Banking Sector Analysis

Rising Rates Lift Bank Profitability

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- **A rising rate environment will boost bank profitability**
- **Increased levels of equity will hold down ROE**
- **Innovation in the use of technology will be key to unlock further ROE growth**

During the 2008 U.S. financial crisis and the recession that followed, the banking industry suffered its worst period of return on equity (ROE) since the banking crises of the late 1980's, when industry-wide ROE fell to -19.9%. From 1992 to 3Q07, the commercial banking industry had not experienced a return on equity below 12%. Starting in '07, provisions for loan losses climbed from 5.3% of total interest revenue at the beginning of the year to reach a crisis peak of over 50.3% in 2009. Increases in provisions directly reduce net income, and as a result, ROE plunged to 3.1% by the end of 2007 and to a nadir of -10.2% in 4Q08.

Chart 1
Commercial Bank Return on Equity (Annualized %)

Source: FDIC

Negative ROE reduces the amount of equity on the balance sheet and if losses are large enough, they can wipe out all the equity and render a bank insolvent. In fact, overleverage and systemic risks led to 411 bank failures collectively worth over $668B between 2008 and 2011. By the end of 2009, bad loans provisions began to shrink and loan growth stopped contracting before finally begin to expand in 1H11. Today, the commercial banking industry has returned to profitability, the U.S. economy is growing, and nonfinancial sector profits in the U.S. have hit record highs. However, industry ROE still has not managed to break out above 10% and get back to its pre-crisis trend, instead ranging around 8-9%.

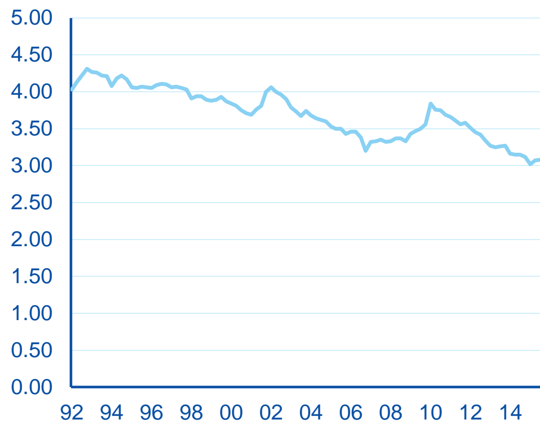
The question facing the banking industry now is whether or not the financial crisis and its aftermath represented a structural shift in ROE and if monetary policy normalization will return bank's ROE back to pre-crisis levels.

Low ROE Environment

Dovish monetary policy in the aftermath of the crisis and the lackluster pace of economic growth in the U.S. has resulted in an unprecedented and prolonged period of low interest rates and a flat yield curve that have held back ROE.

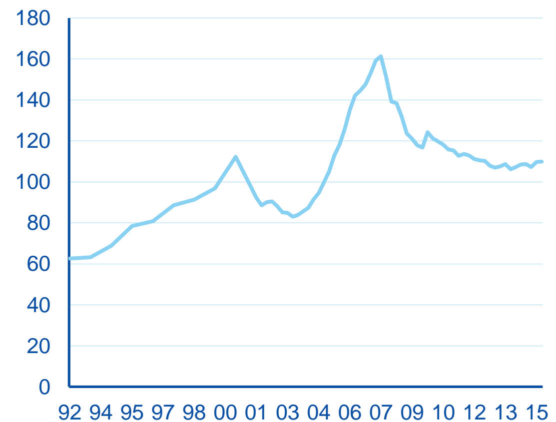
First, the flatness of the yield curve is of particular importance because banks engage in maturity transformation when making loans; that is, they fund themselves at a short term rate and lend at a longer term rate, earning income from the spread while managing the maturity mismatch and liquidity needs. Therefore, the spread between long term and short term interest rates is a significant factor in their profitability. A flat yield curve with only a small spread between the long term and the short term rate compresses the net interest margin (NIM).

Chart 2
Commercial Bank Net Interest Margin (Annualized %)



Source: FDIC

Chart 3
Interest Income (in Billions $)



Source: FDIC

Second, low interest rates impact bank's ability to take advantage of deposit funding, as banks are often able to price deposits at rates below the market rates for other short term instruments, the so called "retail endowment effect." However, the low interest rate environment reduces bank's ability to take advantage of this due to the zero lower bound.[1]

Third, due to the extended length of time interest rates have been low, loans and assets that were originated at higher interest rates mature or are realized and banks then have to replace them with lower yielding assets, further compressing the NIM.

[1] BIS

Industry-wide, the net interest margin (NIM) has narrowed substantially. For commercial banks, the overall NIM currently stands effectively at the 30 year low of 3.0% seen in the 1st quarter of 2015, almost a full percentage point below the average margin of 4% observed between 1992 and 2007. In 2014, if the NIM was at 4%, annual net interest income would have been over $100 billion higher, at over $495 billion, instead of at $389 billion. At the 3Q15 level of $ 13.15 trillion in earning assets, a 1 basis point increase in the NIM increases net interest income by $1.3 billion.

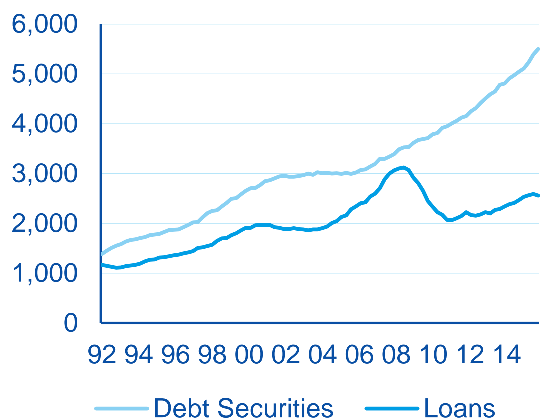
Rising Interest Rates Have Arrived

All things equal, a rising interest rate environment will be positive for the banking industry's ROE. It will increase the yield that is earned on loans and other assets. Higher interest rates could also raise the cost of funding for the banking industry, but with core deposits amounting to around 90% of total loans currently, there should be little need for rapid growth from other costlier and more interest sensitive sources of funding. With total asset growth decelerating to just 0.3% in the 3Q15, below the quarterly trend seen since 2010 of 1% growth, the industry has slowed loan growth down to optimize their funding structure in order to be able to take advantage of rising rates. In a rising rate environment, deposit rates will adjust fairly slowly while banks will adjust the pricing on their loans and other assets as fast as they can in order to widen the spread between what they pay on funding and what they earn. With the difference in re-pricing speeds, any increases of the interest rate should help drive expansion of the net interest margin and increase net interest income.

Given that the gradual increase of interest rate will reflect a strengthening economy and higher GDP growth, banks should also see an increased demand for commercial and retail loans. This is a significant factor, as the ratio of net loans to total assets fell significantly during the crisis to near 52% from pre-crisis levels of around 60% and have not yet fully recovered, currently standing at 53.9%. This drop represents a significant reduction in the yield of earning assets, as loans are usually higher yielding than the securities or cash banks would otherwise put on their balance sheet. Lack of loan growth can in part be explained by a shift in credit allocation. Ultra-low interest rates may have shifted the incentives to borrow from bank loans to debt securities for firms that have access to the capital markets.

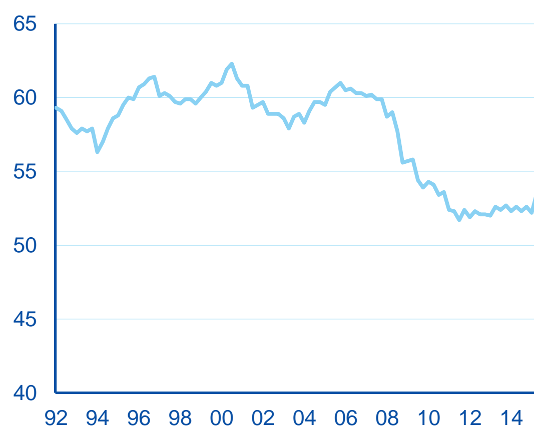
The amount of bank loans to nonfinancial corporate business fell sharply during the crisis, while debt securities took off as low interest rates allowed borrowers more access to the debt markets than before. While before the crisis, the two categories grew at roughly the same rate, the growth rates have diverged significantly since then and debt securities now make up 68.2% of the interest bearing liabilities of nonfinancial corporations, up roughly 10 % from the pre-2007 15 year average.

Chart 4
Nonfinancial Corporate Liabilities (in Billions $)



Source: Federal Reserve

Chart 5
Net Loans and Leases to Total Assets (%)



Source: FDIC

As interest rates normalize and the economy continues to steadily grow, it will bear watching how bank loan growth is impacted in relation to the bond market as it could signal that there has been a shift in behavior in the credit market.

A bright spot for loan demand could be in the retail segment as the domestic household sector has deleveraged significantly since the crisis and their levels of credit has not yet recovered its pre-crisis peak. As the unemployment rate continues to fall and average wage growth picks up, household borrowing should increase. Banks face less competition here currently and wider margins, so the performance for this sector should provide a lift in ROE. There are potential threats on the horizon from fintech businesses that offer a new approach to making loans such as Lending Club, OnDeck, or Prosper. However, fintech firms have never seen a rising rate environment, so their performance over the long run is uncertain. The arrival of rising rates, widening NIM, and increased interest income will not only provide tailwinds for ROE, but also give them more room to adapt to fintech competition.

Additional ROE Boosts: Non-interest Income and Expenses

ROE could also be boosted by increasing non-interest income or by lowering expenses. After a prolonged low rate environment, the banking industry has moved to maximizing their non-interest fee income to offset NIM compression, with the percentage of banks offering free checking falling to 37% and the average fee to use out of network ATM's rising 4% in 2015 to $2.88, up almost a dollar from $1.97 in 2008.[2] However, there have been restraints to the industry's ability to raise fee income, due to new regulation on transaction, overdraft fees and other consumer financial products. Non-interest income is roughly 60% the size of net interest income, and will be critical to driving ROE higher as it is a capital-light activity compared to making loans, making a marginal dollar of fee income more impactful than a marginal dollar of interest income on ROE. The rising rates environment will have disparate effects on non-interest income. On the positive side, a growing economy should increase

[2] Bankrate

loan origination volumes and other activities that generate fee income. On the other hand, rising rates could generate negative returns on banks security portfolio through the increase in the discount rate used to evaluate their cash flows, putting pressure on securities valuations. However, the effect of a steadily growing economy could offset this. Security held in bank portfolios currently make up roughly 20% of the industry's balance sheet.

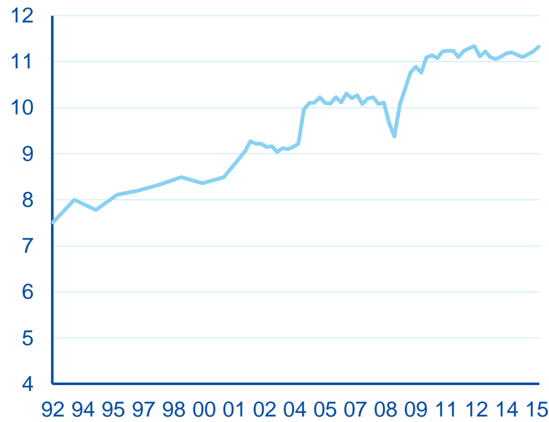
The lack of capital needed to produce non-interest income lowers the barriers to entry and this is the area of the bank that is going to see the most competition from fintech firms, such as in payments or financial advising. So going forward, the banking industry may face headwinds growing non-interest income, as regulatory pressures grow and fintech firms vie for market share.

Banks can boost their ROE not just by growing their fee generating activities and non-interest income, but also by decreasing their non-interest expenses. This is where harnessing the innovative potential of technology will make a difference. Technology will prove to be a powerful tool for banks as they will be able to reduce costs, gain efficiencies and reach more clients. Mobile and online banking will significantly reduce the amount of physical infrastructure needed to serve clients, reducing costs. Especially with higher regulatory and compliance expenses, the use of technology will be key to reduce expenses and grow ROE.

Capital, the Other ROE Factor

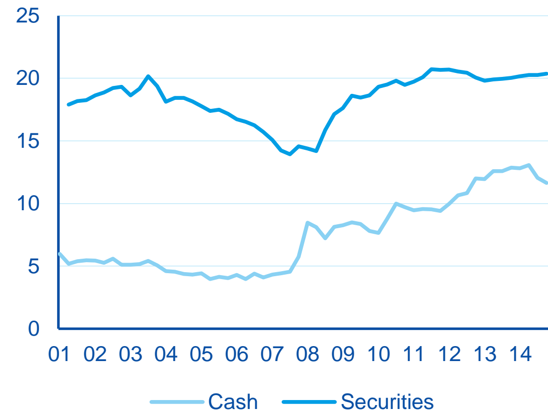
ROE is not only determined by the net income generated but also by the total amount of equity, or capital. The larger the amount of equity, the higher net income needs to be to generate the same level of ROE. Going forward, the amount of total equity banks are required to hold will be as important to the recovery in ROE as the NIM. Banks inherently operate with a high amount of leverage, having large amounts of deposits and other debt relative to their equity base. This magnifies the effect of gains on their ROE, but leverage also magnifies the effect of losses. The higher the amount of leverage a bank operates with, the lower the amount of losses it can withstand before it becomes insolvent. To lessen the probability and severity of banking crises, regulators have put in place several regulations aimed at reducing systemic risk. These regulations include Basel III regulatory capital standards that raise the minimum common equity tier one to risk-weighted assets ratio to 7% and a new absolute equity to asset ratio of 4%; this ratio ignores risk weighting, a practice that allows bank to adjust the amount of equity they need to hold against an asset depending on the riskiness of that holding. The aim of these new regulations is to increase the capital buffers to levels that will allow banks to be more resilient to any losses they may experience, with the ultimate end of strengthening the entire financial system. The largest banks, those declared Systemically Important Financial Institutions, face heightened regulation and increased capital buffers on top of what is required under Basel III of up to an additional 4.5% of their total assets to decrease the probability that they will fail and put at risk the broader financial sector. Altogether, while it is not clear what the long term effects of these regulatory changes will be, whether they have made the system safer, made lending more expensive, or reduced the supply of loans in the economy, mechanically from an accounting perspective, the increased amount of equity will increase the amount of income necessary to have the same effect on ROE compared to a lower amount of equity.

Chart 6
Equity Capital to Total Assets (%)



Source: FDIC

Chart 7
Cash & Securities on Balance Sheet (% of Total Assets)



Source: FDIC

The Need for Liquidity

In addition to rules on leverage ratios, regulators have introduced liquidity ratios. These rules will affect the composition, riskiness, and yield of the banking sector's assets and liabilities. The liquidity coverage ratio (LCR) dictates that a bank must have, at minimum, enough liquid and low risk assets that can meet 30 days of outflows in a stressed situation. The aim of this regulation is to prevent liquidity demands from prompting a fire sale of assets that would assert downward pressure on otherwise healthy assets at other banks and institutions. This regulation not only affects the asset composition of a bank, but also affects a bank's liabilities as it introduces incentives for banks to shift away from short term wholesale funding of their balance sheets, as this so-called *hot money* is assumed to be withdrawn very quickly in a stressed scenario. Regulation requires banks to weight the value of this funding more when calculating the amount of liquid assets needed to cover 30 days of withdrawals.

LCR regulation introduced headwinds to ROE expansion. On the asset side of the balance sheet, low risk and highly liquid assets, such as cash and U.S. Treasury securities, are lower yielding than traditional loans and an increased demand by institutions to hold such instruments will add downward pressure to the yield on these instruments, even as rates rise. Holding the necessary amount of liquid assets will put pressure on the NIM and on net income. On the funding side, short-term debt has many desirable qualities, being cheap and flexible, making it easy for an institution to optimize their balance sheet. Moving away from the use of short-term debt will leave banks with three options to fund and grow their assets; increase core deposits, issue longer term debt, or use more equity to finance their assets.

The core deposits market is going to become a very competitive marketplace for individual banks, since of the three options it is the most attractive from an ROE perspective, as it is less expensive; though the overall level of deposits is still subject to leverage ratios. Deposits should grow steadily,

though it is also unpredictable as banks cannot directly raise deposits, but rather have to attract clients. There is also the risk that non-bank competitors, such as fintech firms, are able to attract customers, putting pressure on the ability of banks to raise deposits in the same way that they used to. The way to stay ahead of this trend is to focus on using technology and brand awareness to enhance the perception of banks in the public mind. In addition, technology will allow banks to reach depositors without the need to have significant physical infrastructure, lowering costs and broadening their pool of potential clients.

Issuing long term debt allows for more control over the timing of fund raising, but will generate more interest expense than short term debt because of the necessary term premium to compensate investors. However, because of the debt's longer tenor, it is not counted under LCR regulations as an outflow. With long term borrowing rates still historically low, the use of long term debt will be an attractive part of the funding structure, though it still increases leverage and is not as flexible to issue compared to short term debt.

The other option to optimize the LCR on the funding side is to retain more earnings or to increase equity issuances of common and preferred stock. However, equity has a higher marginal cost of capital than debt capital, with investors requiring a higher return on their investment. Equity adds no outflows to the LCR calculation, so increased funding by equity is not restricted by the need to hold high quality liquid assets, and higher equity levels increase the amount of total capital. Increasing the amount of equity will push down ROE so it will be a tradeoff between capital and ROE.

So while the regulations put into place after the financial crisis aim to make banks more stable and less likely to pose a systemic risk to the economy, they have added to the low rate headwinds that have lowered the banking industry's ROE. An improving economy and rising rates will provide relief as increased margins will diminish the pressure the LCR ratio puts on ROE.

The Way Ahead

Our baseline interest rate forecast for the next five years projects a slow and shallow rise in interest rates and the persistence of a flat yield curve with steady GDP growth averaging around 2.3%. We project that with these economic conditions we will see a steady improvement in bank profitability, particularly in the net interest margin.

When it comes to the NIM, we expect rising interest rates to increase the margin from 3.0% to around 3.6% in 2019. This is driven by higher interest revenue that outpaces interest expenses that are less sensitive to rising rates; though interest expense growth should start outpacing revenue growth beginning in 2019 as the yield curve becomes very flat and rate changes slow down. We expect provisions for bad loans to begin to increase relatively soon as provision releases to support net income in the years after the crisis have left the allowance for loan and lease losses account at low levels relative to total loan volumes. We expect non-interest income to increase slightly over the forecast period, at around 1.3% a quarter, as a growing economy support fee income generating activity. Non-interest expense is expected to grow at its 15 year average of 1.1% as increased compliance and regulatory costs offset declining spending on physical premises and risks of downsides such as goodwill impairment or legal risks should diminish.

On the asset side of the balance sheet, we project net loans to average 1.6% quarterly growth, above the average of 1.0% recorded since 2010, as steady improvement in the economy drive demand for loans and solid bank balance sheets support. Nevertheless, growth levels should be slower than the pre-crisis average of around 2.3% due to increased equity capital requirements. Commercial and industrial loans have seen the most growth since the crisis, while real estate loans have been roughly flat. As the economy improves, housing and other real estate demand should strengthen so we would expect to see increased growth in the real estate category. Overall, total asset growth is projected to expand at an average rate of 1.7% a quarter, below the pre-crisis growth rate of 2.3% but above recent trend growth of around 1%, to reach a total asset size of just under $21 trillion at the end of 2020.

On the other side of the balance sheet, we expect to see deposits maintain their current proportion to assets of around 75.5% for the next few years. Interest expenses will increase slower than interest income as banks re-price the rates they pay on deposits slowly in order to widen the currently narrow net interest margin. In regards to leverage, we expect that regulations will continue to require banks to hold higher levels of equity relative to assets. Therefore we project that equity capital levels relative to assets will continue to slowly rise as banks aim for a prudent buffer above the regulatory minimum level. This permanent increase in equity levels is critical to ROE. A higher total level of equity will reduce ROE, so even with a rebound in the net interest margin and higher levels of profitability, a higher level of equity puts significant downward pressure on the industry's return on equity.

With all this factors into consideration, our forecast does not project a return to the pre-crisis trend of ROE in the mid-teens; instead quarterly ROE looks to top out at just below 9.7% next year before leveling out between 8.8-9% through 2020.

For individual banks, the industry landscape continues to look challenging as they will have to continue to adapt to regulatory requirements and deal with significant bank and nonbank competition for loans and deposits. Increasing non-interest fee income from various sources will continue to be a significant driver of higher ROE, as it able to be generated with little capital support. On the asset side, finding the right balance between liquid and safe assets to satisfy liquidity one hand and taking an appropriate amount of risk in the selection of assets to ensure a high enough yield while meeting both absolute and risk adjusted leverage requirement on the other hand will be challenging. Some banks will be winners and some will be losers.

In order to set the conditions for success, banks have to seize the opportunity to embrace the advantages of technology. Technology will provide an increase in operational leverage for banks by being able to enhance the experience current clients receive and allow them to reach out and serve more potential clients. Allocating capital into the right technological investments will reap strong returns in terms of overall client satisfaction, non-interest income, and expense control for the banks that are able to seize the opportunity.

Bottom line:

ROE has been depressed because of low rates and a flat yield curve that hurts the return that banks get from taking deposits and making loans. A rising rate environment will improve ROE; however, not all the headwinds that have held back ROE are dissipating with a rise in rates. The forecasted interest rate path looks to be gradual and while the economy continues to improve, the growth rate looks to maintain its measured pace over the next five years. Moreover, even as margin expansion and increased loan demand increase profitability, ROE will continue to be under pressure from post-crisis regulations concerning liquidity, asset composition and both risk adjusted and total leverage that are intended to strengthen the balance sheet and lower the risk of banks. More equity capital decreases the likelihood of bank failure in a stressed situation and liquidity requirements, but will serve to decrease ROE. Risk buffers and liquidity requirements will push banks to hold higher proportion of safer but lower yielding assets on their balance sheet, decreasing net income. It will be innovation through the application of technology in the non-interest expense and income category that will the main differentiators between winners and losers of the ROE race.

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