P / BV Multiple Interpretation

- **Question the Other Day:**

- “I see that in the public comps of your Bank Valuation model, Citi is trading below a 1x P / TBV (Price to Tangible Book Value) multiple.

- Is the market saying that Citi’s shares are worth less than the liquidation value of the company? How does that make sense?”

P / BV Multiple Interpretation

- **Question the Other Day:**

- “Also, what does it mean if the bank were trading at a higher P / TBV or P / BV multiple, either over 1x or at a higher number than the comparables?”

The Answer:

- **ANSWER:** P / BV multiples are **shorthand** for the valuation of commercial banks
- P / BV is about **expected returns** vs. **targeted returns**
- **P / BV > 1x:** Expectations exceed your target
- **P / BV < 1x:** Expectations are lower than your target
- **Expectations** = Return on Equity; **Target** = Cost of Equity

For Normal Companies…

- **DCF Analysis:** If you know the Final Year FCF, the Terminal FCF Growth Rate, and the Discount Rate…

- Those give you an **implied** EBIT or EBITDA Multiple

- **That Multiple:** It's a shorthand way of saying:

"If we're targeting an annual return of 8.0%, and FCF is growing at 0.5%, and the final year figure is $388 million, we'd be willing to pay 5.9x EBITDA for the company."

For Commercial Banks…

- **Valuation:** FCF, EBIT, and EBITDA are meaningless for commercial banks, so you rely on **Dividends** and **Net Income** (Growth) instead

- **Dividends** = Proxy for Free Cash Flow for a bank

- **Dividends**, **Net Income Growth**, the **Discount Rate**, and **P / BV** are linked – just like FCF, FCF Growth, the Discount Rate, and EV / EBITDA are linked

For Commercial Banks…

- **Terminal Value for Normal Companies** =

$$\frac{\text{FCF One Year After the Final Year}}{(\text{Discount Rate} - \text{FCF Growth Rate})}$$

- **Terminal Value for Commercial Banks** =

$$\frac{\text{Dividends One Year After the Final Year}}{(\text{Discount Rate} - \text{Net Income Growth Rate})}$$

- **Bottom Part:** Straightforward… but what about the top?

For Commercial Banks…

- **Dividends One Year After the Final Year →**
  - **Book Value:** This is a bank's "starting point" for making money → tied to its Assets and Liabilities
  - **ROE:** How much Net Income does it earn on that BV?
  - **Payout Ratio:** What NI % does it pay in Dividends?
  - **NI Growth Rate:** What will Net Income be *next year*?

For Commercial Banks…

- **Terminal Value for Commercial Banks** =

$$\frac{\text{BV} * \text{ROE} * \text{Payout Ratio} * (1 + \text{NI Growth Rate})}{(\text{Cost of Equity} - \text{NI Growth Rate})}$$

- That “Terminal Value” is really the **Equity Value**…

- And since P / BV = Equity Value / Book Value, you can divide the numerator by BV

For Commercial Banks…

- **P / BV** =

$$\frac{\text{ROE} * \text{Payout Ratio} * (1 + \text{NI Growth Rate})}{(\text{Cost of Equity} - \text{NI Growth Rate})}$$

- *Change* ROE so it refers to Earnings in the *next* period

- **P / BV** =

$$\frac{\text{Next Year ROE} * \text{Payout Ratio}}{(\text{Cost of Equity} - \text{NI Growth Rate})}$$

Net Income and Dividend Payouts

- **Banks:** Two options for their Net Income:
  - **Option #1:** Pay it out as Dividends
  - **Option #2:** Retain the Net Income for growth

- **EX:** If a bank's ROE is 15%, they earn 15% of their Book Value as Net Income…

- **Payout Ratio** of 60% → Net Income grows at (1 – 60%) * 15% = 6% per year

Net Income and Dividend Payouts

- **Net Income Growth** = (1 – Payout Ratio) * ROE
- **NI Growth** = ROE – ROE * Payout Ratio
- NI Growth – ROE = – ROE * Payout Ratio
- ROE – NI Growth = **ROE * Payout Ratio**

The Meaning of the P / BV Multiple

- **P / BV** =

$$\frac{\text{ROE} * \text{Payout Ratio}}{(\text{Cost of Equity} - \text{NI Growth Rate})}$$

- **P / BV** =

$$\frac{(\text{ROE} - \text{NI Growth Rate})}{(\text{Cost of Equity} - \text{NI Growth Rate})}$$

The Meaning of the P / BV Multiple

- **P / BV** =

$$\frac{\text{(ROE – NI Growth Rate)}}{\text{(Cost of Equity – NI Growth Rate)}}$$

- **P / BV > 1x:** ROE exceeds Cost of Equity
- **P / BV = 1x:** ROE equals Cost of Equity
- **P / BV < 1x:** ROE is lower than Cost of Equity

In Real Life…

- **Typically:** Pay more attention to **Tangible Book Value** and **Return on Tangible Common Equity (ROTCE)**

- **Difference:** You subtract out Goodwill and Other Intangible Assets with these → more accurate

- **Citi:** Market is saying that its ROE (or ROTCE) will be lower than its Cost of Equity – and the opposite for the other banks! (WF, BOAML, JPM)

In Real Life…

- **Citi:** Are its shares worth less than the liquidation value of the company?

- Technically, *yes*… but it might be better to think of it as:

- *"The market believes Citi's ROE will be less than its Cost of Equity, and therefore its Net Assets are worth <u>less</u> than their current Balance Sheet values."*

Takeaways and Implications

- **Point #1:** Return on Equity and P / BV are **strongly correlated**, or should be, for commercial banks

- **P / BV > 1x:** ROE exceeds Cost of Equity

- **P / BV = 1x:** ROE equals Cost of Equity

- **P / BV < 1x:** ROE is lower than Cost of Equity

Takeaways and Implications

	High ROE	Low ROE
High P / BV Multiple	Valued appropriately (?)	**Potentially overvalued**
Low P / BV Multiple	**Potentially undervalued**	Valued appropriately (?)