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Goodreid eArticle, Spring 2018

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Banks are interest rate sensitive stocks and interest rates are rising. We expect rates to continue to rise, which begs the question, "will rising interest rates and a flattening yield curve kill the golden goose and sap the profitability of these pillars of the financial system?" We don't think so, and to the contrary, we expect a rising interest rate environment to benefit the banks we own. Before delving into the issue, which admittedly is a somewhat complex topic, and one where misinformation and outdated rules of thumb abound, unfortunately even amongst investment professionals themselves, let's define some of the opaque jargon investors throw around in evaluating banks.

***Yield curve**:* a visual representation of interest rates for loans, bonds or deposits of varying maturity, where the interest rate is shown on the y-axis and the term of the loan is shown on the x-axis
Steepening: the yield curve is steepening if longer maturity interest rates are rising more than shorter maturities, or if shorter maturity rates are falling more than longer maturities
Flattening: the yield curve is flattening if longer maturity interest rates are rising less than shorter maturities, or if shorter maturity rates are falling less than longer maturities
Parallel: the yield curve shifts in parallel if rates of all maturities rise or fall by the same amount
Inverted: the yield curve is inverted if shorter maturity interest rates exceed longer maturities; this shape of yield curve is uncommon, and is often a precursor to recession
Net interest margin: the excess of interest received by a bank from borrowers over interest paid by a bank to depositors, expressed in % terms
Net interest income: the excess of interest received by a bank from borrowers over interest paid by a bank to depositors, expressed in $ terms

OK…with the jargon hopefully now demystified, we'd like to demonstrate the following:

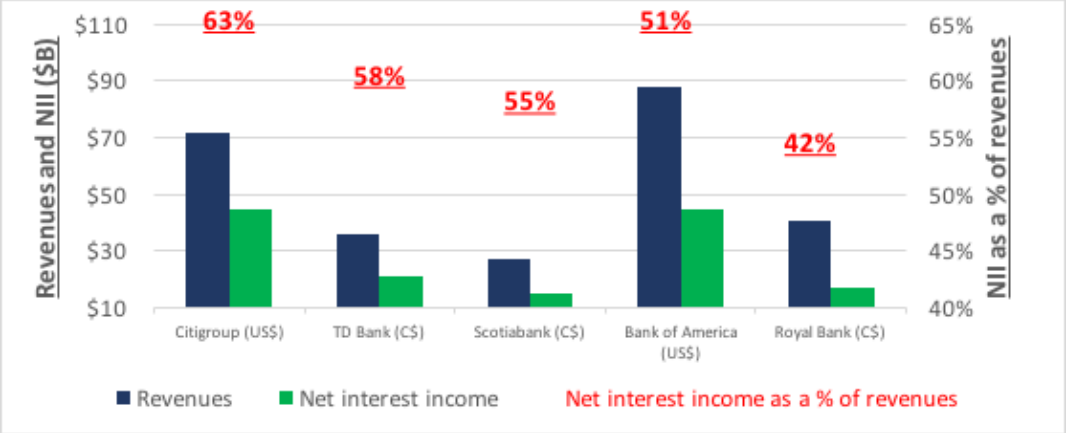
• Net interest income is a very important component of overall bank profitability

• Net interest margins have been under pressure due to structurally low interest rates over the last decade, but are poised to recover slowly as rates rise

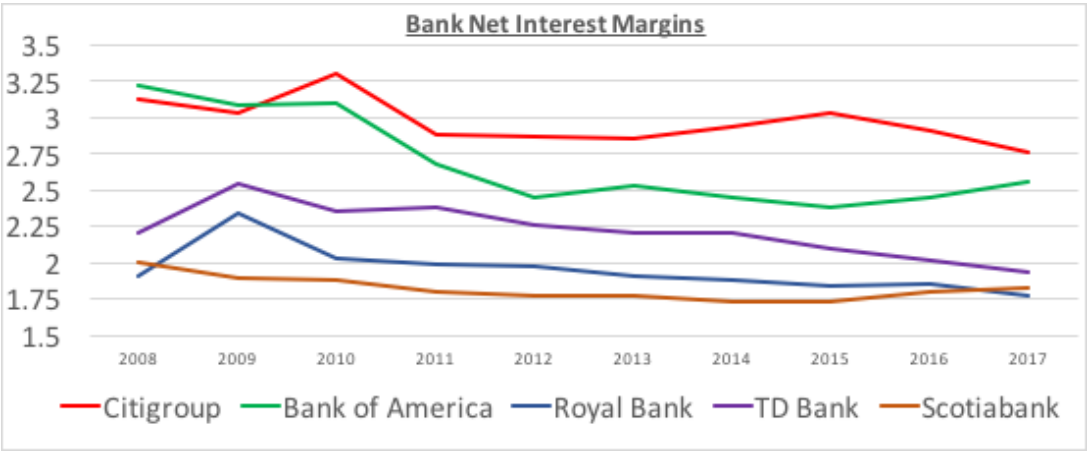
• The U.S. banks have significantly more leverage to rising interest rates than the Canadian banks do, offset somewhat by significantly more credit risk

• Flattening yield curves are not likely to be the kryptonite to bank earnings that some investors fear, and as conventional wisdom would hold

The basic business of banking hasn't changed in centuries. While not an easy business by any means, the fundamental proposition of a bank is a simple one: banks safeguard deposits for savers and loan funds to borrowers. By paying depositors a lower interest rate on their savings than they charge borrowers on their borrowings, banks earn a profit known as the **net interest margin.** This comes as no surprise to anyone with a chequing account paying them a meagre 0.05% to 0.10% these days, or even a savings account, where the interest rate is unlikely to exceed 1.25%. Nor will it surprise anyone with a mortgage or a credit card where rates are typically 3-4% and 15-20%, respectively. Entrepreneurs will know that business deposit accounts pay roughly 1% interest whereas business loans incur interest rates in the 3-4% range and upwards. In simple terms, a bank with total interest earning assets of $500B and a 2% **net interest margin**, will earn **net interest income** of $10B ($500B x 2%). Investors in banks can think of this as being akin to its' gross margin, or the mark-up the bank earns over and above its cost of funds. It's not the only thing that drives bank profitability…banks earn significant income from non-interest sources, via business segments like investor and custodial services, investment banking, wealth management and insurance, and, of course via the numerous flat fees retail banking clients pay for things like paper statements, ATM withdrawals, electronic money transfers, cheque orders, etc. And on the expense side of the ledger, credit losses which rise and fall dramatically as the economy moves from expansion to recession and vice versa and operating costs (personnel, occupancy, technology, etc.) also have an important role to play, but **net interest income** is extremely important for banks, and is easily one of the top three factors driving share prices at any given time as the chart below illustrates.



Canada, the United States and indeed the world in general have been entrenched in a historically unusual period of low growth and low interest rates ever since the financial crisis in 2008, but this is starting to change as we see the Bank of Canada and the Federal Reserve moving slowly to normalize interest rates via a series of rate hikes. As shown in the chart below, the decade long era of low interest rates pressured banks' **net interest margins**, as interest rates on mortgages, business loans and other credit products adjusted downwards, following the lead of the Fed and the Bank of Canada, but deposit rates hit their practical and natural floor at or near zero percent…because what sensible individual would actually deposit money in a bank at a negative interest rate as opposed to keeping it under their mattress or more practically in a safety deposit box? While some banks have enjoyed higher margins than others over time (reflecting mostly differences in credit risk, since the U.S. banks incur credit losses at roughly 2-4x the rate of the Canadian banks over the course of a credit cycle), all of the banks have seen some degradation in their **net interest margins** over the last decade.



As rates now begin to rise, let's evaluate the impact this may have on bank profitability. As shown in the below table, using figures from each bank's 2017 annual report, the impact of a **parallel** 100 basis point increase in interest rates (i.e. rates rise by exactly 1% across all maturities from overnight out to 10 years) is positive for all of the banks we own, but to varying degrees, reflecting differences in their business mix, their geographic footprints and their unique approach to interest rate risk management. Clearly though, the U.S. banks are significantly more leveraged to rising rates than their Canadian peers, with such a shift potentially adding 10% to their 2018 earnings per share versus an increment of just 1-3% for the Canadian banks.

	Citigroup (US$)	Bank of America (US$)	Royal Bank (C$)	TD Bank (C$)	Scotiabank* (C$)
Pre-tax net interest income impact of 100 bps parallel rate hike ($mm)	$ 2,069	$ 3,317	$ 451	$ 116	$ 64
Share count (mm)	2549.9	10175.9	1444.1	1845.3	1198
2018 Consensus Earnings per Share	$ 6.44	$ 2.55	$ 8.36	$ 6.20	$ 7.03
Effective tax rate	24%	20%	23%	20%	20%
% Increment to 2018 EPS	10%	10%	3%	1%	1%
* Scotiabank NII disclosure is on an after-tax basis					

A further point to consider is the impact of a **flattening** or a **steepening** of the yield curve on bank profits. Conventional wisdom holds that banks "borrow short and lend long" (i.e. borrow in overnight markets or via demand deposits and lend via 5 year mortgages, corporate term loans, etc.), and thus prefer a steep yield curve and are vulnerable to a **net interest margin** squeeze if the yield curve were to flatten or **invert**. **Flattening** is in fact exactly what the yield curve as measured by the spread between 10 Year U.S. Treasury bond yields and 2 Year U.S. Treasury bond yields has been doing fairly consistently since 2014, but in an accelerating fashion since the U.S. elections in November 2016, as shown in the chart below.

Digging through the hundreds of pages of disclosure provided by each of these banks in their annual reports, we see that the conventional wisdom doesn't quite hold perfectly true. The U.S. banks explicitly disclose that their net interest income would actually increase by $1.9B (Citigroup) and by $2.1B (Bank of America) in a **flattening** scenario whereby short rates rise 100 basis points and longer term rates don't change. Conversely, their **net interest income** would drop by $137m (Citigroup) and by $1.2B (Bank of America) in a **flattening** scenario whereby longer term bond yields fall by 50 basis points and short rates hold steady. The Canadian banks don't provide the same level of disclosure about their **net interest income** sensitivity to **flattening** or **steepening** yield curves, but we can infer it, at least directionally, by looking at the composition of their assets and liabilities, and measuring the "gap" or excess of assets over liabilities at each maturity tenor on the yield curve. To generalize, all of the Canadian banks have significantly more floating rate liabilities than assets, with these liabilities primarily comprised of personal and business deposits and rounded out by some repos - a form of interbank borrowing. In theory then, an increase in the overnight Bank of Canada rate could squeeze their margins. But of course, we know that banks don't exactly trip over themselves in immediately increasing the rates they offer on savings and chequing accounts the instant the Bank of Canada hikes rates, so the distinction between theory and actual commercial practice is an important one here. Looking at longer maturity assets and liabilities, since the balance sheet must necessarily balance, it follows then that all of the banks have an excess of assets over liabilities at all maturities longer than "overnight", and thus stand to see an improvement in their net interest income as longer term rates rise and as these assets and liabilities mature and reprice higher. Accordingly, we emphatically refute the conventional wisdom that a **flattening yield curve** spells doomsday for the banks…the facts simply don't bear this out. **A flattening yield curve** may help or harm bank profits, depending on

which way it occurs, but a rise in the general level of interest rates is overall much more impactful than any **flattening** or **steepening** of the **yield curve** may be.

A final thought on the banks is the observation that banking is in some ways a huge, global "size and scale" type of business, but it's also a very important and personal "trust" business, much like our own business. In that regard, trust in the institution attracts deposits, and any violation of that trust or erosion of confidence in the bank causes deposits to flee…the proverbial "run on the bank", such as what we saw with Canada's Home Capital Group last year. Attracting core deposits is extremely important to ensuring low cost stable funding for each of these banks' balance sheets. We accordingly expend significant research effort in understanding banks' funding strategies, including evaluating the quality of management, the executive compensation philosophy and incentive structures as well as the overall corporate governance regime and the efficacy of the regulatory framework in each jurisdiction these banks operate in. In that regard, we remain very comfortable with these five banks and consider them core long term holdings in a well-diversified portfolio, which also in the current environment serve as an important offset to conventional bonds via their advantaged exposure to rising interest rates.