Banking sector: Healthy balance sheets but slowing credit growth and rising subprime delinquency rates are worrying signs

March 2017

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New York, New York 10005
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Earnings, profitability and net interest margins
Banking sector quarterly net income currently at the same level as in 2005 and 2006

$ bln

All FDIC institutions

- Net operating income
- Securities gains/losses

Source: FDIC, Haver Analytics, DB Global Markets Research

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Return on assets near 2007 levels

Return on Assets

Source: FDIC, DB Global Markets Research
Return on equity close to 2007 level

Source: FDIC, DB Global Markets Research
Trends in FDIC-insured institutions' income and expenses: loss provisioning at 2006 levels

Source: FDIC, DB Global Markets Research
Loss allowance by bank size

Condition Ratios By Asset Size
Loss allowance to loans and leases by bank asset size, 2016 Q4

Source: FDIC, DB Global Markets Research
Quarterly cost of funding earning assets trending down

Cost of funding earning assets

- Assets > $1 bln
- Assets < $1 bln

Source: FDIC, DB Global Markets Research
Non-interest income as a share of total revenue

Non-interest income as a % of net operating revenue

Source: FDIC, DB Global Markets Research
Quarterly yield on earning assets trending down

Yield on earning assets

Source: FDIC, DB Global Markets Research
NIM basically at the same level today as in 2007

Net interest margins for small and large banks

Source: FDIC, DB Global Markets Research
NIM highest for credit card loans

Net interest margins (YTD) 2016-Q4

Source: FDIC, DB Global Markets Research
Utilization rates of loan commitments moving sideways

Utilization rates of loan commitments

- Credit cards
- Commercial & industrial & other
- Home equity
- Nonfarm nonresidential real estate

*Utilization rates represent outstanding loan amounts as a % of unused loan commitments plus outstanding loan amounts.

Note: Credit cards include on-balance-sheet loans & off-balance-sheet securitized receivables.

Source: FDIC, DB Global Markets Research

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Losses, charge-offs and quality of bank credit
Composition of assets and liabilities in US banks

Source: FRBNY, DB Global Markets Research
Net interest income as % of interest earnings assets

Annualized net interest income as % of interest earning assets

- BHCs > $500bn
- BHCs $50bn-500bn
- All institutions
- Banks and BHCs <$50bn

Source: FRBNY, DB Global Markets Research
Balance sheet repair almost complete in the banking sector

**Total non-performing loans as % of total loans**

- BHCs>$500bn
- BHCs $50bn-500bn
- All institutions
- Banks and BHCs<$50bn

Note: Non-performing loans include loans that are (1) 90 days or more past due and still accruing or (2) non-accrual.

Source: FRBNY, DB Global Markets Research
Non-performing real estate loans declining

Non-performing residential real estate loans as % of real estate loans

- BHCs $50bn-500bn
- Banks and BHCs <$50bn
- All Institutions
- BHCs > $500bn

Note: Non-performing loans include loans that are (1) 90 days or more past due and still accruing or (2) non-accrual.

Source: FRBNY, DB Global Markets Research
Non-performing commercial real estate loans back at 2005-2006 levels

Non-performing commercial real estate loans as % of commercial real estate loans

- BHCs $50bn-500bn
- Banks and BHCs <$50bn
- BHCs > $500bn
- All Institutions

Note: Non-performing loans include loans that are (1) 90 days or more past due and still accruing or (2) non-accrual.

Source: FRBNY, DB Global Markets Research

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Non-performing C&I loans moving up recently as a result of lower energy prices

Non-performing C&I loans as % of C&I loans

Note: Non-performing loans include loans that are (1) 90 days or more past due and still accruing or (2) non-accrual.

Source: FRBNY, DB Global Markets Research
Non-performing consumer loans below 2006 levels

Non-performing consumer loans as % of consumer loans

- BHCs $50bn-500bn
- Banks and BHCs <$50bn
- All Institutions
- BHCs > $500bn

Note: Non-performing loans include loans that are (1) 90 days or more past due and still accruing or (2) non-accrual.

Source: FRBNY, DB Global Markets Research

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Loan loss reserves trending higher

Loan loss reserves as % of non-performing loans

- BHCs $50bn-500bn
- Banks and BHCs <$50bn
- All Institutions
- BHCs > $500bn

Note: Non-performing loans include loans that are (1) 90 days or more past due and still accruing or (2) non-accrual.

Source: FRBNY, DB Global Markets Research

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Tier 1 risk-based capital high

Tier 1 risk-based capital as % of average total assets

Source: FRBNY, DB Global Markets Research
Risk-weighted assets coming down recently

Risk-weighted assets as % of total assets

Source: FRBNY, DB Global Markets Research
Repo as a % of total bank assets

Repurchase agreements as % of total assets

Source: FRBNY, DB Global Markets Research
Capital ratios solid

Source: FDIC, DB Global Markets Research

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Tangible equity rising

Equity capital and reserves FDIC-Insured commercial banks and savings Institutions

Source: FDIC, DB Global Markets Research
Net loans and leases to deposits trending higher

Source: FDIC, DB Global Markets Research
Quarterly change in reported total loans outstanding
Reserve coverage ratio moving up

Source: FDIC, DB Global Markets Research

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Credit card loss rates and personal bankruptcy filings very low

Net credit card charge-off rates (ls)
Personal bankruptcy filings (rs)

Source: FDIC, DB Global Markets Research
Net charge-offs and loan loss provisions are much lower than in 2009

Source: FDIC, DB Global Markets Research

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Composition of loan charge-offs, 2016Q4: Credit cards the biggest part

- Other Consumer
- Credit Cards
- Real Estate
- Commercial & Industrial
- All Other

Note: % of credit loss

Source: FDIC, DB Global Markets Research
Quarterly change in home equity loans outstanding still negative

Source: FDIC, DB Global Markets Research

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Home equity and junior lien loans outstanding below 2006 levels

Source: FDIC, DB Global Markets Research
Lower noncurrent rates on first-lien mortgages

Noncurrent rates on loans secured by 1-4 family residential properties

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<td>First lien mortgages</td>
<td>0%</td>
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<td>4%</td>
<td>6%</td>
<td>8%</td>
<td>10%</td>
<td>12%</td>
<td>6%</td>
<td>2%</td>
<td>0%</td>
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<tr>
<td>Closed-end junior lien mortgages</td>
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<td>8%</td>
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<td>2%</td>
<td>0%</td>
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<td>Home equity lines of credit</td>
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<td>0%</td>
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Source: FDIC, DB Global Markets Research
Credit quality of residential mortgage loans has improved.

Credit quality of residential mortgage loans
- Quarterly net charge-offs
- Quarterly change in noncurrent loans

Source: FDIC, DB Global Markets Research
Downward trend in number of institutions with construction loan concentrations (construction loans exceed total capital)

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<td>2015</td>
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<td>2016</td>
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Source: FDIC, DB Global Markets Research
Noncurrent rate on real estate construction and development loans coming down fast

Source: FDIC, DB Global Markets Research
Median construction and development loan concentrations moving sideways

% of total risk based capital, by lender asset size

* Data represents Q3-2015

Source: FDIC, DB Global Markets Research

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Student loan debt outstanding now above $1trn…

Total debt balance

- Home equity
- Auto loan
- Credit cards
- Student loan

Source: FRB New York Household Debt and Credit Report, DB Global Markets Research

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...but that is a small number considering that total household net worth is around $90tn…

Households & nonprofit organizations: net worth

Source: FRB, Haver Analytics, DB Global Markets Research
...and student loans not a macro problem: Only 8% of the population have student loan debt higher than $20,000

Variable distribution: total balance on student loans

Source: FICO, DB Global Markets Research
US credit conditions
Demand for C&I loans steady

FRB sr off survey: banks reporting stronger demand for C&I loans

Source: FRB, Haver Analytics, DB Global Markets Research
Credit conditions back to neutral

FRB sr officers survey: banks tightening C&I loans

Source: FRB, Haver Analytics, DB Global Markets Research
Harder to get a commercial real estate loan recently

FRB sr loan survey: res Mortgages: net share, banks tightening (ls)
FRB sr loan off survey: tightening standards for commercial real estate (rs)

Source: FRB, Haver Analytics, DB Global Markets Research
Banks’ willingness to lend slowing recently

FRB sr officers survey: banks willingness to lend to consumers

Source: FRB, Haver Analytics, DB Global Markets Research
2016Q4: Banks less willing to lend and consumers less interested in borrowing

Source: FRB, Haver Analytics, DB Global Markets Research
Credit conditions tightening for consumer loans recently

Sr loan off survey: banks tightening standards on consumer loans excluding credit cards (ls)

FRB sr off survey: banks tightening standards: consumer credit cards(rs)

Source: FRB, Haver Analytics, DB Global Markets Research
Rising trend in credit card delinquencies is worrying

Delinquent loans: credit cards

Source: FRB, Haver Analytics, DB Global Markets Research
Cov-lite share of outstanding and newly issued institutional loans

Source: S&P LCD, DB Global Markets Research
Household debt levels look healthy

Per capita debt balance

- Auto loan
- Credit card
- Student loan

Average per capita balance outstanding:
- Student loan: $4920
- Credit card: $2920
- Auto loan: $4340

Source: FRBNY, Equifax, DB Global Markets Research
Auto loans: Delinquency rates up for subprime and flat for everyone else

Flow into 90+ delinquency by credit score at origination, 4-q moving average

Source: New York Fed Consumer Credit Panel / Equifax, DB Global Markets Research
Auto loan origination: Modestly higher for subprime and a lot higher for everyone else

Auto loan originations by credit score

Source: New York Fed Consumer Credit Panel / Equifax, DB Global Markets Research
Outstanding auto loan balances:
Around $300bn for subprime and $900bn for others

Source: New York Fed Consumer Credit Panel / Equifax, DB Global Markets Research

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Growth of credit
Slowdown in bank lending is probably just the lagged effect of higher dollar and lower oil

Source: FRB, ISM, Haver Analytics, DB Global Markets Research
Credit growth slowing modestly

Commercial bank loans

- Total loans
- C&I
- Real Estate loans
- Consumer loans

Source: FRB, Haver Analytics, DB Global Markets Research

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Banks have been growing their balance sheets since 2011

Source: FRB, Haver Analytics, DB Global Markets Research
Delinquency rates at low levels

Loan delinquency rate: all insured commercial banks

- Consumer loans
- Real estate loans
- C&I loans

Source: FRB, Haver Analytics, DB Global Markets Research
Nonrevolving consumer credit growing steadily

USD bln

- Nonrevolving consumer credit outstanding
- Consumer revolving credit outstanding

Source: FRB, Haver Analytics, DB Global Markets Research
Credit card debt outstanding lower than in 2006

S&P: US credit card quality index: private-label and bankcards: outstandings

Source: S&P, Haver Analytics, DB Global Markets Research

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Credit card delinquency rate rising a bit recently

S&P: US credit card quality index: bankcards: 1-month delinquency rate

Source: S&P, Haver Analytics, DB Global Markets Research
Interest rates on car loans near all-time lows

Commercial bank interest rates: 48-month new car loans

Source: FRB, Haver Analytics, DB Global Markets Research

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Real estate loan growth rates solid

Real estate loan growth rates

- Construction and land development loans
- Nonfarm non residential loans
- 1-4 family residential property loans

Source: FDIC, DB Global Markets Research
Structure of the US Banking sector
Total banking sector liabilities down 75%-points of GDP since 2008

Total liabilities as percentage of nominal GDP

Source: FRB, BEA, Haver Analytics, DB Global Markets Research
Number of institutions by asset size, 2016-Q4

Source: FDIC, DB Global Markets Research
Industry assets by asset size, 2016Q4

- Less than $100 Million: 0.6%
- $100 Million to $1 Billion: 7.0%
- $1 Billion to $10 Billion: 10.5%
- $10 Billion to $250 Billion: 31.6%
- Greater than $250 Billion: 50.3%

Source: FDIC, DB Global Markets Research
Real estate assets constitute close to 40% of total assets

Real Estate Assets as a Percent of Total Assets, Q4-2016

- All Other Real Estate Loans & Investments in Real Estate: (Including OREO), 3.83%
- All Other Real Estate Owned, 0.07%
- 1-4 Family Residential Property Loans, 14.48%
- Mortgage-Backed Securities, 11.95%
- Nonfarm Nonresidential Loans, 7.89%
- Construction & Land Development Loans, 1.87%
- Other Assets Net of Reserves, 59.93%

Source: FDIC, DB Global Markets Research
Loan portfolio composition, 2016Q4

Source: FDIC, DB Global Markets Research
Loan portfolio composition by asset size: banks with assets < $1bn, 2016-Q4

- Mortgages Residential, 28%
- Loans Real Estate Nonfarm Nonresidential, 29%
- Other Consumer, 4% Credit Cards, 0%
- Loans All Other, 15%
- Construction, 7%
- Leases, 0%
- Agriculture, 5%
- Commercial &Industrial, 13%

Source: FDIC, DB Global Markets Research
Loan portfolio composition by asset size:
banks with assets > $1bn, 2016-Q4

- Loans All Other, 22%
- Commercial & Industrial, 22%
- Construction, 3%
- Leases, 1%
- Agriculture, 0%
- Other Consumer, 9%
- Credit Cards, 9%
- Mortgages Residential, 21%
- Real Estate Nonfarm, 12%
- Nonresidential, 12%

Source: FDIC, DB Global Markets Research
Number of FDIC-insured “problem” institutions coming down

Source: FDIC, DB Global Markets Research
Assets of FDIC-insured problem institutions coming down

Source: FDIC, DB Global Markets Research

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Banking sector liabilities
Total liabilities & equity capital components, Q4-2016
% of total liabilities

- Uninsured Deposits: 36%
- Insured Deposits: 41%
- Other Borrowed Funds: 8%
- Equity Capital: 11%
- All Other Liabilities: 4%

*Excludes insured deposits in US. Branches of foreign banks. Beginning 09/30/09, these estimates include the insurance coverage increase to $250,000. Beginning 12/31/10, estimates include temporary unlimited coverage for noninterest-bearing transaction accounts.
** Other borrowed funds include federal funds purchased, securities sold under agreement to repurchase, FHLB and FRB borrowings and indebtedness

Source: FDIC, DB Global Markets Research
Senior Credit Officer
Opinion Survey on Dealer Financing Terms
Neutral price terms

Respondents tightening price terms to:

+ This question was added in the September 2011 survey
* Includes mutual funds, ETFs, pension plans, and endowments

Source: FRB Senior Credit Officer Opinion Survey on Dealer Financing Terms, DB Global Markets Research
Neutral non-price terms

Respondents tightening non-price terms to:

<table>
<thead>
<tr>
<th>Year</th>
<th>Hedge funds</th>
<th>Trading REITs+</th>
<th>Mutual funds*+</th>
<th>Insurance companies</th>
<th>Separately managed accounts+</th>
<th>Nonfinancial corporations</th>
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+ This question was added in the September 2011 survey
* Includes mutual funds, ETFs, pension plans, and endowments

Source: FRB Senior Credit Officer Opinion Survey on Dealer Financing Terms, DB Global Markets Research

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Leverage stable recently

Respondents reporting increased use of leverage by:

Source: FRB Senior Credit Officer Opinion Survey on Dealer Financing Terms, DB Global Markets Research
Leverage stable in mutual funds

Respondents reporting increased use of leverage by:

Source: FRB Senior Credit Officer Opinion Survey on Dealer Financing Terms, DB Global Markets Research
Demand for funding of equities up recently

Respondents reporting increased demand for funding of:

- High-grade corporate bonds
- High-yield corporate bonds+

- Agency RMBS
- Non agency RMBS+

- Equities
- CMBS+

- Consumer ABS+

Source: FRB Senior Credit Officer Opinion Survey on Dealer Financing Terms, DB Global Markets Research

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+ This question was added in the September 2011 survey
Improving liquidity in consumer ABS and non-agency RMBS recently

Respondents reporting an improvement in liquidity and functioning in the underlying markets for:

- Agency RMBS
- Non-agency RMBS
- Consumer ABS

Source: FRB Senior Credit Officer Opinion Survey on Dealer Financing Terms, DB Global Markets Research

+ This question was added in the September 2011 survey
Respondents reporting an improvement in liquidity and functioning in the underlying markets for:

- High-grade corporate bonds
- High-yield corporate bonds
- CMBS

Source: FRB Senior Credit Officer Opinion Survey on Dealer Financing Terms, DB Global Markets Research

+ This question was added in the September 2011 survey

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Peter Hooper

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- **Peter Hooper** is currently Managing Director and Chief Economist for Deutsche Bank Securities. He joined Deutsche Bank Securities in the fall of 1999, first as Chief International Economist and shortly thereafter as Chief US Economist. He became Chief Economist and co-head of global economics in 2006. Prior to joining Deutsche Bank, Hooper enjoyed a distinguished 26-year career at the Federal Reserve Board in Washington, D.C. While rising to senior levels of the Fed staff, he held numerous positions, including as an economist on the FOMC and as Deputy Director of the Division of International Finance.

- Hooper produces weekly and quarterly publications for Deutsche Bank with a focus on US and global economic developments and Fed policy; he also comments on US and global economic and financial developments in the news media. His US Economics team has been ranked No. 1 in fixed income research by Institutional Investor in 2010 and 2011. Hooper currently serves as a member of the Economic Advisory Panel of the Federal Reserve Bank of New York, a member and former chairman of the Economic Advisory Committee of the American Bankers Association, a founding member of the US Monetary Policy Forum, a member of the Economic Leadership Council for the University of Michigan, and a member of the Forecasts’ Club of New York.

- Hooper earned a BA in Economics (cum laude) from Princeton University and an MA and Ph.D. in Economics from University of Michigan. He has published numerous books, journal articles, and reviews on economics and policy analysis.
Torsten Slok, Ph.D.

- Chief International Economist, Managing Director
- Deutsche Bank Securities, Inc.

- Torsten Slok joined Deutsche Bank Securities in the fall of 2005.
- Mr. Slok’s Economics team has been ranked Top 3 by Institutional Investor for the past three years (in fixed income and equities). Slok currently serves as a member of the Economic Club of New York.
- Prior to joining the firm, Mr. Slok worked at the OECD in Paris in the Money and Finance Division and the Structural Policy Analysis Division. Before joining the OECD he worked for four years at the IMF in the Division responsible for writing the World Economic Outlook and the Division responsible for China, Hong Kong, and Mongolia.
- Mr. Slok studied at University of Copenhagen and Princeton University. He has published numerous journal articles and reviews on economics and policy analysis, including in Journal of International Economics, Journal of International Money and Finance, and The Econometric Journal.
Matthew Luzzetti received a Ph.D. in Economics from the University of California, Los Angeles, focusing on macroeconomics. Prior to that he worked as a research analyst at the Federal Reserve Bank of Philadelphia. Matt joined Deutsche Bank in September 2012 and is part of DB's top II ranked economics team.
Appendix 1
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*Other Information Available upon Request

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**Buy:** Based on a current 12-month view of total shareholder return (TSR = percentage change in share price from current price to projected target price plus projected dividend yield), we recommend that investors buy the stock.

**Sell:** Based on a current 12-month view of total shareholder return, we recommend that investors sell the stock.

**Hold:** We take a neutral view on the stock 12 months out and, based on this time horizon, do not recommend either a Buy or Sell.

Newly issued research recommendations and target prices supersede previously published research.

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Equity Rating Dispersion and Banking Relationships

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<th>Sell</th>
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<td>48%</td>
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