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note on how to analyze a bank

Professor Michael R. King wrote this note solely to provide material for class discussion. The author does not intend to provide legal, tax, accounting or other professional advice. Such advice should be obtained from a qualified professional.

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By the end of 2016, the global banking sector was being hit by two major waves: a wave of post-crisis regulations and a wave of digital disruption. The first wave of higher capital requirements and more expensive compliance had increased bank costs and lowered profitability, pushing traditional lending into the shadow banking sector—a mass of under-regulated, non-bank financial firms that provided credit to businesses and households. In the second wave, technology and e-commerce start-ups were capitalizing on the weakness of incumbent banks to launch a variety of Internet-based, financial technology start-ups, targeting lucrative segments of banks’ business. In short, banks around the world were facing lower growth prospects, rising costs, emerging competitors, and shrinking profit margins. In this environment, many banks had lowered their targets for return on equity (ROE) while increasing their emphasis on cutting costs and improving efficiency ratios, reflecting the more regulated and competitive environment.

This note discusses how to analyze a bank from the point of view of an equity analyst or investor. It begins by reviewing the evolution of North American banks from narrow to diversified financial institutions. A description follows of the financial ratios used to evaluate a bank’s operating and financial performance. The final section provides examples of these ratios applied to a North American bank, TD Bank Group, and a set of Canadian and U.S. banks. Appendix A provides a glossary of terms. Appendix B provides definitions for all financial ratios.

**FROM NARROW TO DIVERSIFIED BANKING**

Following the 1930s’ Great Depression, banks in the United States and Canada were narrow, with their functions restricted by domestic regulations. During the 1980s and 1990s, deregulation led to the emergence of the large, diversified financial institutions that are common today, which coexist with a variety of smaller, retail and commercial banks, savings institutions, trust companies, and securities dealers.

**United States: From Glass–Steagall to Dodd–Frank[[1]](#footnote-1)**

In the United States, the passage of the 1933 *Glass–Steagall Act* (*Glass–Steagall*)—formally known as the *Banking Act of 1933*—prohibited commercial banks from underwriting and dealing in many classes of securities, such as equities and corporate bonds. *Glass–Steagall* also prohibited affiliations between chartered banks that held insured consumer deposits and securities firms that engaged in corporate advisory, merchant banking, underwriting, and trading. This Act effectively led to the creation of stand-alone investment banks that were distinct from retail and commercial banks, which held deposits insured by the newly created Federal Deposit Insurance Corporation.[[2]](#footnote-2) This separation was reinforced by the passage of the 1956 *Bank Holding Company Act*, which eliminated the possibility that holding companies owning banks could own or control insurance companies, real estate companies, securities firms, or any non-financial company. As a result, the U.S. financial system during this period featured numerous narrow financial institutions that operated in distinct businesses under national or state charters, including retail banks, community banks, savings banks, commercial banks, and money-centre banks. Federally charted banks were supervised by the Federal Reserve and the Comptroller of the Currency at the federal level, while state-chartered banks were supervised by state bank regulators. Meanwhile securities dealers and investment banks were supervised by the Securities and Exchange Commission.

The legal separation of banks and securities firms formally ended with the passage of the 1999 *Gramm–Leach–Bliley Act*—formally known as the *Financial Services Modernization Act of 1999*—although this separation had begun to break down beginning in the 1970s. The restrictions imposed by *Glass–Steagall* were effectively loosened over time to allow commercial banks to earn an increasing percentage of revenues from securities businesses through Section 20 subsidiaries held by a bank holding company.[[3]](#footnote-3) The final blow for *Glass–Steagall* was the 1998 merger of Citicorp and Travelers Group to form Citigroup, a fully diversified financial institution offering retail and commercial banking, investment banking, insurance, and asset management. Citigroup epitomized the trend toward U.S. bank holding companies becoming financial supermarkets offering a full range of products and services. When this merger was allowed to proceed, *Glass–Steagall* was unofficially dead. This diversified financial model was common in Europe and Asia, where it was known as universal banking or bancassurance.

The passage of the 2010 *Dodd–Frank Wall Street Reform and Consumer Protection Act* (*Dodd–Frank*) was an attempt to reintroduce restrictions on many bank activities. While the 2,300 pages of *Dodd–Frank* introduced many regulations and restrictions on banks, one of the best known is the prohibition against proprietary trading contained in Section 619 of *Dodd–Frank*, known as the Volcker Rule. This section also imposed restrictions on investment in hedge funds and private equity vehicles. Following the 2017 inauguration of President Donald Trump, *Dodd–Frank* and the Volcker Rule were likely to be modified or repealed although the details and timing remained uncertain.

**Canada: From Four Pillars to Globally Diversified Banks**

During the postwar period, Canada’s financial system was separated by regulation into four distinct pillars—chartered banks, trust companies, insurers, and securities dealers—each with distinct market functions, legislative control, and ownership. Chartered banks specialized in raising deposits, making loans, and providing other banking services. By 1987, this strict separation had been removed, leading to rapid consolidation across the pillars in the late 1980s and 1990s. For example, Toronto-Dominion Bank moved into investment banking and wealth management through the acquisition of two independent securities dealers: Waterhouse Investor Services in 1996 and Newcrest Capital in 2000.[[4]](#footnote-4) Toronto-Dominion Bank also acquired two trust companies: Central Guaranty Trust in 1992 and Canada Trust in 2000, which included the insurance business of Meloche Monnex. Toronto-Dominion Bank also expanded into the U.S. market by acquiring Maine-based Banknorth in 2005 and New Jersey-based Commerce Bancorp in 2007 to create TD Bank North America, its U.S. retail bank. Reflecting its North American footprint and diversified business model, Toronto-Dominion Bank was rebranded as TD Bank Group in 2009. These acquisitions transformed TD Bank from a narrow domestic chartered bank into a diversified global financial institution offering a range of services to retail and wholesale customers. Other Canadian banks followed a similar path of acquisition and diversification, expanding domestically and globally, with their names changing along the way to provide less prominence to their Canadian roots.

**EVALUATING BANK OPERATING AND FINANCIAL PERFORMANCE**

The traditional narrow banking model is relatively straightforward for investors to evaluate. A bank is founded with an initial equity investment, with the proceeds used to set up and staff the bank’s headquarters and branches. These branches accept deposits from retail and commercial customers, who open chequing or savings accounts. Banks may also borrow short-term funds from other banks through the interbank market or longer-term funds by issuing bonds to investors through the capital markets. These capital sources finance the asset side of a bank’s balance sheet, which consists primarily of loans, mortgages, and other forms of credit to households and businesses. For this reason, banks are described as financial intermediaries who match savers (depositors) with investors (borrowers).

Retail and commercial banks make a profit by charging a higher interest rate on loans to customers than they pay on deposits to savers. The main source of bank profits—the difference between the interest income earned on loans and the interest expense paid on deposits—is net interest income. Banks may also earn interest income from holdings of securities, such as bonds and dividend-paying equities. When net interest income is expressed as a ratio of the bank’s interest earning assets, it is called net interest margin (NIM) or the loan spread. The typical NIM for a North American bank varies from 1 per cent to 3 per cent.

Banks earn income from other sources that are not priced with reference to interest rates, called non-interest income. Many sources of non-interest income typically generate fees and commissions. Sources of non-interest income include banking fees and fiduciary activities, credit cards, underwriting and advisory mandates, originating and servicing mortgages, managing assets, and profits (and losses) from trading. When a bank is engaged in insurance, non-interest income includes income from insurance activities such as premiums and fees due to the sale of credit protection and stand-alone vanilla insurance products as well as automobile insurance. Insurance expense is reported separately.

A bank’s total revenue is the sum of net interest income and non-interest income. Total revenue is analogous to a non-financial corporation’s gross profit, as it deducts the cost of producing the good or service from the price paid by the consumer. Bank revenues do not consider expenses related to overhead or other fixed costs such as employee salaries and marketing. These expenses are called non-interest expenses. The key measure of a bank’s ability to manage its costs is the efficiency ratio, which is the ratio of non-interest expense to total revenues. An efficiency ratio of 50 per cent means that for every dollar of revenues, the bank is paying 50 cents of non-interest expenses. Efficiency ratios for banks typically range from 45 per cent to 60 per cent, with higher ratios for banks focused on capital markets or wealth management.

Investors often evaluate the profitability of banks using two ratios: return on assets (ROA) and return on equity (ROE). ROA is the ratio of net income to total assets. Given that bank balance sheets are large and the level of competition among banks is high, ROA ratios are low and typically below 2 per cent. Bank shareholders tend to focus on ROE, which is the ratio of net income available to common shareholders divided by common equity (at book value).[[5]](#footnote-5) ROE provides a measure of the return earned in a given year for every dollar of common equity invested in the bank. ROEs typically average from 8 per cent to 18 per cent, with the levels sensitive to the degree of financial leverage measured as the ratio of total asset to common equity. The relationship between ROE, ROA, and financial leverage can be illustrated using the following relationship:

This relationship shows that a bank can transform low ROA into high ROE using financial leverage. For example, when a bank with total assets of $100 is funded using $10 of common equity, then an ROA of 1 per cent equates to an ROE of 10 per cent: 1 per cent × (100 ÷ 10). One obvious way to increase ROA is to take greater risks on loans, which may lead to higher profitability in the short run but larger losses in the long run. Investors, therefore, monitor the degree of risk-taking carefully.

While banks face many risks, two primary ones monitored by investors are credit risk and liquidity risk.

Credit risk is the risk that a borrower defaults on a loan and cannot repay the bank. Banks understand that some loans and credit will not be repaid despite efforts to screen and monitor customers. These *expected* losses are included in the pricing of the original loan and recorded on the balance sheet as allowance for credit losses (ACLs). The amount of net loans shown under assets is equal to gross loans minus ACLs. When a bank faces *unexpected* losses from an impaired loan, it recognizes this loss by taking a charge against current earnings called provision for credit losses (PCLs). PCLs are an expense that appears on the bank’s income statement, reducing taxable income. Investors can judge the quality of a bank’s loan portfolio using the ratio of PCLs/net average loans or the ratio of ACLs/gross average loans.

Liquidity risk is the risk of a bank not having sufficient cash available to meet cash payments. These cash payments may be due to unexpected withdrawals by depositors concerned about the financial viability of a bank (i.e., a bank run) or due to maturing bonds that need to be repaid. A bank typically holds less than 5 per cent of its total assets in cash, given this asset does not generate any income. But deposits may account for 40 per cent to 80 per cent of a bank’s total balance sheet. Clearly, a bank cannot repay all these depositors in a short time, as the funds have been invested in other non-liquid assets such as loans and mortgages.

The second approach to increase bank profitability is to increase financial leverage. Higher leverage, however, increases the risk of default. Given the history of bank failures and the cost of banking crises for the economy, bank supervisors globally have introduced minimum capital requirements and other measures to limit leverage to acceptable levels. The current version of global regulations, known as Basel III, focuses on three minimum capital requirements: a common equity tier 1 (CET1) capital ratio of 7 per cent, a tier 1 capital ratio of 8.5 per cent, and a total capital ratio of 10.5 per cent.[[6]](#footnote-6)

**COMPARING NORTH AMERICAN BANKS**

Financial ratios take on meaning when looking at (1) variation over time for a given bank and (2) variation across banks at a given point in time.[[7]](#footnote-7) These two dimensions can be illustrated by examining the consolidated financial statements and the financial ratios for a single bank, TD Bank Group (TD). The financial ratios can then be compared across three groups of banks: six Canadian banks, four large and diversified U.S. banks (Bank of America, Citigroup, JPMorgan, and Wells Fargo), and 11 smaller U.S. regional banks.

Exhibit 1 shows TD’s consolidated balance sheet and income statement at the end of fiscal year 2016. Despite having a large U.S. presence, TD reports its accounts in Canadian dollars according to International Financial Reporting Standards. The first column in Exhibit 1 shows the financial statement categories, the second column shows the totals in millions of Canadian dollars, and the third column shows the common-sized ratios. The use of common-sized financial statements facilitates a comparison across banks of different sizes and over time. By convention, balance sheet items are shown as a percentage of total assets, while income statement items are shown as a percentage of net revenues.

Exhibit 1 illustrates that around 50 per cent of TD’s assets consist of loans and mortgages, with 16.3 per cent in long-term investments and 8.4 per cent in short-term trading securities. TD held close to $4 billion in cash, but this cash represented only 0.3 per cent of total assets. Similarly, premises and equipment—consisting of all branches, buildings, computers and other fixed assets—represent only 0.5 per cent of total assets. TD is carrying a large amount of goodwill and intangible assets representing 20 per cent of total assets, no doubt due to the number of acquisitions made over the years. These assets are funded largely by deposits, which represent 72.5 per cent of total assets. Other forms of short-term borrowing plus notes and debentures represent 7.5 per cent of total assets. Common equity represents 5.8 per cent of total assets, with preferred shares and non-controlling interests increasing shareholders’ equity to 6.3 per cent of total assets.

Turning to the income statement, TD earned 58.1 per cent of total revenues from net interest income and the remaining 41.9 per cent from non-interest income. Non-interest expenses represented 55 per cent of total revenues, which is the efficiency ratio. Provisions for credit losses in 2016 were 6.8 per cent of total revenues with insurance claims and related expenses representing another 7.2 per cent. Net income adjusted for items of note was 27.1 per cent of net revenues—a healthy profit margin.

Exhibit 2 summarizes TD’s operating and leverage ratios over the five years from 2012 to 2016. TD’s NIM declined over this period to 2.01 per cent in 2016. TD’s adjusted efficiency ratio remained stable between 53 and 54 per cent, but ROE had declined steadily from 16.5 per cent in 2012 to 13.9 per cent in 2016. PCLs as a percentage of net average loans were low at 0.41 per cent of net average loans. TD exhibited an intermediate amount of financial leverage, with common equity-to-total assets of 5.8 per cent. All TD’s Basel III capital ratios (expressed on a fully phased-in basis) were above regulatory minimums at year-end 2016. In terms of valuation metrics, TD consistently paid out more than 44 per cent of earnings as dividends. Total shareholder return (TSR) for 2016 was an impressive 17.9 per cent. TD’s stock traded at a price-to-earnings multiple of 12.5 times and a price-to-book multiple of 1.7 times at the end of fiscal year 2016.

Exhibit 3 compares the operating performance and leverage of the six Canadian banks, four large and diversified U.S. banks (Bank of America, Citigroup, JPMorgan, and Wells Fargo), and 11 U.S. regional banks. The data for the six Canadian banks are for the fiscal year ending October 2016, while the U.S. bank data are for the 12 months ending September 2016. The bottom of the table provides the averages for the three categories of banks. The loans-to-assets ratio provides an indication of the degree of diversification of each bank’s business, with narrow banks featuring higher ratios. TD’s ratio of loans to assets was 50 per cent, similar to the other Canadian banks, higher than the U.S. diversified banks, and lower than the U.S. regional banks. Around 69 per cent of TD’s loans were funded by deposits, lower than the Canadian banks, U.S. diversified banks, and U.S. regional banks. TD featured high asset growth of 6.6 per cent in the most recent fiscal year, lower than its Canadian peers but similar to U.S. regional banks. TD’s NIM was above the average for the Canadian banks but below the U.S. banks, consistent with its presence in both markets. While TD’s ROA was similar to other Canadian banks, TD’s ROE was lower due to lower financial leverage (i.e., assets-to-common equity). TD’s ROE and financial leverage were significantly higher than its peer U.S. banks. TD’s provisions for loan losses were in line with the peer average of Canadian banks, lower than the average of U.S. diversified banks and higher than U.S. regional banks. Finally, TD’s CET1 ratio was similar to its peers at 10.4 per cent.

Exhibit 4 provides an indication of how financial markets valued these North American peers. TD delivered attractive returns to its shareholders over the past three-year horizon, outperforming the TSR of its Canadian and U.S. peers. Viewed from a five-year horizon, TD had underperformed the U.S. banks, which had bounced back strongly in 2010–11. TD paid out a lower share of earnings as dividends than the other Canadian banks but significantly more than the U.S. banks. TD’s stock was valued at a higher multiple of earnings than other Canadian banks but less than the U.S. regional and diversified banks. TD’s price-to-book ratio, however, was similar to other Canadian banks and much higher than that of the U.S. banks. Finally, TD’s credit rating was the highest of its North American peers at Aa1/AA–.

**Exhibit 1: 2016 Consolidated FINANCIAL STATEMENTS OF TD BANK GROUP**

|  |  |  |
| --- | --- | --- |
| **Balance Sheet** | **CA$ Millions** | **% of Assets** |
| Cash | 3,907 | 0.3 |
| Interbank assets | 53,714 | 4.6 |
| Trading loans, securities, and other | 99,257 | 8.4 |
| Gross loans and mortgages | 589,529 | 50.1 |
| Less: reserves for credit losses | –3,873 | –0.3 |
| Net loans and mortgages | 585,656 | 49.8 |
| Investments: available for sale and held to maturity | 191,966 | 16.3 |
| Premises and equipment | 5,482 | 0.5 |
| Other assets (including goodwill) | 236,985 | 20.1 |
| Total Assets | 1,176,967 | 100.0 |
|  |  |  |
| Deposits | 853,446 | 72.5 |
| Short-term borrowing | 78,105 | 6.6 |
| Subordinated notes and debentures | 10,891 | 0.9 |
| Other liabilities | 160,311 | 13.6 |
| Total Liabilities | 1,102,753 | 93.7 |
| Preferred shares | 4,400 | 0.4 |
| Non-controlling interests in subsidiaries | 1,650 | 0.1 |
| Common equity | 68,164 | 5.8 |
| Total shareholders’ equity | 74,214 | 6.3 |
| Total Liabilities + Equity | 1,176,967 | 100.0 |
| *Average Interest Earning Assets* | *990,983* | *84.2* |
|  |  |  |
| **Income Statement** | **CA$ Millions** | **% of Revenues** |
| Interest income | 26,560 | 77.4 |
| Less: Interest expense | 6,637 | 19.3 |
| Net Interest Income (NII) | 19,923 | 58.1 |
| Plus: Non-interest income | 14,392 | 41.9 |
| Net Revenues | 34,315 | 100.0 |
| Less: Non-interest expense | 18,877 | 55.0 |
| Less: Provision for credit losses (PCLs) | 2,330 | 6.8 |
| Less: Insurance claims and related expenses | 2,462 | 7.2 |
| Pretax Income | 10,646 | 31.0 |
| Less: Provision for income taxes | 2,143 | 6.2 |
| Plus: Equity in net income of TD Ameritrade | 433 | 1.3 |
| Net Income (Reported) | 8,936 | 26.0 |
| Plus: Adjustments for items of note, net of income taxes | 356 | 1.0 |
| Net Income (Adjusted) | 9,292 | 27.1 |
| Less: Preferred dividends | 141 | 0.4 |
| Less: Net income to non-controlling interests | 115 | 0.3 |
| Net income available to common shareholders (adjusted) | 9,036 | 26.3 |

Source: TD Bank Group 2016 Annual Report, author’s calculations.

**Exhibit 2: KEY FINANCIAL METRICS FOR CANADA’S TD BANK GROUP, 2012–2016**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **2016** | **2015** | **2014** | **2013** | **2012** | **Average** |
| **OPERATING PERFORMANCE:** |  |  |  |  |  |  |
| Net interest margin (NIM) (%) | 2.01 | 2.05 | 2.18 | 2.20 | 2.23 | 2.13 |
| Efficiency ratio (%)—adjusted | 53.9 | 54.3 | 53.4 | 52.9 | 51.3 | 53.2 |
| Return on common equity (ROE) (%) | 13.9 | 14.7 | 15.9 | 15.3 | 16.5 | 15.3 |
| PCLs/ Net loans (%) | 0.41 | 0.34 | 0.34 | 0.38 | 0.43 | 0.38 |
|  |  |  |  |  |  |  |
| **LEVERAGE/CAPITALIZATION:** |  |  |  |  |  |  |
| Common equity/total assets (%) | 5.8 | 5.7 | 5.6 | 5.4 | 5.3 | 5.6 |
| Common equity tier 1 ratio (%) | 10.4 | 9.9 | 9.4 | 9.0 | n.a. | 9.7 |
| Tier 1 ratio (%), all-in basis | 12.2 | 11.3 | 10.9 | 11.0 | 12.6 | 11.6 |
| Total capital ratio (%), all-in basis | 15.2 | 14.0 | 13.4 | 14.2 | 15.7 | 14.5 |
|  |  |  |  |  |  |  |
| **FINANCIAL PERFORMANCE:** |  |  |  |  |  |  |
| Closing market price, FYE October 31 | $60.86 | $53.68 | $55.47 | $47.82 | $40.62 |  |
| Earnings per share (basic) | $4.88 | $4.62 | $4.28 | $3.72 | $3.73 |  |
| Dividends per share | $2.16 | $2.00 | $1.84 | $1.62 | $1.45 |  |
| Dividend payout ratio (%) | 44.3 | 43.3 | 43.0 | 43.5 | 38.7 | 42.6 |
| Total shareholder return (TSR) (%) | 17.9 | 0.4 | 20.1 | 22.3 | 11.9 | 14.5 |
| Price-earnings ratio (x) | 12.5 | 11.7 | 13.0 | 12.9 | 11.0 | 12.2 |
| Book value per share | $36.71 | $33.81 | $28.45 | $25.33 | $23.60 |  |
| Price-book ratio (x) | 1.7 | 1.6 | 2.0 | 1.9 | 1.7 | 1.8 |
|  |  |  |  |  |  |  |

Note: PCLs = provision for credit losses; FYE = Fiscal year ending

Source: TD Bank Group Annual Report, various years.

EXHIBIT 3: OPERATING PERFORMANCE AND LEVERAGE FOR NORTH AMERICAN BANKS

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bank | Loans/ Assets | Loans/ Deposits | Asset Growth Y-o-Y | Net Interest Margin | ROA | ROE | Assets/ Equity | PCLs/ Loans | CET1 Ratio | Fiscal Year Ending |
| **CANADIAN BANKS:** |  |  |  |  |  |  |  |  |  |  |
| BMO | 52 | 76 | 7.2 | 1.77 | 0.70 | 12.0 | 17.9 | 0.2 | 10.1 | 10/31/2016 |
| CIBC | 62 | 78 | 8.2 | 2.09 | 0.89 | 19.8 | 22.3 | 0.4 | 11.3 | 10/31/2016 |
| National Bank | 52 | 86 | 7.5 | 1.56 | 0.53 | 11.6 | 24.1 | 0.4 | 10.1 | 10/31/2016 |
| RBC | 44 | 69 | 9.9 | 1.77 | 0.92 | 16.6 | 18.4 | 0.3 | 10.8 | 10/31/2016 |
| Scotiabank | 54 | 79 | 4.6 | 1.71 | 0.81 | 13.7 | 17.0 | 0.5 | 11.0 | 10/31/2016 |
| TD Bank | 50 | 69 | 6.6 | 2.01 | 0.79 | 13.9 | 17.3 | 0.4 | 10.4 | 10/31/2016 |
| **US BANKS:** |  |  |  |  |  |  |  |  |  |  |
| Bank of America | 42 | 76 | 1.9 | 2.28 | 0.70 | 5.7 | 9.2 | 0.4 | 10.2 | 9/30/2016 |
| Citigroup Inc. | 37 | 71 | (6.0) | 2.86 | 0.81 | 6.4 | 8.4 | 1.1 | 14.6 | 9/30/2016 |
| JPMorgan | 36 | 65 | (8.6) | 2.17 | 0.95 | 9.5 | 10.6 | 0.5 | 11.8 | 9/30/2016 |
| Wells Fargo | 52 | 77 | 6.0 | 2.90 | 1.20 | 11.9 | 10.5 | 0.3 | 11.4 | 9/30/2016 |
| BB&T Corp. | 65 | 92 | 12.4 | 3.41 | 1.08 | 8.4 | 8.5 | 0.3 | 10.0 | 9/30/2016 |
| Fifth Third Bank | 66 | 91 | 1.7 | 2.86 | 1.29 | 11.7 | 9.7 | 0.4 | 9.8 | 9/30/2016 |
| Huntington Bank | 72 | 92 | 7.2 | 2.78 | 0.76 | 7.7 | 11.5 | 0.2 | 9.8 | 9/30/2016 |
| KeyCorp | 64 | 85 | 1.4 | 2.55 | 0.68 | 6.0 | 8.9 | 0.3 | 11.0 | 9/30/2016 |
| M&T Bank | 71 | 95 | 27.0 | 3.36 | 1.12 | 8.5 | 8.2 | 0.2 | 11.1 | 9/30/2016 |
| People’s United | 73 | 100 | 8.0 | 2.81 | 0.71 | 5.7 | 8.2 | 0.1 | 6.5 | 9/30/2016 |
| PNC Financial | 58 | 84 | 3.9 | 2.70 | 1.06 | 8.6 | 8.7 | 0.1 | 10.6 | 9/30/2016 |
| Regions Financial | 65 | 83 | 5.4 | 3.17 | 0.92 | 6.7 | 8.0 | 0.3 | 10.9 | 9/30/2016 |
| SunTrust Bank | 72 | 92 | 0.3 | 3.00 | 0.97 | 8.0 | 8.6 | 0.1 | 10.0 | 9/30/2016 |
| US Bancorp | 63 | 88 | 4.8 | 3.10 | 1.35 | 13.6 | 10.4 | 0.4 | 9.6 | 9/30/2016 |
| Zions Bancorp | 68 | 81 | 4.3 | 3.27 | 0.73 | 5.5 | 8.9 | 0.1 | 12.2 | 9/30/2016 |
|  |  |  |  |  |  |  |  |  |  |  |
| Average Canadian banks | 52 | 76 | 7.3 | 1.82 | 0.77 | 14.6 | 19.5 | 0.4 | 10.6 |  |
| Average U.S. diversified banks | 42 | 72 | (1.7) | 2.55 | 0.92 | 8.4 | 9.7 | 0.6 | 12.0 |  |
| Average U.S. regional banks | 67 | 89 | 6.9 | 3.00 | 0.97 | 8.2 | 9.1 | 0.2 | 10.1 |  |

Note: Data is from fiscal year 2016 for Canadian banks but 3Q 2015 for U.S. banks; Y-o-Y = year-over-year; ROA = return on assets; ROE = return on equity; PCLs = provision for credit losses; CET1 = common equity tier 1

Source: Created by author using Bloomberg data accessed December 9, 2016.

EXHIBIT 4: FINANCIAL PERFORMANCE FOR NORTH AMERICAN BANKS, December 9, 2016

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bank | Currency | Share price $ | Market cap. (CA$ ) | 3-yr TSR (%) | 5-yr TSR (%) | Dividend Payout (%) | P/E ratio (x) | Price/ Book (x) | Moody’s Rating | S&P Rating |
| **CANADIAN BANKS:** |  |  |  |  |  |  |  |  |  |  |
| BMO | CAD | 95.02 | 61,360 | 15.1 | 15.8 | 49.0 | 12.9 | 1.6 | Aa3 | A+ |
| CIBC | CAD | 111.69 | 44,347 | 12.1 | 14.3 | 44.3 | 11.3 | 2.0 | Aa3 | A+ |
| National Bank | CAD | 54.40 | 18,388 | 11.5 | 14.7 | 65.9 | 12.6 | 1.9 | Aa3 | A |
| RBC | CAD | 89.43 | 132,839 | 13.4 | 17.2 | 47.6 | 13.4 | 2.1 | Aa3 | AA– |
| Scotiabank | CAD | 76.17 | 92,017 | 10.5 | 13.9 | 49.6 | 12.7 | 1.7 | Aa3 | A+ |
| TD Bank | CAD | 65.17 | 121,059 | 15.1 | 16.4 | 44.3 | 13.8 | 1.8 | Aa1 | AA– |
| **US BANKS:** |  |  |  |  |  |  |  |  |  |  |
| Bank of America | USD | 22.95 | 320,895 | 15.1 | 33.1 | 14.5 | 16.6 | 0.9 | Baa1 | BBB+ |
| Citigroup Inc. | USD | 60.15 | 237,182 | 5.8 | 16.2 | 3.0 | 11.9 | 0.8 | Baa1 | BBB+ |
| JPMorgan | USD | 85.12 | 421,450 | 18.1 | 24.1 | 28.9 | 15.8 | 1.3 | A3 | A– |
| Wells Fargo | USD | 57.29 | 398,129 | 12.2 | 19.6 | 35.3 | 14.1 | 1.6 | A2 | A |
| BB&T Corp. | USD | 46.98 | 52,748 | 13.5 | 17.9 | 40.8 | 16.5 | 1.4 | A2 | A– |
| Fifth Third Ban | USD | 26.98 | 28,209 | 12.7 | 19.6 | 25.7 | 16.7 | 1.3 | Baa1 | BBB+ |
| Huntington Banc | USD | 13.46 | 20,204 | 16.0 | 23.6 | 30.3 | 15.8 | 1.6 | Baa1 | BBB |
| KeyCorp | USD | 18.37 | 27,470 | 14.8 | 22.6 | 27.4 | 16.5 | 1.3 | Baa1 | BBB+ |
| M&T Bank | USD | 153.50 | 32,932 | 12.9 | 19.0 | 38.0 | 19.2 | 1.6 | A3 | A– |
| People’s United | USD | 20.00 | 8,617 | 15.4 | 15.1 | 77.0 | 22.1 | 1.3 | Baa2 | BBB+ |
| PNC Financial | USD | 114.82 | 77,294 | 17.3 | 18.3 | 26.9 | 16.3 | 1.3 | A3 | A– |
| Regions Financial | USD | 14.55 | 24,783 | 17.1 | 30.9 | 30.1 | 16.9 | 1.1 | Baa2 | BBB |
| SunTrust Bank | USD | 54.79 | 37,209 | 18.0 | 28.1 | 25.5 | 15.8 | 1.2 | Baa1 | BBB+ |
| US Bancorp | USD | 51.90 | 122,061 | 12.0 | 17.3 | 31.8 | 16.1 | 2.1 | A1 | A+ |
| Zions Bancorp | USD | 43.09 | 12,146 | 14.0 | 23.4 | 18.3 | 23.3 | 1.3 | Baa3 | BBB– |
|  |  |  |  |  |  |  |  |  |  |  |
| Average Canadian banks | |  | 78,335 | 13.0 | 15.4 | 50.4 | 12.8 | 1.8 |  |  |
| Average US diversified banks | |  | 344,414 | 12.8 | 23.3 | 20.4 | 14.6 | 1.2 |  |  |
| Average US regional banks | |  | 40,334 | 14.9 | 21.4 | 33.8 | 17.7 | 1.4 |  |  |

Note: CA$1.3837 = US$1; Market cap. (capital) in millions of dollars; TSR = total shareholder return; P/E = price/earnings; S&P = Standard & Poor’s

Source: Created by author using Bloomberg data.

APPENDIX A: Glossary of Terms

**Allowance for credit losses:** The amount deemed adequate by management to absorb identified credit losses as well as losses that have been incurred but are not yet identifiable. The allowance is increased by the provision for credit losses and decreased by the amount of write-offs and net of recoveries, in the period.

**Book value per share:**The book value of the common equity on the balance sheet (common shares, retained earnings, and accumulated other comprehensive income or loss). Book value per share is book value divided by the number of common shares outstanding.

**Common equity tier 1 (CET1) capital:**A primary Basel III capital measure comprising mainly common equity, retained earnings, and qualifying non-controlling interest in subsidiaries. Regulatory deductions made to arrive at the CET1 capital include goodwill and intangibles, unconsolidated investments in banking, financial and insurance entities, deferred tax assets, defined benefit pension fund assets, and shortfalls in allowances. CET1 capital ratio represents the predominant measure of capital adequacy under Basel III and equals CET1 capital divided by risk-weighted assets.

**Earnings per share (EPS):** Calculated as net income less preferred share dividends divided by the average number of common shares outstanding. For diluted EPS, the number of common shares outstanding is adjusted for the dilutive effects of stock options and other convertible securities.

***Interest earning assets*:** Any assets that pay a rate of interest, including loans, mortgages, money market securities, interbank loans, and securities.

**Market capitalization:** The market value of outstanding common shares; common shares outstanding times the market price per share. Market value per share is simply the share price.

**Net interest income (NII):** The difference between what is earned on assets such as loans and securities and what is paid on liabilities such as deposits and subordinated debentures.

**Non-controlling interest (formerly minority interest):**the portion of a subsidiary corporation’s stock not owned by the parent corporation. Non-controlling interest reflects the claim on assets belonging to other, non-controlling shareholders.

**Provision for credit losses (PCLs):** The amount charged to income necessary to bring the allowance for credit losses to a level determined appropriate by management. PCLs recognize estimated losses on impaired loans, as well as losses that have been incurred but are not yet identified in the loans portfolio.

**Return on common equity (ROE):**Based on net income available to common shareholders divided by total average common equity for the period.

**Risk-weighted assets (RWA):** Assets calculated by applying a regulatory risk-weight factor to on- and off-balance sheet exposures. The risk-weight factors are established by the Office of the Superintendent of Financial Institutions (OSFI) to convert on- and off-balance sheet exposures to a comparable risk level.

**Shareholders’ equity (also called stockholders’ equity):** Common equity (common shares, treasury shares, retained earnings, and other components of equity) plus preferred shares.

**Tier 1 capital:** Comprises predominantly CET1, with additional tier 1 items such as preferred shares and non-controlling interests in subsidiaries tier 1 instruments.

**Total shareholder return (TSR):** The change in the market price of the common share over some time- horizon plus dividends paid during this horizon.

APPENDIX B: Definitions for Financial Ratios

Return on common equity (ROE) = (Net income − preferred share dividends) ÷ average common equity

Return on assets (ROA) = Net income ÷ average total assets

Dividend payout = Dividends paid to common shareholders ÷ (net income less preferred share dividends)

Net interest margin (NIM) = Net interest income ÷ average interest earning assets

Revenues = Net interest income + non-interest income

Efficiency ratio = Non-interest expense ÷ (net interest income + non-interest income)

Provision for credit losses (PCLs) ÷ net loans = Provision for credit losses ÷ net loans

Price ÷ Book = Market price per share ÷ book value per share

Loans ÷ Assets = Net loans ÷ total assets

Asset Growth = (Total assets current fiscal year ÷ total assets previous fiscal year) − 1

Earnings per share (EPS) growth = (EPS current fiscal year ÷ EPS previous fiscal year) − 1

1. Material in this section on U.S. banking is drawn from David H. Carpenter and M. Maureen Murphy, “The ‘Volcker Rule’: Proposals to Limit ‘Speculative’ Proprietary Trading by Banks,” Congressional Research Service, R41298, June 22, 2010, https://fas.org/sgp/crs/misc/R41298.pdf; Anthony Saunders and Marcia Millon Cornett, Financial Institutions Management, 5th ed. (New York: McGraw-Hill Irwin, 2006); Company websites. [↑](#footnote-ref-1)
2. In one famous example, J.P. Morgan & Co. spun off its securities operations in 1935, under the leadership of Henry S. Morgan and Harold Stanley, to form the investment bank Morgan Stanley. [↑](#footnote-ref-2)
3. Section 20 of the Glass–Steagall Act allowed commercial banks to own subsidiaries engaged in securities businesses as long as the revenues from restricted activities did not exceed some threshold of total revenues. [↑](#footnote-ref-3)
4. Investment banking (or capital markets) is a generic term encompassing advisory businesses such as mergers and acquisitions and trading-based businesses such as securities sales, market making, and underwriting. [↑](#footnote-ref-4)
5. For non-financial companies, investors typically define ROE as net Income divided by shareholders’ equity, where shareholders’ equity = common equity + preferred shares + non-controlling interest. [↑](#footnote-ref-5)
6. Basel III capital ratios include a capital conservation buffer of 2.5 per cent that bank supervisors can vary over time but do not include the capital surcharge for systemically important banks (SIBs). Currently, TD Bank is designated as a domestic SIB and faces a 1 per cent capital surcharge. [↑](#footnote-ref-6)
7. An important third dimension is how a bank’s ratios relate to the bank’s business and financial strategy, but we do not discuss this dimension in this note. [↑](#footnote-ref-7)