November 2, 2015

QUIC RESEARCH REPORT

Financial Institutions Group

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An Introduction to North American Banks

A Stalwart Subsector Within the Financials Space

An Overview of the North American Banking Space

Banks represent a the largest subsector within the financial institutions space. Given the subsector's central role in the most recent financial crisis, North American banks have been closely followed in recent years by both regulators and investors. Exposure to interest rates has made the subsector particularly interesting – and volatile – over the past few months as the Fed has digressed on the timing and pace of interest rate increases. Banks account for approximately 56% of QUIC's synthetic market cap-weighted S&P 100 Financials Index in the U.S., and approximately 67% of the S&P/TSX Capped Financials Index in Canada.

North American banks can be separated into following three types:

1. Retail and Commercial Banks
2. Investment Banks
3. Custodial Banks

Return on capital metrics are a major differentiating factor for North American banks. This is seen through materially different book value and earnings multiples attributed to firms in the market. Banks with comparably high return metrics enjoy book value and earnings multiples far above their peer groups. An example is Wells Fargo, whose ~12.9% ROCE has driven its book value and earnings multiples far above its large U.S. bank peers.

QUIC Research Reports focus on emerging investment themes that affect current portfolio companies and companies under coverage.

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Retail and Commercial Banks

Overview

Banking at it core means accepting deposits from both retail and commercial sources for the purpose of underwriting loans or making investments.

Retail banks provide basic banking services to individuals. Retail banks include savings banks, savings and loan associations, and recurring and fixed deposits. Products include, checking and savings accounts, certificates of deposit (CDs), and mortgage, personal, and car loans.

Commercial banks provide financial services to businesses. Products include credit and debit cards, bank accounts, deposits and loans, and secured and unsecured loans. Commercial banks also provide a number of services that compete with investment banks including money market operations, debt underwriting, and financial advisory. Commercial banks can be either public sector or private sector institutions.

Revenue and Income Drivers

The first driver of revenue and income are interest rates. Retail and commercial banks generate revenue and income by raising funds with low-cost deposits and using those funds to underwrite loans. The difference between what a bank pays to depositors and what it earns from its loans is called the Net Interest Margin (NIM); a larger NIM leads to higher earning power on underwritten loans.

Market conditions are another driver, particularly for commercial banks. Fee-based services such as advisory, debt underwriting, and money market operations are boosted during positive conditions.

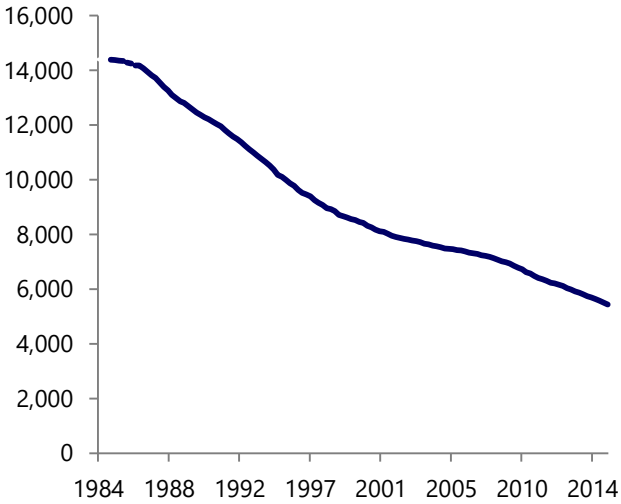
Major Players

The largest U.S. players include Wells Fargo, J.P. Morgan, Bank of America and Citigroup. The largest Canadian players include RBC, Toronto Dominion, Bank of Montreal, Bank of Nova Scotia, and CIBC.

EXHIBIT 1

Commercial Bank Count in U.S.

Steady Decline Over Past 30 years

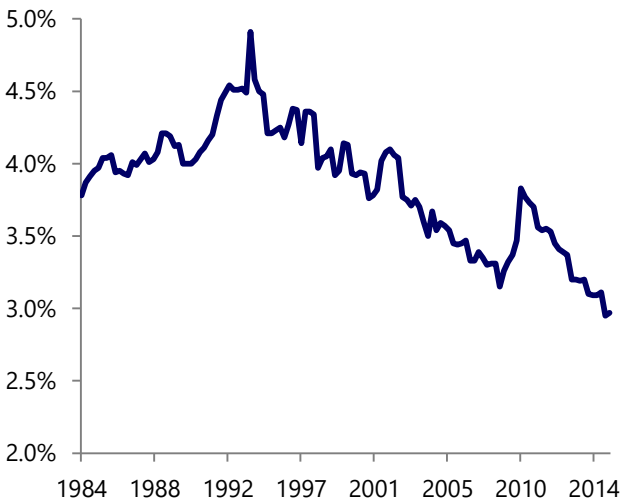


Source: Federal Reserve

EXHIBIT 2

Net Interest Margin for U.S. Banks

Net Interest Margins Have Significantly Declined



Source: Federal Reserve

Investment Banks

Overview

An investment bank is a financial institution that provides a number of services for individuals, corporations and governments. Investment banks raise capital for clients by underwriting and/or acting as an agent in the issuance of new securities. Investment banks advise companies involved in mergers and acquisitions, both on the buy and sell-side. They also provide ancillary services such as market making, and trading of derivatives, equity securities, fixed income instruments, foreign exchange, and commodities.

Investment banks also act as a financial advisor for a wide range of transactions. These activities include management of public assets, financial consulting services, and restructuring services. Many firms used operate proprietary trading desks, where a firm risks its own capital to invest, but have since been prohibited due to the Volcker Rule.

Revenue and Income Drivers

The primary revenue and income driver for investment banks is market condition. Favorable market conditions lead to much higher volume of capital raising and mergers and acquisition transaction activity.

Market volatility is another important driver, particularly for trading operations, as it leads to higher level of activity in derivative, equity, fixed income, foreign exchange, and commodity trading.

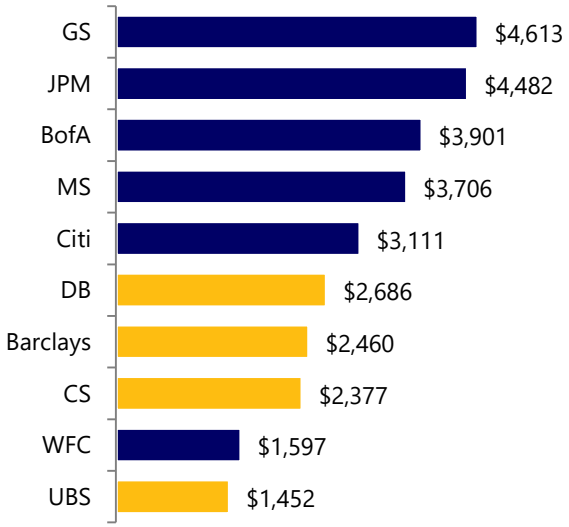
Major Players

Major U.S. players include Goldman Sachs, Morgan Stanley, J.P. Morgan, Bank of America Merrill Lynch, and Citi. Major Canadian players include RBC Capital Markets, National Bank Financial, CIBC, TD Securities, and BMO Capital Markets. Major European players include Deutsche Bank, Barclays, Credit Suisse, and UBS.

EXHIBIT 3

Investment Banking League Table ($M)

Increasing Market Share for American Banks

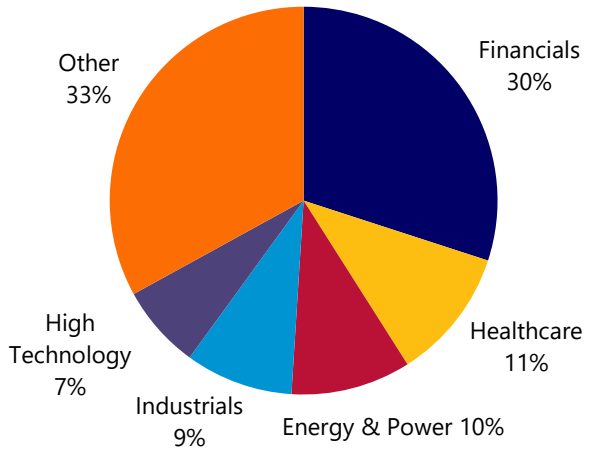


Source: Thomson Reuters

EXHIBIT 4

Industry Fee Market Share by Industry

Healthcare and Financials Fees Have Dominated



Source: Thomson Reuters

Custodial Banks

Overview

A custodial bank, also known as a trust bank, is a financial institution that specializes in protecting an individual's or firm's financial assets. Custodial banks act as a custodian of non-discretionary trust assets for customers; they earn a fee for this service.

Custodial banks also offer services in which they perform most or all of the middle-office and back-office work relating to holding the assets including paying taxes, accounting for dividends and interest payments, and filing regulatory forms. Typical clients include financial firms, sovereign wealth funds, and mutual funds. These assets are known as assets under administration; all investment decisions are made by the client.

Custodial banks often operate investment funds; a fee-based service driven by assets under management (AUM) and performance. AUM are funds where managers make investment decisions.

Revenue and Income Drivers

The first important driver of revenue and income is growth in assets under custody. An increase in custodial assets typically leads to higher servicing and administration fees. Assets under management is also a driver, as management and performance fees are generated based on total AUM.

Interest rates are also a critical revenue and income driver. Custodial banks earn net interest revenue on their interest-bearing assets (loans); similarly to commercial and retail banks, custodial banks earn the spread between interest paid on deposits and interest earned on underwritten loans. This spread is known as the net-interest margin.

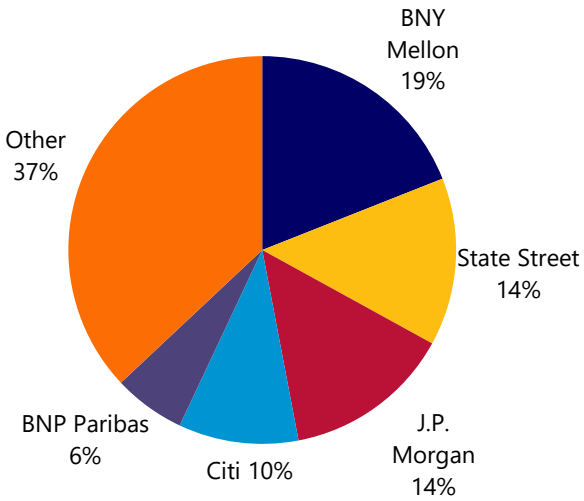
Major Players

Major players in the U.S. include the Bank of New York Mellon, State Street Bank and Trust Company, J.P. Morgan, Citigroup, and BNP Paribas.

EXHIBIT 5

Assets Under Custody

$150 Trillion Global Market

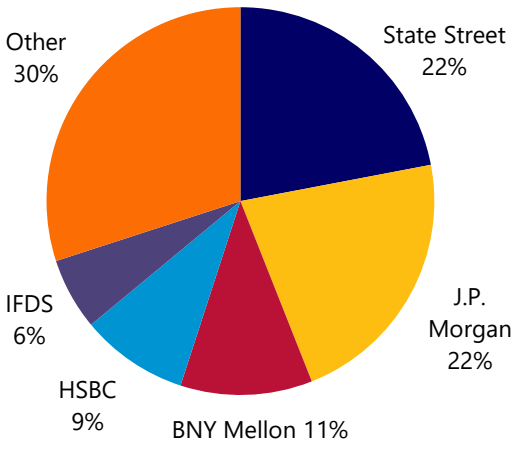


Source: Company Filings and Marcato Research

EXHIBIT 6

Assets Under Administration

$30 Trillion Global Market



Source: Company Filings and Marcato Research

Deposit Gathering and Loan Underwriting

Deposits

Banks collect deposits, make loans, and profit on the spread between them. In order for a bank to continually make loans, they must first grow its deposit base. In order to do this, banks use various methods, such as promotional interest rates, cash or item prizes, and discounted account fees.

Deposits can be segmented in three distinct ways – transactions versus non-transaction, interest-bearing versus non-interest-bearing, and core versus non-core. Transaction accounts permit the account holder to withdraw or transfer payments – these accounts are as chequing accounts. Non-transaction accounts have more restrictions in terms of transferring payments; the most common types include savings and GICs. Generally speaking, banks incur higher processing expenses, but lower interest expenses with transaction accounts. Core accounts normally refer to deposits made in a bank's natural demographic market and are primarily composed to transaction accounts.

Over the past 25 years, banks have sought to grow assets faster than deposits and as a result, have become reliant on borrowings to fund their assets. Since there are also more investment opportunities for households, less people have deposited their capital in banks, as illustrated in the graph below.

Loans

Since loans and leases provide the bulk of a bank's revenue via interest revenue, it is by far the largest asset class on a bank's balance sheet. Over the past 50 years, banks have shifted their asset mix toward loans and away from low-risk securities in order to grow earnings and shareholder returns.

Loans can be segmented by maturity, industry, security, and type of borrower, but are typically classified as real estate loans (residential), loans to individuals (credit card), commercial and industrial loans (capital expenditure), and other loans (interbank). Historically speaking, loans to individuals are the most likely to default, followed by real estate loans, commercial and industrial loans, and finally all other loans. As a result, banks require higher yields on riskier loans, such as credit card loans.

Although most banks are somewhat diversified in their loan portfolios, most either have technical expertise in underwriting certain loan types or are geographically situated and therefore predisposed to certain loan types. For example, Bank of America continues to be the country's leader in commercial lending – J.P. Morgan and Wells Fargo round out the top three commercial lenders.

EXHIBIT 6

U.S. Commercial Banks: Deposits to Total Assets

Deposits Increasing Since 2008 Financial Crisis

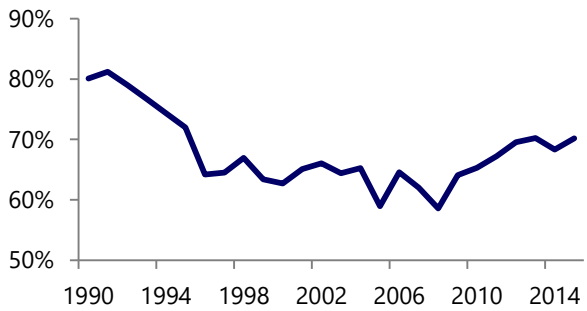
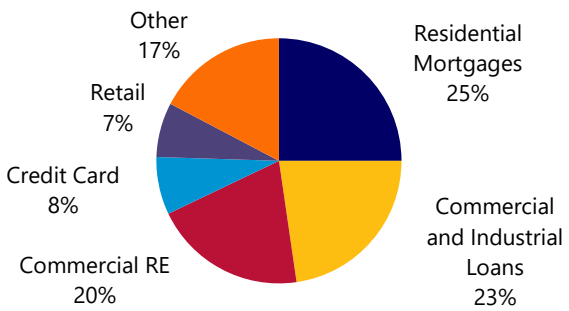


EXHIBIT 7

U.S. Commercial Banks: Loans by Type

Real Estate Loans Dominate Market



Non-Interest Income

Although banks receive a large portion of their revenue from interest income, a business mix including products and services that are not interest rate sensitive helps diversify away some risk for the world's largest lenders.

Wealth Management

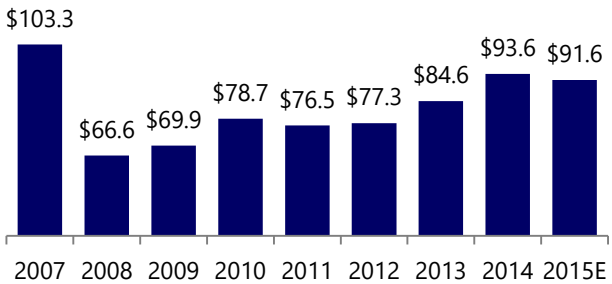
Wealth management is the process of advising and consulting high net worth individuals on all aspects of their financial situation by offering services and products that are best suited for them. Since revenue is mainly derived from management and performance fees, wealth management divisions are protected from a change in interest rate. Many banks, such as Morgan Stanley, are now focusing on wealth management as an area of potential growth as aging populations demand constant monitoring of their wealth.

Corporate and Investment Banking

Corporate and investment banking includes advisory to a global client base on their financial needs, such as equity and debt issuances, mergers and acquisitions, and restructuring. Revenue is largely fee-based, but this segment is still somewhat exposed to interest rates as a high interest rate environment may discourage corporations from issuing debt to fund operations.

EXHIBIT 8

Global Investment Banking Revenue ($B)
Gradual Recovery Since 2008



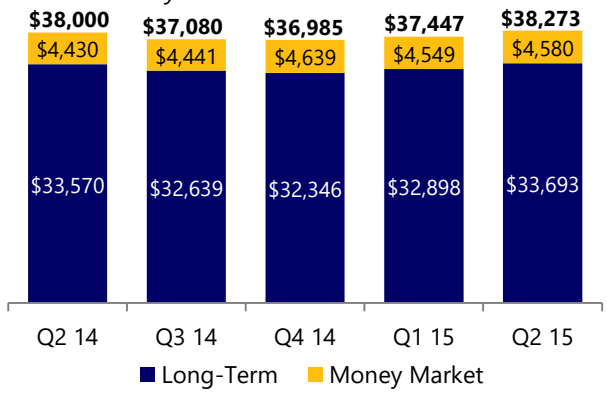
Source: Reuters

Asset Management

Asset management is the service of overseeing a client's investments by investing on behalf of them and offering access to a wide range of traditional and alternative product offerings that would not be available to an average retail investor. Much like wealth management, revenue is derived from a management fee and performance fees, depending on the ability of the fund manager to outperform the market. Interest rate movements will not directly impact revenue, it may increase or decrease returns and assets under management, which will directly affect performance and management fees.

EXHIBIT 9

Worldwide Open-End Fund Assets ($T)
Slow and Steady Growth



Source: ICI Global

Investor and Treasury Services

Investor and treasury service provides specialize in asset servicing, custody, payments, and treasury services for financial and institutional investors worldwide. Select products and services include fund administration, shareholder services, compliance monitoring, transaction banking, and foreign exchange services.

Overview of Bank Financial Statements

Balance Sheet

Generally speaking, a bank's assets are comprised mostly of loans, securities, and reverse purchase agreements. Loans usually account for over half a bank's assets and although this may sound counter intuitive, loans are treated like accounts receivable for banks since it is capital owed to the bank over a period of time. On the other hand, a bank's liabilities can be classified into the following categories: deposits, repurchase agreements, derivate instruments, securities sold short, and other liabilities. The largest liability is deposits, which on average accounts for 68% of a bank's liabilities. Like the concept of loans being assets, this may seem counterintuitive yet it follows the same logic, as a deposit is essentially an account payable for a bank. Since the deposit does not below to the bank itself, it is capital eventually owed back to a customer. In an ideal world a banks deposit to loan ratio would be 1:1 as this would maximize their ability to generate revenue, however this ratio is often found to be larger than ideal so that a margin of safety is created.

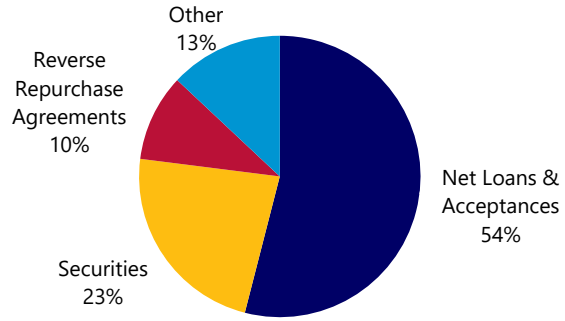
Income Statement

In general, a bank's revenue can be broken down into two categories. The first, interest income, is the money received through interest payments on loans the bank has given out. In 2013, it accounted for, on average, 49% of revenue for large Canadian banks. The important factor to consider when assessing a bank's interest income is their Net Interest Margin (NIM). The Net Interest Margin is the difference between the interest a bank earns from investing the money from their customer's deposits and the interest they are paying the customer. Although interest income is the primary source of revenue, it is not the only source. All other sources of revenue are categorized under non-interest income, such as wealth management, investment banking, and credit card fee. In general, the larger the bank, the larger the percentage of total revenue non-interest income will make up.

Expenses can be broken up similarly. The first main expense is Provisions for Credit Losses. This is essentially an allowance for bad debt expense for the loans the bank lends out. Some non-interest expenses include salaries and benefits, technology, communications, and business development.

EXHIBIT 10

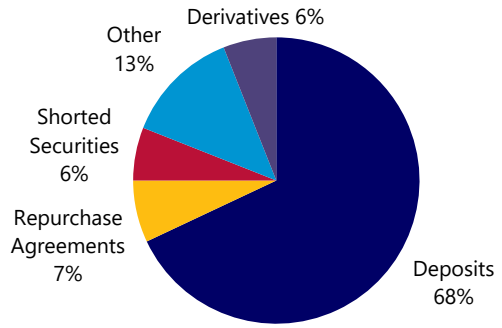
Canadian Big Six: Asset Breakdown
Loans Make Up Majority of Banks' Assets



Source: CIBC World Markets

EXHIBIT 11

Canadian Big Six: Liability Breakdown
Deposits Dominate Banks' Liabilities



Source: CIBC World Markets

Capital and Regulatory Requirements

Global Regulatory Changes Post Financial Crisis

During the recent global financial crisis, a number of banks became insolvent and either failed or received taxpayer-funded bailouts.

This crisis resulted in a series of significant regulatory changes in regards to capital and liquidity for the international banking sector designed to prevent this type of global problem from occurring again.

Introduction to Basel III

In December 2010, the Basel Committee on Banking Supervision (BCBS) finalized the Basel III package aimed at:

- Increasing the capacity of banks to absorb losses relative to risk
- Constraining leverage through a credible, non-risk-based backstop
- Increasing the capacity of banks to absorb shocks to funding and constraining structural funding mismatches
- Incorporating systemic and macroprudential perspectives into capital framework
- Providing greater transparency so market participants can make informed assessments of banks' potential vulnerabilities to shocks

Basel III Capital Rules & Relation to Canada

There are several categories of rules related to capital under Basel III. Taken together, these rules require banks to hold enough capital to equal at least 10.5% of their total risk-weighted assets by 2019.

To implement this, the Office of the Superintendent of Financial Institutions (OSFI) issued the final version of the revised Capital Adequacy Requirements Guideline. Under the CAR Guideline, OSFI expects banks to meet target capital levels that equal or exceed the 2019 Basel III minimum capital requirements in 2013, well before that 2019 deadline.

Canada's banks are among the best capitalized banks in the world in terms of both the quality and quantity of capital, and have been judged the soundest in the world by the World Economic Forum for the last five years.

Basel III Liquidity Rules

The Basel Committee has developed two minimum rules for liquidity – the Liquidity Coverage Ratio (LCR) that has a 30-day horizon, and the Net Stable Funding Ratio (NSFR) that has a time horizon of one year. These rules are meant to ensure banks have sufficient, high-quality liquid assets to withstand a period of economic stress

Stress Testing

Stress testing is a scenario-based analysis designed to determine the ability of financial institutions' capital resources to withstand unfavourable economic conditions.

In the US, the Federal Reserve evaluates financial institutions' capital adequacy, internal capital adequacy assessment processes, and their individual plans to make capital distributions, such as dividend payments or stock purchases through CCAR and DFAST.

Within Canada, the Bank of Canada uses stress testing through their semi-annual Financial System Review (FSR). The focus of the FSR is to assess the main vulnerability and downside risks to the stability of the Canadian financial system.

Ultimately, These stress test evaluate a bank's ability to meet capital and regulatory requirements set out by The Dodd Frank Act (US) or the Bank of Canada.

Comparison Between Canadian and U.S. Banks

Concentration

One key difference between Canadian and U.S. banks is the fragmentation within the market. The Canadian market is dominated by a small number of large banks, frequently referred to as the Big Five or Big Six (RBC, TD, Scotiabank, BMO, CIBC and National). The U.S. market boasts many giants such as JPMorgan, Wells Fargo, Bank of America, Citigroup and U.S. Bancorp but thousands of successful small regional banks have emerged from historical regulations encouraging the creation of local banks.

Diversification

On average, Canadian banks tend to be more diversified than U.S. banks. This is due to the pure-play nature of many U.S. regional banks. Smaller U.S. regional banks make up a significant portion of the U.S. total and tend to focus on traditional loans and deposits. On the other side, many of the largest U.S. banks are very well-diversified and resemble Canadian banks. Common business lines that diversify earnings and generate non-interest income include wealth management and capital markets.

Profitability

The differing levels of profitability between Canadian and U.S. banks is not as clear as the contrasting market concentration. On one hand, net interest margins (NIMs) are significantly larger in the U.S. The Big Six Canadian banks averaged a NIM of 1.98% versus an average NIM of 3.14% in the U.S. This is partially due to a steeper yield curve in the U.S. than in Canada.

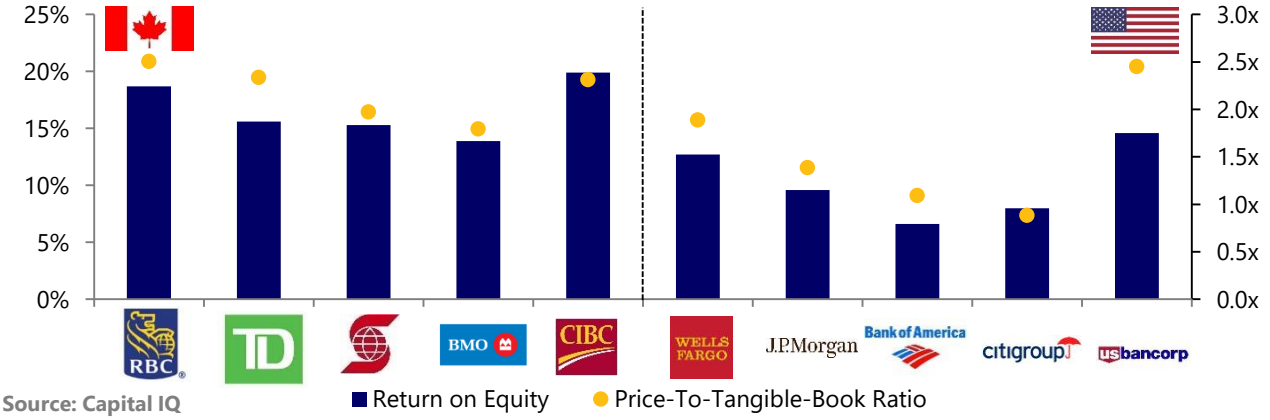
On the other hand, Canadian banks have higher ROEs than U.S. banks. The average Canadian bank has an ROE of 16.7% versus 10.3% in the U.S. Other than greater diversification, one of the reasons why Canadian banks possess greater ROEs with lower NIMs is tied to their greater leverage. It is common for Canadian banks to hold mortgages on their balance sheets, while in the U.S. it is common for loans to be securitized and sold. Since mortgages are seen as low risk, this allows Canadian banks to boast higher asset balances for the same capital levels.

This causes Canadian banks to trade at a slight premium to their U.S. peers

EXHIBIT 12

Canadian versus U.S. Banks

Canadian Banks Offer Greater Profitability at a Greater Valuation



Source: Capital IQ

How Do Interest Rates Affect Banks?

Borrow Low, Lend High

To summarize bank interest rate exposure, higher interest rates or a steeper yield curve are seen as a positive for expanding net interest margins, and thus profitability.

Comparing Banks to Traditional Businesses

Banks can be understood by comparing them to traditional consumer retail businesses. A principle of consumer retail businesses is to buy low and sell high. The markup between the price bought (Cost of Goods Sold) and price sold (Revenue per Unit) is the gross profit earned by the company.

Banks apply a very similar technique to earn profits – banks borrow low and lend high. For example, a commercial bank may borrow money from a central bank at an interest rate of 50bps (or may use a portion of deposited bank account funds paying 50bps) and may lend the same money to a customer needing a mortgage at an interest rate of 250bps. The difference between these interest rates of 200bps is called the net interest spread. Net interest margins are similar to net interest spreads, but factor in differing volumes between amount borrowed and amount loaned. For example, RBC's balance sheet currently shows nearly $500 billion in loans. Given the magnitude of its loan balance, it is easy to see how a 200bps net interest spread can translate to roughly $10 billion of annual net interest income.

Banks require borrowed funds or interest-bearing deposits to loan out money to earn interest income. Given that banks need leverage to operate, and that borrowed funds can be compared to the "Cost of Goods Sold" of a loan, this is one reason why banks cannot be valued in an unlevered state such as a discounted cash flow. Any income metric that does not take into account interest income and interest expense such as EBITDA or UFCF has no meaning.

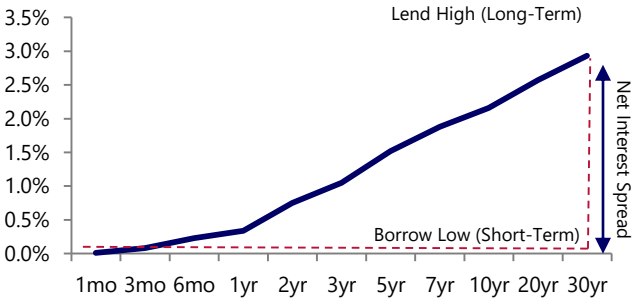
Yield Curve

The core business model of a bank is to use deposited funds or borrow short-term funds to make long-term loans. For example, banks borrow overnight from the central bank to loan for a 10-year mortgage. In other words, banks borrow (pay interest expense) at the low end of the yield curve and lend (receive interest income) at the high end of the yield curve. Based on this information, it can be seen that a steepening of the yield curve will increase net interest margins. A flattening of the yield curve would have the opposite effect, reducing net interest margins. The steeper the yield curve, the greater a bank's profitability.

EXHIBIT 13

U.S. Yield Curve

Short-Term Yields Remain Extremely Low



Source: U.S. Department of the Treasury

Yield Spreads of Different Duration Act as a Rough Proxy for the Steepness of the Yield Curve

The size of yield spreads between a short-term and a long-term interest rate can be a rough indicator for the steepness of the yield curve. For example, the 3M5Y spread shows the income spread earned by borrowing at 3-month rate and lending at the 5-year rate. If the yield curve is steep between the short-term 3-month rate and the medium-term 5-year rate, the yield spread will be large. The larger the yield spread, the more profitable it is for a bank to make loans.

Profitability and Valuation Methodologies

The major portion of bank's profit comes from the fees that it charges for its services and the interest that it earns on its asset. The traditional measures of profitability of any business are its ROA and ROE. However, a bank's net interest margin is the most looked at metric when evaluating a bank's profitability. Net interest margin shows how well the bank is earning income on its assets. A high net interest income and margin indicates a well managed bank and also indicates future profitability.

In terms of valuation methodologies, due to the significance of interest to a banks' operations, analyst must stray away from the DCF analysis. The three valuation methodologies available are the Sum-of-the-Parts Model, Dividend Discount Model (DDM) and Residual Income Model.

EXHIBIT 8

Sum-of-the-Parts Valuation Method

Wells Fargo & Co **Sum-of-the-Parts Valuation**							
Business Operations	Segmented Earnings			Comps	Implied Equity Value		
(In USD Millions)	2014A	2015E	2016E	P / E	2014A	2015E	2016E
Community Banking	14,180	12,433	14,401	10.9x	153,971	135,002	156,368
Wholesale Banking	7,584	7,541	8,141	18.7x	141,865	141,063	152,289
Wealth, Brokerage, and Retirement	2,083	1,699	1,926	13.9x	28,912	23,586	26,726
Intercompany Eliminations	-790	0	0	0.0x	0	0	0
Implied Equity Value from Business Operations					324,748	299,650	335,384

Implied Valuation			
Value Attributable to Equity	2016E	Current Price	$55.05
Using median comparables	335,384.0	Price Target	$63.00
Fully Diluted Shares Outstanding	5,323.4		
Per Share Value from Business Operations	**$63.00**	**Target Return**	**12.62%**

Source: Thomson One, Capital IQ

Profitability and Valuation Methodologies

EXHIBIT 9

Dividend Discount Model and Residual Income Valuation Method

DDM Assumptions: Exit Multiple Method	
Mid-Year Convention:	0.50
Minimum Tier 1 Common Ratio:	12.00%
Return on Tangible Common Equity	14.00%
Risk-Weighted Assets Growth:	3.00%
Cost of Equity:	11.49%
Terminal Value:	
Sum of PV of Dividends:	73,940
Terminal P / TBV:	1.50 x
Terminal Value (Multiple):	313,807
PV of Terminal Value:	182,211
PV of Terminal Value as % of Total PV	71.13%
Present Value of Equity:	**$ 256,151**
Diluted Shares:	5,323.4
Implied Share Price:	**$ 48.12**
Implied Return	**-12.59%**

Discount Rate Calculation - Assumptions	
10-Year US Treasury (Risk-Free Rate):	2.21%
Equity Risk Premium:	5.39%

Comparable Companies - Levered Beta Calculation		
Name	**Equity Value**	**Levered Beta**
Citigroup Inc.	$ 160,120	1.38
JP Morgan Chase & Co.	$ 241,080	1.22
Bank of America Corporation	$ 177,890	0.85
U.S. Bancorp	$ 75,420	0.86
Median	**$ 169,005**	**1.04**
Wells Fargo & Company	**$ 160,111**	**1.72**

Cost of Equity Based on Comparables:	**7.82%**
Cost of Equity Based on Historical Beta:	**11.49%**

Residual Income Assumptions		
Mid-Year Convention:		0.50
Minimum Tier 1 Common Ratio:		12.0%
Annual Stock Repurchases:	$	5,000
Return on Common Equity:		
Development:		16.0%
Maturity:		16.0%
Long-Term:		16.0%
Risk-Weighted Assets Growth:		
Development:		7.0%
Maturity:		7.0%
Cost of Equity:		11.49%
Present Value of Equity Calculations:		
Current Value of Common Equity:	$	165,708
Sum of PV of Residual Income:		32,109
Terminal NI Growth Rate:		3.0%
Estimated Year 6 NI to Common:		34,868
Residual Income Terminal Value:		115,951
PV of Res. Inc. Terminal Value:		71,088
Present Value of Equity:	**$**	**268,904**
Diluted Shares:		5,323.4
Implied Share Price:	**$**	**50.51**
Implied Return		**-8.98%**

Source: Thomson One, Capital IQ

Appendix (SOTP)

Community Banking						Projection Period					CAGR/Average	
(In USD Millions)	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	10A-14A	15E-19E
Revenues												
Net Interest Income	31,885	29,580	29,045	28,839	29,709	31,194	32,442	33,415	34,418	35,450	(1.8%)	3.2%
Annual % Growth	*(8.4%)*	*(7.2%)*	*(1.8%)*	*(0.7%)*	*3.0%*	*5.0%*	*4.0%*	*3.0%*	*3.0%*	*3.0%*		
Non-Interest Income	22,604	21,124	24,360	21,500	21,153	21,788	22,441	22,890	23,348	23,815	(1.6%)	2.2%
Annual % Growth	*(11.9%)*	*(6.5%)*	*15.3%*	*(11.7%)*	*(1.6%)*	*3.0%*	*3.0%*	*2.0%*	*2.0%*	*2.0%*		
Total Revenue	54,489	50,704	53,405	50,339	50,862	52,982	54,883	56,306	57,766	59,265		
Expenses												
Provision for Credit Losses (Reversals)	13,807	8,001	6,835	2,755	1,681	6,239	5,840	5,681	5,507	5,318		
As % of Net Interest Income	*43.3%*	*27.0%*	*23.5%*	*9.6%*	*5.7%*	*20.0%*	*18.0%*	*17.0%*	*16.0%*	*15.0%*	21.8%	17.2%
Non-Interest Expense	30,071	29,234	30,840	28,723	28,126	28,324	28,052	27,468	28,017	28,578		
As % of Non-Interest Income	*133.0%*	*138.4%*	*126.6%*	*133.6%*	*133.0%*	*130.0%*	*125.0%*	*120.0%*	*120.0%*	*120.0%*	132.9%	123.0%
Total Expenses	43,878	37,235	37,675	31,478	29,807	34,563	33,891	33,149	33,524	33,895		
Earnings Before Tax	10,611	13,469	15,730	18,861	21,055	18,419	20,992	23,157	24,242	25,370		
As % of Total Revenue	*19.5%*	*26.6%*	*29.5%*	*37.5%*	*41.4%*	*34.8%*	*38.2%*	*41.1%*	*42.0%*	*42.8%*	30.9%	39.8%
Income Tax	3,347	4,072	4,774	5,799	6,350	5,526	6,088	6,484	6,788	7,104		
As % of Earnings Before Tax	*31.5%*	*30.2%*	*30.3%*	*30.7%*	*30.2%*	*30.0%*	*29.0%*	*28.0%*	*28.0%*	*28.0%*	30.6%	28.6%
Net Income From Non-Controlling Interest	274	317	464	330	525	460	504	533	533	533		
As % of Earnings Before Tax	*2.6%*	*2.4%*	*2.9%*	*1.7%*	*2.5%*	*2.5%*	*2.4%*	*2.3%*	*2.2%*	*2.1%*	2.4%	2.3%
Net Income	6,990	9,080	10,492	12,732	14,180	12,433	14,401	16,140	16,921	17,734		
As % of Total Revenue	*12.8%*	*17.9%*	*19.6%*	*25.3%*	*27.9%*	*23.5%*	*26.2%*	*28.7%*	*29.3%*	*29.9%*	20.7%	27.5%

Wholesale Banking						Projection Period					CAGR/Average	
(In USD Millions)	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	10A-14A	15E-19E
Revenues												
Net Interest Income	11,474	11,714	12,648	12,298	11,955	12,553	13,055	13,447	13,850	14,265	1.0%	3.2%
Annual % Growth	*12.2%*	*2.1%*	*8.0%*	*(2.8%)*	*(2.8%)*	*5.0%*	*4.0%*	*3.0%*	*3.0%*	*3.0%*		
Non-Interest Income	10,951	9,952	11,444	11,766	11,527	11,873	12,229	12,596	12,848	13,105	1.3%	2.5%
Annual % Growth	*5.2%*	*(9.1%)*	*15.0%*	*2.8%*	*(2.0%)*	*3.0%*	*3.0%*	*3.0%*	*2.0%*	*2.0%*		
Total Revenue	22,425	21,666	24,092	24,064	23,482	24,426	25,284	26,042	26,698	27,370		
Expenses												
Provision for Credit Losses (Reversals)	1,920	(109)	286	(445)	(266)	314	313	309	305	300		
As % of Net Interest Income	*16.7%*	*(0.9%)*	*2.3%*	*(3.6%)*	*(2.2%)*	*2.5%*	*2.4%*	*2.3%*	*2.2%*	*2.1%*	2.4%	2.3%
Non-Interest Expense	11,269	11,194	12,082	12,378	12,975	12,823	12,963	13,100	13,105	13,105		
As % of Non-Interest Income	*102.9%*	*112.5%*	*105.6%*	*105.2%*	*112.6%*	*108.0%*	*106.0%*	*104.0%*	*102.0%*	*100.0%*	107.7%	104.0%
Total Expenses	13,189	11,085	12,368	11,933	12,709	13,136	13,276	13,409	13,409	13,404		
Earnings Before Tax	9,236	10,581	11,724	12,131	10,773	11,289	12,008	12,633	13,288	13,966		
As % of Total Revenue	*41.2%*	*48.8%*	*48.7%*	*50.4%*	*45.9%*	*46.2%*	*47.5%*	*48.5%*	*49.8%*	*51.0%*	47.0%	48.6%
Income Tax	3,315	3,525	3,943	3,984	3,165	3,725	3,842	3,916	3,986	4,190		
As % of Earnings Before Tax	*35.9%*	*33.3%*	*33.6%*	*32.8%*	*29.4%*	*33.0%*	*32.0%*	*31.0%*	*30.0%*	*30.0%*	33.0%	31.2%
Net Income From Non-Controlling Interest	20	19	7	14	24	23	24	25	27	28		
As % of Earnings Before Tax	*0.2%*	*0.2%*	*0.1%*	*0.1%*	*0.2%*	*0.2%*	*0.2%*	*0.2%*	*0.2%*	*0.2%*	0.2%	0.2%
Net Income	5,901	7,037	7,774	8,133	7,584	7,541	8,141	8,692	9,275	9,748		
As % of Total Revenue	*26.3%*	*32.5%*	*32.3%*	*33.8%*	*32.3%*	*30.9%*	*32.2%*	*33.4%*	*34.7%*	*35.6%*	31.4%	33.4%

Wealth, Brokerage, and Retirement						Projection Period					CAGR/Average	
(In USD Millions)	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	10A-14A	15E-19E
Revenues												
Net Interest Income	2,707	2,855	2,768	2,888	3,179	3,338	3,471	3,576	3,683	3,793	4.1%	3.2%
Annual % Growth	*12.5%*	*5.5%*	*(3.0%)*	*4.3%*	*10.1%*	*5.0%*	*4.0%*	*3.0%*	*3.0%*	*3.0%*		
Non-Interest Income	9,023	9,333	9,392	10,315	11,039	11,370	11,711	11,946	12,184	12,428	5.2%	2.2%
Annual % Growth	*8.0%*	*3.4%*	*0.6%*	*9.8%*	*7.0%*	*3.0%*	*3.0%*	*2.0%*	*2.0%*	*2.0%*		
Total Revenue	11,730	12,188	12,160	13,203	14,218	14,708	15,183	15,521	15,867	16,221		
Expenses												
Provision for Credit Losses (Reversals)	334	170	125	(16)	(50)	134	122	107	110	114		
As % of Net Interest Income	*12.3%*	*6.0%*	*4.5%*	*(0.6%)*	*(1.6%)*	*4.0%*	*3.5%*	*3.0%*	*3.0%*	*3.0%*	4.1%	3.3%
Non-Interest Expense	9,768	9,935	9,893	10,455	10,907	11,825	11,946	11,946	12,184	12,428		
As % of Non-Interest Income	*108.3%*	*106.5%*	*105.3%*	*101.4%*	*98.8%*	*104.0%*	*102.0%*	*100.0%*	*100.0%*	*100.0%*	104.0%	101.2%
Total Expenses	10,102	10,105	10,018	10,439	10,857	11,958	12,067	12,053	12,295	12,542		
Earnings Before Tax	1,628	2,083	2,142	2,764	3,361	2,750	3,116	3,468	3,572	3,680		
As % of Total Revenue	*13.9%*	*17.1%*	*17.6%*	*20.9%*	*23.6%*	*18.7%*	*20.5%*	*22.3%*	*22.5%*	*22.7%*	18.6%	21.4%
Income Tax	616	789	814	1,050	1,276	1,045	1,184	1,318	1,358	1,398		
As % of Earnings Before Tax	*37.8%*	*37.9%*	*38.0%*	*38.0%*	*38.0%*	*38.0%*	*38.0%*	*38.0%*	*38.0%*	*38.0%*	37.9%	38.0%
Net Income From Non-Controlling Interest	7	6	-	2	2	5	6	7	7	7		
As % of Earnings Before Tax	*0.4%*	*0.3%*	-	*0.1%*	*0.1%*	*0.2%*	*0.2%*	*0.2%*	*0.2%*	*0.2%*	0.2%	0.2%
Net Income	1,005	1,288	1,328	1,712	2,083	1,699	1,926	2,143	2,208	2,274		
As % of Total Revenue	*8.6%*	*10.6%*	*10.9%*	*13.0%*	*14.7%*	*11.6%*	*12.7%*	*13.8%*	*13.9%*	*14.0%*	11.5%	13.2%

Intercompany Eliminations						Projection Period					CAGR/Average	
(In USD Millions)	2010	2011	2012	2013	2014	2015E	2016E	2017E	2018E	2019E	10A-14A	15E-19E
Revenue	(1,309)	(1,386)	(3,571)	(3,826)	(4,215)	-	-	-	-	-	34.0%	-
Annual % Growth	*19.0%*	*5.9%*	*157.6%*	*7.1%*	*10.2%*	*(100.0%)*	-	-	-	-		
Provision for Credit Losses (Reversals)	(308)	(163)	(29)	15	30	-	-	-	-	-		
As % of Revenue	*23.5%*	*11.8%*	*0.8%*	*(0.4%)*	*(0.7%)*	*7.0%*	*7.0%*	*7.0%*	*7.0%*	*7.0%*	7.0%	7.0%
Net Income (Loss)	(1,534)	(1,536)	(697)	(699)	(790)	-	-	-	-	-		
As % of Revenue	*117.2%*	*110.8%*	*19.5%*	*18.3%*	*18.7%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	56.9%	100.0%

Appendix (Dividend Discount Model)

Wells Fargo & Company Dividend Discount Model

($ in Millions Except Per Share Data)

	Historical	Projected				
	2014	2015	2016	2017	2018	2019
Normalized Net Income to Common:	**$ 21,821**	**$ 25,361**	**$ 26,430**	**$ 28,280**	**$ 30,260**	**$ 32,378**
% Growth:		16.2%	4.2%	7.0%	7.0%	7.0%
Common Dividends:	**7,100**	**23,890**	**16,038**	**17,167**	**18,371**	**19,658**
% Growth:		236.5%	(32.9%)	7.0%	7.0%	7.0%
Payout Ratio:	**32.5%**	94.2%	60.7%	60.7%	60.7%	60.7%
Beginning Common Equity:	**$ 153,875**	$ 165,708	$ 167,984	$ 179,240	$ 191,279	$ 204,155
Plus: Net Income to Common:	**21,821**	25,361	26,430	28,280	30,260	32,378
Plus: Stock Issuances:	**-**	-	-	-	-	-
Plus: Stock-Based Comp.:	**1,912**	1,969	2,028	2,089	2,152	2,217
Less: Stock Repurchases:	**(4,800)**	(1,164)	(1,164)	(1,164)	(1,164)	(1,164)
Less: Common Dividends:	**(7,100)**	(23,890)	(16,038)	(17,167)	(18,371)	(19,658)
Ending Common Equity:	**$ 165,708**	**$ 167,984**	**$ 179,240**	**$ 191,279**	**$ 204,155**	**$ 217,928**
Avg. Risk-Weighted Assets:	**1,243,000**	1,330,010	1,423,111	1,522,728	1,629,319	1,743,372
% Growth:		7.0%	7.0%	7.0%	7.0%	7.0%
Tier 1 Common Ratio:	**12.5%**	12.0%	12.0%	12.0%	12.0%	12.0%
Return on Tangible Common Equity:	**16.9%**	16.0%	16.0%	16.0%	16.0%	16.0%
Tangible Common Equity / Tier 1 Common Capital Calculation:						
Ending Common Equity:	**$ 165,708**	$ 167,984	$ 179,240	$ 191,279	$ 204,155	$ 217,928
Less: Disallowed Intangibles:	**(26,300)**	(26,563)	(26,829)	(27,097)	(27,368)	(27,642)
Plus: Other Adjustments:	**18,000**	18,180	18,362	18,545	18,731	18,918
Total Tier 1 Common Capital:	**$ 157,408**	**$ 159,601**	**$ 170,773**	**$ 182,727**	**$ 195,518**	**$ 209,205**
Discount Period:	**0.0**	1.0	2.0	3.0	4.0	5.0
Mid-Year Discount Period:		0.5	1.5	2.5	3.5	4.5
PV of Dividends:		$ 22,626	$ 13,625	$ 13,081	$ 12,557	$ 12,052

Terminal Multiple Sensitivity

Terminal P / TBV Multiple	Cost of Equity: 8.5%	9.5%	10.5%	**11.5%**	12.5%	13.5%	14.5%
2.1 x	$69.68	$66.92	$64.30	**$61.81**	$59.45	$57.20	$55.07
1.9 x	$64.45	$61.92	$59.52	**$57.25**	$55.08	$53.03	$51.08
1.7 x	$59.22	$56.93	$54.75	**$52.68**	$50.72	$48.85	$47.08
1.5 x	**$53.99**	**$51.93**	**$49.97**	**$48.12**	**$46.35**	**$44.68**	**$43.08**
1.3 x	$48.76	$46.93	$45.20	**$43.55**	$41.99	$40.50	$39.09
1.1 x	$43.53	$41.94	$40.43	**$38.99**	$37.63	$36.33	$35.09
0.9 x	$38.30	$36.94	$35.65	**$34.43**	$33.26	$32.15	$31.10

Appendix (Residual Income Valuation)

Wells Fargo & Company Residual Income Model

($ in Millions Except Per Share Data)

	Historical	Projected				
December 31,	**2014**	2015E	2016E	2017E	2018E	2019E
Normalized Net Income to Common:	**$ 21,821**	**$ 26,695**	**$ 27,778**	**$ 29,642**	**$ 31,635**	**$ 33,767**
% Growth:		22.3%	4.1%	6.7%	6.7%	6.7%
Common Dividends:	**7,100**	**25,225**	**17,386**	**18,528**	**19,746**	**21,047**
% Growth:		255.3%	(31.1%)	6.6%	6.6%	6.6%
Payout Ratio:	**32.5%**	94.5%	62.6%	62.5%	62.4%	62.3%
Beginning Common Equity:	**$ 153,875**	$ 165,708	$ 167,984	$ 179,240	$ 191,279	$ 204,155
Plus: Net Income to Common:	21,821	26,695	27,778	29,642	31,635	33,767
Plus: Stock Issuances:	-	-	-	-	-	-
Plus: Stock-Based Comp.:	1,912	1,969	2,028	2,089	2,152	2,217
Plus: Exchange Rate Effect:	-	-	-	-	-	-
Less: Stock Repurchases:	**(4,800)**	(1,164)	(1,164)	(1,164)	(1,164)	(1,164)
Less: Common Dividends:	(7,100)	(25,225)	(17,386)	(18,528)	(19,746)	(21,047)
Ending Common Equity:	**$ 165,708**	**$ 167,984**	**$ 179,240**	**$ 191,279**	**$ 204,155**	**$ 217,928**
Avg. Risk-Weighted Assets:	**1,243,000**	1,330,010	1,423,111	1,522,728	1,629,319	1,743,372
% Growth:	**0.0%**	7.0%	7.0%	7.0%	7.0%	7.0%
Tier 1 Common Ratio:	**12.5%**	12.0%	12.0%	12.0%	12.0%	12.0%
Return on Common Equity:	**16.9%**	16.0%	16.0%	16.0%	16.0%	16.0%
Tier 1 Common Capital Calculation:						
Ending Common Equity:	**$ 165,708**	$ 167,984	$ 179,240	$ 191,279	$ 204,155	$ 217,928
Less: Disallowed Intangibles:	**(26,300)**	(26,563)	(26,829)	(27,097)	(27,368)	(27,642)
Plus: Other Adjustments:	**18,000**	18,180	18,362	18,545	18,731	18,918
Total Tier 1 Common Capital:	**$ 157,408**	**$ 159,601**	**$ 170,773**	**$ 182,727**	**$ 195,518**	**$ 209,205**
Residual Income / Excess Returns:		**$ 7,533**	**$ 7,838**	**$ 8,364**	**$ 8,926**	**$ 9,528**
Discount Period:	**0.0**	1.0	2.0	3.0	4.0	5.0
Mid-Year Discount Period:		0.5	1.5	2.5	3.5	4.5
PV of Residual Income:		**$ 7,134**	**$ 6,659**	**$ 6,373**	**$ 6,101**	**$ 5,841**

References

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2. Capital IQ
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4. Company Reports
5. Federal Reserve
6. ICI Global
7. Marcato Research
8. RBC Capital Markets
9. Reuters
10. U.S. Department of the Treasury