Valuation of Financial Service Firms

Dr. S K Gupta
Managing Director
ICMAI Registered Valuers Organization

The Perspective

The role that banks play in an economy is undeniably important. Banks promote economic wealth, and signify strength of a country's financial system, apart from its responsibility of keeping public trust and confidence. The traditional functions of deposit and loan have evolved into complex practices that banks use to provide financial backbones for an economy.

A country's stability is largely dependent on banks because of its: a) ability to maintain resiliency through diversified sources of revenues, assets, and liabilities; b) ability to achieve higher profitability from revenue and cost synergies; c) has greater transparency that helps lower counterparty risks; d) can early detect accumulating systemic risks; and e) can better deal with mismatches in loan-deposits

Bank valuation is an estimation of its market value in terms of money on a certain date, taking into account the factors of aggregate risk, time and income expectations. Banks and other financial services firms can be particularly challenging to value. Their financial statements are unlike those found in other industries, and once familiar concepts like working capital and operating income become confusing and difficult to define let alone calculate. The consequence is that to value a bank requires a wholly different approach which carries its own set of potential pitfalls.

Overview on possible issues in valuation of financial service firms

Financial service firms have much in common with industrial firms but, we need to understand whichare the features that make them different from the other firms and which are the implications in a valuation perspective.

Debt, "raw material" or source of capital?

When we talk about capital for non-financial service firms, we tend to talk about both debt and equity. A firm raises funds from both equity investor and bondholders (and banks) and uses these funds to make its investments. When we value the firm, we value the value of the assets owned by the firm, rather than just the value of its equity. With a financial service firm, debt seems to take on a different connotation. Rather than viewing debt as a source of capital, most financial service firms seem to view it as a raw material.

The regulatory framework

Due to the risks taken on by banks, their specific role in the economic system, and their dependency on economic cycles, banks are subject to various bank-specific rules and regulations, and the effect of regulatory requirements on value have to be considered. In their role as financial intermediaries, banks absorb imbalances in the savings and investment behaviour of their customers, leading to high volatility in the profit contributions of different bank products before and after risk .Apart from specific rules concerning the accounting of various balance sheet items, banks are subject to specific capital adequacy rules given their role as macroeconomic institutions, including the capital standards put forward by the Basle Committee on Banking Regulations and Supervisory Practices. In addition, rules on the maintenance of minimum reserves and systems for the protection of deposits regulate capital management within banks.

Differences in Accounting Rules

The accounting rules used to measure earnings and record book value are different for financial service firms than the rest of the market, for two reasons. The first is that the assets of financial service firms tend to be financial instruments (bonds, securitized obligations) that often have an active market place. Not surprisingly, marking assets to market value has been an established practice in financial service firms. The second is that the nature of operations for a financial service firm is such that long periods of profitability are interspersed with short periods of large losses;

Reinvestments

Banks are often constrained by regulation in both where they invest their funds and how much they invest. If we define reinvestment as necessary for future growth, there are other problems associated with measuring reinvestment with financial service firms. Usually we consider two items in reinvestment – net capital expenditures and working capital. Unfortunately, measuring either of these items for a financial service firm can be problematic.

Approaches to valuation of financial service firms

Market approach

The market (or relative valuation) approach is probably the simplest way to value a bank. The most sufficient multiples for bank valuation are the price- earning ratio (P/E) and the price-to-book value ratio (P/BV). P/E ratio, as a function of three variables – the expected growth rates in earnings, the pay-out ratio, and the cost of equity,

Asset-based approach

The asset-based valuation of a bank requires valuing the loan portfolio of the bank (which comprises its assets) and subtracting the outstanding debt to estimate the value of equity. It is frequently used to establish the liquidation value of a bank for possible legal proceedings. However, the value-based approach is difficult to apply when the bank enters multiple businesses (commercial banking, investment banking, etc.) or regions (countries)

Income approach

The income approach focuses on the conversion of expected future economic benefits into their present value. The free cash flow on equity (FCEE) method is highly valid for bank valuation, also because it reflects the fact that banks can create value from the liability side of the balance sheet. The alternative representation of FCFE is the summation of dividends paid, potential dividends, and equity repurchases and issues.

The dividend discount model (DDM) is another discounted cash flow models, which applies to banks since they are publicly traded companies. To value a stock, using the dividend discount model, the estimates of the cost of equity, the expected pay-out ratios, and the expected growth rate in earnings per share over times are needed. The expected dividend per share in a future period can be considered as a product of the expected earnings per share in that period and the expected pay-out ratio. It allows us to focus on the expected growth in earnings (more accessible and reasonable data) and change the pay-out ratio over time (to reflect changes in growth and investment opportunities).

The major discussion on the income approach concerns the possibilities of estimating the cost of equity. The cost of equity for a bank has to reflect the portion of the risk in the equity that cannot be diversified away by marginal investment in the stock. Several methods are available to calculate the expected return on equity or discount rate for banks: - Gordon Growth Model - An average profitability - The cost of foreign funds - Capital Asset Pricing Model (and its extensions)

Contingent claim valuation

Option pricing models based on advanced mathematics could be used for bank valuation as well. The Black-Scholes model is appropriate usage in bank valuation, since operations on both assets and liabilities are significant for the banking business structure. The model might be adopted for bank valuation by the following procedures:

1. The risk-free rate is accepted at the same level as in the income approach.

2. The price volatility is calculated from the annual bank statistics. The usage of relatively stable market indexes is also appropriate

3. Instead of Macalay duration, use the weighted average debt turnover as debt duration.

4. S and X variables are determined by the asset-based approach

Methods of valuation of financial service firms

1. **Net Asset Based Valuation**: Asset based valuation approach establishes the liquidation value of a bank for possible legal proceedings but this value-based approach is difficult to apply when the bank enters multiple businesses (commercial banking, investment banking, etc.) or regions (countries). Net asset valuation is not useful for the valuation of banks as whole; it is useful to assess the valuation of individual financial investment.

2. **Discounted cash flow valuation**: DCF focuses on overall growth and stability of bank and not only on profit growth therefore has it emphasizes on factors such as capital growth & renewal, income generated and risk. DCF valuation helps to know about the underlying characteristics of the firm, understand its business and its future risk income & growth.

3. **Free Cash Flow to Equity** : Banks are required to maintain minimum capital to sustain their operations, and there are two measures of capital: Tier 1 capital is the narrower measure and is composed primarily of common equity but also includes noncumulative preferred stock, while Tier 2 capital is a broader measure of capital that includes subordinated debt and cumulative preferred stock. To implement this FCFE model, we need two ingredients. The first is the expected net income over time. The second is the investment in regulatory capital, which will be a function of both the degree to which the financial services firm is under or over-capitalized to begin the process

and the expected growth rate in its risk-adjusted assets.

4. **Relative valuation :** Another way to think of the value of any asset is as a multiple of the earnings it generates. The most sufficient multiples for bank valuation are the price-earning ratio (P/E) and the price-to-book value ratio (P/BV). P/E ratio, as a function of three variables – the expected growth rates in earnings, the pay-out ratio, and the cost of equity, depicts some specific characteristics for bank valuation. The price earnings ratio for a bank is measured much the same as it is for any other firm. The most important issue about the multiple is that "earnings represent the bottom line of the income statement, they can also be affected by different accounting policies. The second multiple we are using is the P/B value. It represents the ratio between the market capitalization of the firm and the book value of equity. The measure is suitable for financial institutions because of the regulatory stress on solvency, capital requirements, and equity maintenance

5. **Residual Income approach** : In this model the equity value of a bank is the sum of the PV of expected excess return and the capital currently invested in the bank. The difference between a DDM and a RIM is that, in a Dividend Discount Model, we use the present value of Dividends and the present value of the Terminal Value of Dividends to value a bank, but in a Residual Income Model you use the difference between ROE and Cost of Equity plus the current Book Value to value the bank. Hence, the excess equity return needs to be calculated.

$Excess\ Equity = (ROE - COE) * Book\ Value\ of\ Equity$

The beginning book value (BV) of equity for the following year is simply the BV of equity of the following year plus the expected retained earnings of the year.

Book value $of\ Equity_n = BV\ of\ Equity_{n-1} + (Net\ Income_{n-1} * Retention\ Ratio)$.

A logical starting point is to look at a long history of the bank's actual returns on equity, and then making adjustments for the future. This is the stage where we should take into account the bank's strengths and weaknesses relative to its competitors, as well as expected changes to the macroeconomic environment .The excess equity is then discounted by the cumulated

COE and added to the initial BV of equity. Afterwards, the terminal value is added to result in current value of equity, before dividing by the diluted number of shares in order to obtain the result of the model:

6 **Excess Return Model :** It arrives at the value of equity as the sum of the current equity capital and the present value of expected excess returns to equity. Finding the current equity capital is as easy as looking at the balance sheet. Finding the present value of excess returns is more challenging. Here is the equation:

Excess Return = (Projected Return on Equity – Cost of Equity) * (Beginning Equity Capital)

Projecting a bank's future return on equity can be challenging. A logical starting point is to look at a long history of the bank's actual returns on equity, and then making adjustments for the future. This approach grounds the analysis in real returns that have been attained in the past (rather than committing the classic business school mistake of starting from zero and building up to returns by layering assumptions upon assumptions, resulting in projections that are orders of magnitude off of the best or worst performance ever achieved by the company, or even any company in the industry!), and then makes allowance for projected changes in the operating environment. This is the stage where the investor takes into account the bank's strengths and weaknesses relative to its competitors, as well as expected changes to the macroeconomic environment.

If a bank is earning extremely high excess returns now, it is important to do a multi-period valuation whereby these returns decline to a long-term sustainable level over time. Once the firm reaches its long-term sustainable operating level, you calculate a terminal value that incorporates this long-run moderate growth. The objective is to arrive at expected excess returns for each year in the future, either through a period of higher than normal growth with a terminal value, or modeling normal growth beginning now (for a relatively established bank).

WHAT MAKES A BANK VALUABLE?
8 COMPONENTS OF BANK VALUATION

1 QUALITY VS. EARNINGS
2 CAPITAL VS. CAPITAL MAKE-UP
3 ASSET QUALITY
4 CORE DEPOSITS – DEPOSIT MIX
5 IMAGE OF BANK IN COMMUNITY
6 HOW WELL BANK STOCK IS MARKETED
7 POSSESS SEVERAL DOMINANT STRATEGIES
8 EMPLOYEE CULTURE – MAINTAIN QUALITY EMPLOYEES IN A BANK

Specifics of banks' valuation:

- Debt seems to take on a different connotation in Banks. Rather than view debt as a source of capital, most financial service firms seem to view it as a raw material. In other words, debt is to a bank what steel is to General Motors, something to be moulded into other financial products which can then be sold at a higher price and yield a profit. Consequently, capital at financial service firms seems to be more narrowly defined as including only equity capital.

- Due to the risks taken on by banks, their specific role in the economic system, and their dependency on economic cycles, banks are subject to various bank-specific rules and regulations, and the effect of regulatory requirements on value have to be considered. Due to banks' specific dependency on macroeconomic factors, legislators give them specific rights to build up reserves.

- Banks are required to maintain capital ratios to ensure that they do not expand beyond their means and put their claimholders or depositors at risk. Second, financial service firms are often constrained in terms of how they can invest their funds.

- Entry of new firms into the business is often restricted by the regulatory authorities, as are mergers between existing firms. From a valuation perspective, assumptions about growth are linked to assumptions about reinvestment. With financial service firms, these assumptions have to be scrutinized to ensure that they pass regulatory constraints.

- Provisions for losses are also an issue for valuation. These provisions reduce net income in the current period but are used to meet expected losses in future periods. In general, while the actual bad debts that occur in any year will not match the provision set aside for that year exactly, the cumulative provisions over time should be equal to the cumulated bad debts over the same period.

- If we define reinvestment as necessary for future growth, there are other problems associated with measuring reinvestment with financial service firms. Usually we consider two items in reinvestment – net capital expenditures and working capital. Unfortunately, measuring either of these items for a financial service firm can be problematic. Consider net capital expenditures first. Unlike manufacturing firms that invest in plant, equipment and other fixed assets, financial service firms invest in intangible assets such as brand name and human capital. With working capital, we run into a different problem. If we define working capital as the difference between current assets and current liabilities, a large portion of a bank's balance sheet would fall into one or the other of these categories. Changes in this number can be both large

and volatile and may have no relationship to reinvestment for future growth.

Conclusion

Bank valuation remains to be an intricate process that was made even more complex by the attempt to be risk averse stemming from lessons learned in the global financial crisis. Although most banks were resilient, these institutions have become careful in its risk taking initiatives, taking measures to be transparent and conservative in all its transactions. This is to protect mainly the depositors and depositors, and largely the stakeholders. The basic loan and deposit functions are now disaggregated on specific characteristics of products and services, so that practices will be focused on reducing risk and increasing returns on these offerings

The basic principles of valuation apply just as much for financial service firms as they do for other firms. There are, however, a few aspects relating to financial service firms that can affect how they are valued. There are, however, a few aspects relating to financial service firms that can affect how they are valued. The first is that debt, for a financial service firm, is difficult to define and measure, making it difficult to estimate firm value or costs of capital. Consequently, it is far easier to value the equity directly in a financial service firm, by discounting cash flows to equity at the cost of equity. The second is that capital expenditures and working capital, which are required inputs to estimating cash flows, are often not easily estimated at financial service firms. In fact, much of the reinvestment that occurs at these firms is categorized under operating expenses. To estimate cash flows to equity, therefore, we either have to use dividends (and assume that what is not paid out as dividend is the reinvestment) or modify our definition of reinvestment. Even if we choose to use multiples, we run into many of the same issues. The difficulties associated with defining debt make equity multiples such as price earnings or price to book value ratios better suited for comparing financial service firms than value multiples. In making these comparisons, we have to control differences in fundamentals – risk, growth, cash flows, loan quality – that affect value. Finally, regulatory considerations and constraints overlay financial firm valuations. Bank valuation is a continuously evolving process and as long as banks play significant roles in economic systems, new methods and theories of valuation need to arise to keep up with the highly dynamic global world.

References

- Benninga, S. Sarig, O.: Bank Valuation. February 13, 2001. http://senverb.boun.edu.tr/pdf/Bank%20Valuation.pdf
- Benninga, S.: Bank Valuation. New York Institute of Finance Course in Singapore,
- Dayal, R., Luther, L., Neu, P. & Tang, T. (2010). After the storm - creating value in banking 2010. Boston Consulting Group
- Eva, H. (2010). Methods of bank valuation. Economic Analysis, 43(1-2), 50-60
- Gounder, C.G., & Venkatechwarlu, M. (2017). Bank valuation models – a comparative analysis. Accounting & Finance Research, 6(3),116-134
- Horvátová, E. (2010). Methods of Bank Valuation. journal of Economic Analysis, 43(1-2), 50-60.
- Miller, W.D.: Commercial Bank Valuation. John Wiley and Sons, Inc., USA 1995, ISBN13 9780471128205.
- Oleg Deev. (2011). Methods of Bank Valuation: A Critical Overview. Financial Assets and Investing, 3, 1-12