implications**

- Need to augment capital to comply with Tier 1 common metric
- Impact on return on equity
5. Holding Company/Sub. Relationship

- Relationship between the bank and holding company is important
- A bank holding company can appear reasonably stable from a consolidated perspective but have underlying financial challenges
  - Given legal structure between bank and holding company, bank is the primary source of funds for the holding company (absent the sale of equity/debt by the holding company)
  - Holding company, in turn, has liquidity needs of its own (debt service, operating expenses, taxes)
  - Limitation may exist at the bank that prevents funds from being transferred to the parent
- It’s important to review the sources and uses of funds at the parent company level
6. Regulation

- Regulators have become much more assertive
- Significant focus now on compliance issues
  - Bank Secrecy Act, Anti-Money Laundering, Mortgage Origination and Servicing, etc.
- Valuation impact can be more difficult to quantify
  - Most banks spending significantly more on compliance activities than five years ago
  - Potential restrictions on M&A, adverse scores on regulatory exams
Valuation Structure
Most banks are wholly-owned subsidiaries of bank holding companies. Most valuation engagements, in turn, involve valuing the common stock of the bank holding company.

In the adjacent example, the valuation analyst would use shareholders’ equity of $7,000 and net income of $780 in the valuation analysis.
### Common Valuation Metrics

- Bank valuation analyses use multiples based on both income statement and balance sheet metrics

#### Income Statement
- Historical net income
- Forward net income
- Pre-tax, pre-provision net income (net interest income, plus non-interest income, minus non-interest expense)

#### Balance Sheet
- Stated (GAAP) shareholders’ equity
- Tangible shareholders’ equity (stated shareholders’ equity less acquisition-related intangible assets)
- Deposits
- Core deposits (variously defined, but can exclude CDs > $100,000, CDs > $250,000, and/or brokered deposits)
- Assets
Valuation Perspective

- **Public Market Value**
  - Core profitability
  - Growth record and prospects ... EPS, TBVPS, DPS and revenue
  - Organic vs. acquisition growth
  - Credit quality
  - Capital
  - Risk perceptions
  - Liquidity of shares
  - Location

- **Acquisition Value**
  - Core profitability
  - Expense saves (who gets credit?)
  - Revenue synergies (reality?)
  - Number of bidders
  - Alternative targets for bidders
  - What a buyer can afford
  - Stated multiples to seller vs. pro-forma multiples to buyer (P/E with expense savings, P/TBV after balance sheet marks)
Earning Power Analysis

How does your assessment of the income statement and balance sheet affect your analysis?

Scenario 1: Assume that the bank is profitable
1. Adjust the income statement and balance sheet
2. Use balance sheet-based measures as another indicator of value

Scenario 2: Assume that the bank’s earnings are depressed or it is operating at a loss
1. Adjust the income statement and balance sheet
2. Estimate earning power via a normalized return on assets or equity
3. Emphasize balance sheet-based measures over income statement measures
4. Discounted cash flow analysis
# Adjust the Financial Statements

## Common Adjustments:

<table>
<thead>
<tr>
<th><strong>Income Statement</strong></th>
<th><strong>Balance Sheet</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>» Eliminate non-recurring gains and losses (e.g., securities)</td>
<td>» Adjust to reflect market values of assets</td>
</tr>
<tr>
<td>» Recognize normalized loan loss provision</td>
<td>▪ Securities carried at cost</td>
</tr>
<tr>
<td>» Normalize tax rate</td>
<td>▪ Investments in other companies carried at cost or equity</td>
</tr>
<tr>
<td>» Purchase accounting amortization</td>
<td>» Recognize estimated cost of settling contingent liabilities</td>
</tr>
<tr>
<td>» Life insurance proceeds</td>
<td>» Normalize loan loss reserve</td>
</tr>
<tr>
<td></td>
<td>» Adjust intangible assets</td>
</tr>
</tbody>
</table>
Estimate Normalized ROA/ROE

Sometimes, a bank has a (really) bad year but otherwise has a profitable history. You can use historical returns to estimate earning power

- Danger is glossing over the exposures arising from the current environment
- Past returns may not be indicative of future returns

<table>
<thead>
<tr>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Average Assets</td>
<td>$277,372</td>
<td>$254,470</td>
<td>$231,336</td>
<td>$226,800</td>
<td>$210,000</td>
<td>$200,000</td>
</tr>
<tr>
<td>Average Equity</td>
<td>$23,148</td>
<td>$25,228</td>
<td>$22,785</td>
<td>$20,518</td>
<td>$18,205</td>
<td>$16,000</td>
</tr>
<tr>
<td>Net Income</td>
<td>$(2,080)</td>
<td>$2,443</td>
<td>$2,267</td>
<td>$2,313</td>
<td>$2,205</td>
<td>$2,000</td>
</tr>
<tr>
<td>Return on Average Assets</td>
<td>-0.75%</td>
<td>0.96%</td>
<td>0.98%</td>
<td>1.02%</td>
<td>1.05%</td>
<td>1.00%</td>
</tr>
<tr>
<td>Return on Average Equity</td>
<td>-8.99%</td>
<td>9.68%</td>
<td>9.95%</td>
<td>11.27%</td>
<td>12.11%</td>
<td>12.50%</td>
</tr>
</tbody>
</table>

Average Return on Assets 1.00% <= excluding 2014
Average Return on Equity 11.10% <= excluding 2014

<table>
<thead>
<tr>
<th></th>
<th>ROA</th>
<th>ROE</th>
</tr>
</thead>
<tbody>
<tr>
<td>x Normalized ROA / ROE 1.00%</td>
<td>11.10%</td>
<td></td>
</tr>
</tbody>
</table>

= Estimated Earning Power $2,779 $2,570
Asset Approach
Asset Approach

- **Common adjustments**
  - **Assets**
    - Loans (interest and credit mark)
    - Other real estate owned
    - Securities carried as held-to-maturity
    - Unrecognized intangible assets (core deposit intangible asset)
  - **Liabilities**
    - Certificates of deposit
    - Fixed term borrowings (FHLB advances)
    - Borrowings with wider/narrower credit spreads than at issuance (e.g., trust preferreds)
  - **Equity**
    - Preferred stock
Guideline Company Method
Guideline Public Co. Method

Factors to consider in selecting guideline public companies
• Entity type (bank vs. thrift)
• Size
• Profitability
• Location
• Non-performing assets
• Capital structure (TARP vs. non-TARP, capital ratios)
Sector Overview – Total Return

Total return as of October 14, 2014

Source: SNL Financial
## Trading Multiples: Asset Size Sort

Smaller banks have traded at discounts to larger banks; reflects (a) liquidity, (b) more limited access to capital, (c) growth opportunities, such as industry consolidation

<table>
<thead>
<tr>
<th>Return on Tangible Equity &gt; 10%</th>
<th>Price / LTM EPS</th>
<th>Price / Tangible Book Value</th>
<th>Dividend Yield</th>
<th>Total Assets</th>
<th>Return on Tangible Equity</th>
<th>Non-Performing Assets / Tangible Equity + Reserves</th>
<th>Number of Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets $5 Billion - $10 Billion</td>
<td>14.9</td>
<td>188%</td>
<td>2.38%</td>
<td>6,789,173</td>
<td>13.3%</td>
<td>13.81%</td>
<td>27</td>
</tr>
<tr>
<td>Assets $1 Billion - $5 Billion</td>
<td>13.2</td>
<td>151%</td>
<td>2.50%</td>
<td>2,153,051</td>
<td>12.4%</td>
<td>10.42%</td>
<td>73</td>
</tr>
<tr>
<td>Assets &lt; $1 Billion</td>
<td>11.0</td>
<td>120%</td>
<td>2.70%</td>
<td>722,037</td>
<td>11.5%</td>
<td>18.03%</td>
<td>24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Return on Tangible Equity 0% - 10%</th>
<th>Price / LTM EPS</th>
<th>Price / Tangible Book Value</th>
<th>Dividend Yield</th>
<th>Total Assets</th>
<th>Return on Tangible Equity</th>
<th>Non-Performing Assets / Tangible Equity + Reserves</th>
<th>Number of Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets $5 Billion - $10 Billion</td>
<td>17.8</td>
<td>134%</td>
<td>2.17%</td>
<td>6,311,374</td>
<td>8.3%</td>
<td>13.29%</td>
<td>11</td>
</tr>
<tr>
<td>Assets $1 Billion - $5 Billion</td>
<td>17.3</td>
<td>132%</td>
<td>1.35%</td>
<td>1,903,342</td>
<td>7.9%</td>
<td>15.52%</td>
<td>68</td>
</tr>
<tr>
<td>Assets &lt; $1 Billion</td>
<td>15.7</td>
<td>103%</td>
<td>1.44%</td>
<td>630,428</td>
<td>6.8%</td>
<td>13.88%</td>
<td>52</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Return on Tangible Equity &lt; 0%</th>
<th>Price / LTM EPS</th>
<th>Price / Tangible Book Value</th>
<th>Dividend Yield</th>
<th>Total Assets</th>
<th>Return on Tangible Equity</th>
<th>Non-Performing Assets / Tangible Equity + Reserves</th>
<th>Number of Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets $5 Billion - $10 Billion</td>
<td>nm</td>
<td>nm</td>
<td>nm</td>
<td>nm</td>
<td>nm</td>
<td>nm</td>
<td>0</td>
</tr>
<tr>
<td>Assets $1 Billion - $5 Billion</td>
<td>nm</td>
<td>140%</td>
<td>0.00%</td>
<td>1,064,853</td>
<td>-4.0%</td>
<td>19.19%</td>
<td>9</td>
</tr>
<tr>
<td>Assets &lt; $1 Billion</td>
<td>nm</td>
<td>160%</td>
<td>0.00%</td>
<td>468,348</td>
<td>-1.7%</td>
<td>81.04%</td>
<td>6</td>
</tr>
</tbody>
</table>

Notes:
Return on stated equity used when ROTE unavailable; price/BV used when price/TBV unavailable
Table includes 270 publicly traded banks with assets < $10 billion; market data as of October 13, 2014; financial data as of June 30, 2014
Trading Multiples: Profitability Sort

Price/tangible book value multiples correlated with return on equity

- Multiples for unprofitable banks reflect entity-specific factors, such as potential deferred tax asset valuation allowance reversals

<table>
<thead>
<tr>
<th>Return on Tangible Equity</th>
<th>Return on Tangible Book Value</th>
<th>Price / LTM EPS</th>
<th>Dividend Yield</th>
<th>Total Assets</th>
<th>Non-Performing Assets / Tangible Equity + Reserves</th>
<th>Number of Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return on Tangible Equity &gt; 15%</td>
<td>16.7%</td>
<td>202%</td>
<td>13.7</td>
<td>2.49%</td>
<td>3,630,673</td>
<td>10.30%</td>
</tr>
<tr>
<td>Return on Tangible Equity 10% - 15%</td>
<td>11.8%</td>
<td>148%</td>
<td>13.2</td>
<td>2.50%</td>
<td>1,877,033</td>
<td>12.23%</td>
</tr>
<tr>
<td>Return on Tangible Equity 5% - 10%</td>
<td>8.1%</td>
<td>124%</td>
<td>16.8</td>
<td>1.56%</td>
<td>1,389,712</td>
<td>13.95%</td>
</tr>
<tr>
<td>Return on Tangible Equity 0% - 5%</td>
<td>3.7%</td>
<td>90%</td>
<td>27.9</td>
<td>1.01%</td>
<td>916,665</td>
<td>13.17%</td>
</tr>
<tr>
<td>Return on Equity &lt; 0%</td>
<td>-2.0%</td>
<td>152%</td>
<td>nm</td>
<td>0.00%</td>
<td>1,012,685</td>
<td>28.99%</td>
</tr>
</tbody>
</table>

Notes:
Return on stated equity used when ROTE unavailable; price/BV used when price/TBV unavailable
Table includes 270 publicly traded banks with assets < $10 billion; market data as of October 13, 2014; financial data as of June 30, 2014
### GPCM - Public Market Historical Trends

#### Price/Earnings and Price/Book Value Multiples

**Banks with Assets of $500 Million - $5 Billion & Return on Tang. Equity > 10%**

<table>
<thead>
<tr>
<th>Year</th>
<th>Price/Earnings</th>
<th>Price/Tangible Book Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>17.6</td>
<td>2.57</td>
</tr>
<tr>
<td>2005</td>
<td>15.4</td>
<td>2.37</td>
</tr>
<tr>
<td>2006</td>
<td>16.5</td>
<td>2.37</td>
</tr>
<tr>
<td>2007</td>
<td>13.1</td>
<td>1.74</td>
</tr>
<tr>
<td>2008</td>
<td>13.3</td>
<td>1.73</td>
</tr>
<tr>
<td>2009</td>
<td>13.0</td>
<td>1.57</td>
</tr>
<tr>
<td>2010</td>
<td>12.1</td>
<td>1.58</td>
</tr>
<tr>
<td>2011</td>
<td>11.0</td>
<td>1.23</td>
</tr>
<tr>
<td>2012</td>
<td>10.6</td>
<td>1.27</td>
</tr>
<tr>
<td>2013</td>
<td>13.5</td>
<td>1.62</td>
</tr>
</tbody>
</table>

**Medians:**
- **P/E:** 13.24x
- **P/TBV:** 1.68x

**Source:** Mercer Capital Research, SNL Financial
Guideline Public Co. Method

- After you have identified a group of comparable companies, common valuation metrics are LTM earnings, forward earnings (one or two years), stated book value, and tangible book value.

- Appraisers often adjust public company multiples for differences between the public companies and the subject company. For example:
  - Size (banks appraisers value are often smaller than the smallest publicly traded banks)
  - Location (appraisers see more banks in rural areas)
  - Growth (banks in communities without much population or economic growth may have more limited growth prospects than the public companies)
Adjustments for differences in the capital structure of the publicly traded banks and the subject bank may also be necessary

- For example, the subject banks may have tangible equity equal to 10% of assets; comparable ratio is 8% for the public banks
- “Excess equity is valued dollar-for-dollar”

<table>
<thead>
<tr>
<th>Capitalization of Tangible Book Value (Shareholders’ Equity)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tangible Book Value</td>
<td>$10,000,000</td>
</tr>
<tr>
<td>Tangible Assets</td>
<td>$100,000,000</td>
</tr>
<tr>
<td>Normalized Tangible Equity/Tangible Assets Ratio</td>
<td>8.00%</td>
</tr>
<tr>
<td>Normalized Tangible Equity</td>
<td>8,000,000</td>
</tr>
<tr>
<td>Excess Tangible Equity</td>
<td>$2,000,000</td>
</tr>
</tbody>
</table>

Normalized Tangible Equity x Price/Tangible Book Value Ratio

= Capitalized Normalized Equity

+ Excess Tangible Equity

= Capitalized Tangible Book Value

$12,000,000

INDICATED VALUE: GUIDELINE PUBLIC COMPANY METHOD
- CAPITALIZED TANGIBLE BOOK VALUE

$12,000,000
Guideline Transactions Method
National Bank M&A History

U.S. BANK & THRIFT ACQUISITIONS

Number of Announced Transactions

Value of Announced Transactions (SMillions)

Source: SNL Financial

* Through 10/14/2014
National M&A Pricing Multiples

Source: SNL Financial
Guideline Transactions Method

» Perhaps easier to apply to a small bank than a larger bank due to the fact that most transaction activity involves smaller banks

» The guideline transactions can often be tailored relatively closely to the subject bank’s location, size, performance, etc.
  - Trade-off is the timeliness of data. How far back in time should you go?
    » Probably depends on the M&A markets at large
Guideline Transactions Method

» Search for comparable transactions based on:
  - Size
  - Profitability
  - Location (e.g., Texas)
  - Metropolitan vs. rural location (e.g., rural Texas vs. Dallas, Houston, etc.)

» Can derive indications of value using:
  - Net income
  - Book value and tangible book value
  - Assets
  - Core deposits
Guideline Transactions Method

» Difficulties have arisen in applying the guideline transactions method
  ▪ Have the same issues in determining earning power as in the guideline public company analysis
  ▪ More deals involve banks in distress with resultant difficulty in determining the true value of the transaction (e.g., contingent payments)
### Guideline Transactions Method

Example application of the guideline transaction method:

<table>
<thead>
<tr>
<th>Financial Metric</th>
<th>Net Income</th>
<th>Tangible Book Value</th>
<th>Core Deposits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Metric</td>
<td>$1,000,000</td>
<td>$10,000,000</td>
<td>$100,000,000</td>
</tr>
<tr>
<td>x Multiple</td>
<td>15.00</td>
<td>1.25</td>
<td>4.00%</td>
</tr>
<tr>
<td>= Product</td>
<td>$15,000,000</td>
<td>$12,500,000</td>
<td>$4,000,000</td>
</tr>
<tr>
<td>+ Tangible Book Value</td>
<td>na</td>
<td>na</td>
<td>10,000,000</td>
</tr>
<tr>
<td>= Indicated Value</td>
<td>$15,000,000</td>
<td>$12,500,000</td>
<td>$14,000,000</td>
</tr>
</tbody>
</table>

Note: Core deposits are defined by SNL as total deposits, less CDs over $100,000, less foreign deposits.
Discounted Cash Flow Method
“CF” – Cash Flow Component

- Since cash is fungible in a bank, the cash flow measure incorporated into a DCF model differs from that used in a non-financial company
  - Most analysts use some form of dividends or “distributable tangible equity” in a DCF model

- Valuing a minority interest
  - Minority investors have no ability to compel the bank to manage to an optimal capital structure. Therefore, the cash flows discounted could be based on the bank’s historical and/or expected dividend policy
“CF” – Cash Flow Component

Valuing a controlling interest

- A control investor has the ability to manage to an optimal capital structure
- Therefore, the analyst can estimate the “distributable tangible equity” that the bank generates, based on a target capital structure or regulatory capital norms
  - In other words, the amount of earnings above the amount necessary to remain in compliance with regulatory capital standards can be distributed
  - What is the “well capitalized” level now?

To derive a controlling interest value, the appraiser can adjust the projections for expected synergies

- Ordinarily, “synergies” take the form of reduced operating expenses. Expected expense reductions are reported by SNL Financial
“CF” – Cash Flow Component

- Projections can involve varying degrees of complexity
  - A projection of asset growth and a projected return on assets
  - A projection of pre-tax, pre-provision net income (i.e., net interest income, plus non-interest income, minus non-interest operating expenses), coupled with a projection of expected loan losses
  - A full projection of a balance sheet and income statement
“CF” – Cash Flow Component

Projection “risks”

- Projecting an income statement without a balance sheet
  - Remember that balance sheets drive income statements for financial institutions
- Not presenting a roll-forward of the loan loss reserve
  - Risk of ending up with unexpected outcomes, such as negative charge-offs (i.e., a net recovery of prior charge-offs)
- Not evaluating the flow of funds between the bank and holding company
  - For example, projecting cash expenses or distributions at the holding company when the bank cannot pay dividends to the holding company
“CF” – Projections

- We often prepare the projections at the subsidiary bank level and then roll them up to the holding company.

<table>
<thead>
<tr>
<th>Consolidated Net Income ($000)</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank Net Income</td>
<td>$728</td>
<td>$656</td>
<td>$991</td>
<td>$1,115</td>
<td>$1,247</td>
<td>$1,386</td>
</tr>
<tr>
<td>1) Interest Expense -- Holding Co. Debt</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2) Other Holding Company Expense</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3) Interest Expense -- Trust Preferred</td>
<td>0</td>
<td>(140)</td>
<td>(140)</td>
<td>(140)</td>
<td>(140)</td>
<td>(140)</td>
</tr>
<tr>
<td>4) Income Tax (Expense) / Benefit</td>
<td>38.3%</td>
<td>0</td>
<td>54</td>
<td>54</td>
<td>54</td>
<td>54</td>
</tr>
<tr>
<td>CONSOLIDATED NET INCOME</td>
<td>$728</td>
<td>$570</td>
<td>$905</td>
<td>$1,029</td>
<td>$1,160</td>
<td>$1,300</td>
</tr>
</tbody>
</table>

| Projected Shareholder Dividend Payout Ratio | 12.00% | 12.00% | 24.00% | 35.00% | 46.50% |
| Projected Dividends Paid to Shareholders | $68 | $109 | $247 | $406 | $605 |
“CF” – Projections

Cash remaining at holding company level is distributed to shareholders

<table>
<thead>
<tr>
<th>Holding Company Cash Flow</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash Receipts:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dividends from Bank</td>
<td>$164</td>
<td>$198</td>
<td>$334</td>
<td>$499</td>
<td>$693</td>
</tr>
<tr>
<td>Income Tax Benefit</td>
<td>54</td>
<td>54</td>
<td>54</td>
<td>54</td>
<td>54</td>
</tr>
<tr>
<td>Trust Preferred Issuance</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Additional Borrowings</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Inflows</strong></td>
<td>$218</td>
<td>$252</td>
<td>$388</td>
<td>$552</td>
<td>$747</td>
</tr>
</tbody>
</table>

| Cash Disbursements:       |      |      |      |      |      |
| Holding Company Expenses  | $140 | $140 | $140 | $140 | $140 |
| Injections into Bank Subsidiary | 0    | 0    | 0    | 0    | 0    |
| Share Repurchase          | 0    | 0    | 0    | 0    | 0    |
| Common Dividends Paid     | 68   | 109  | 247  | 406  | 605  |
| **Total Outflows**        | $208 | $249 | $387 | $546 | $745 |

REMAINING CASH FLOW AVAILABLE

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>
Discount Rate

Do you use a cost of equity or a weighted average cost of capital for a bank?

- Generally, analysts use a cost of equity
- A WACC constructed with the cost of deposits as an input makes little sense (cost of deposits does not increase along with leverage)
- However, a WACC incorporating the holding company’s cost of borrowings (such as the cost of its trust preferred securities) makes some theoretical sense
  - Effectively, the analyst is assuming that the bank’s regulatory capital requirements are funded with some mixture of debt and equity and the cost of such capital can be captured in a WACC
Valuation of Financial Assets & Liabilities
Discount Rate

- **Assets and liabilities commonly valued to comply with ASC 805**
  - Loan portfolio
  - Depositor customer relationships (core deposit intangible asset)
  - Other customer relationships
    - Insurance
    - Trust/asset management
  - Certain liabilities
    - Time deposits
    - FHLB advances
    - Holding company funding (sub debt, trust preferred securities)
Discount Rate

- **Loan portfolio valuations**
  - Key estimates:
    - Prepayment speeds
    - Credit losses
      - Probability of default / loss given default methodology
    - Discount rates
      - Rates on newly originated loans
      - Rates on traded debt instruments
      - Funds transfer pricing analyses
Discount Rate

Core deposit valuations

• Generally valued using a “replacement cost” approach
• Key estimates:
  – Cash flow stream
    – Fully loaded cost of deposits (interest cost + servicing costs – noninterest income)
    – Cost of alternative funding
  – Attrition rates
    – Study of account closure activity
  – Discount rate
Information Sources
From Bank

- **Board packets**

- **Asset quality information:**
  - Past-due/classified loan reports
  - Loan loss reserve calculation and supporting documentation
  - Write-ups of significant classified loans
  - Schedule of other real estate owned
  - Loan participation reports
  - Loans to large borrowers report
  - Loan concentration report (such as for industry concentrations)
  - Commercial real estate concentration analyses

- **Securities portfolio inventories**

- **Asset/liability management reports**

- **Capital plan**
Publicly Available

- **Federal Financial Institutions Examination Council (www.ffiec.gov)**
  - Regulatory filings for bank holding companies (FR Y-9s)
  - Regulatory filings for banks (Call Reports) and thrifts (Thrift Financial Reports)
  - Uniform Bank Performance Reports – peer group data

- **FDIC (www.fdic.gov)**
  - Regulatory filings for banks (Call Reports) and thrifts (Thrift Financial Reports)
  - Reviews of industry performance
  - Summary of Deposits – tracks deposit market share for banks
  - Regulatory orders

- **SNL Financial (Charlottesville, VA) (www.snl.com)**
  - Track and sell data on bank M&A transactions

- **American Bankers Association (www.aba.com)**

- **American Banker newspaper (www.americanbanker.com)**
  - In particular, see Banker’s Glossary (http://www.americanbanker.com/glossary/a.html)

- **Mercer Capital (www.mercercapital.com)**
  - Monthly *BankWatch* publication, summarizing regional trends in bank stock pricing and bank M&A activity
  - *The Bank Director’s Valuation Handbook* provides an overview of valuation issues frequently occurring among financial institutions
Questions?
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