



Member FINRA/SIPC

Money Centers

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Key Themes for 2017

- Credit Inflection Point
- European Recapitalization
- Spread Widening Trade Returns
- Interest Rate/Inflation Spike
- Central Bank Withdrawal
- Debate over US Economic Strength/Fiscal Stimulus

Key Secular Theme

Debt Spread Widening

1. Junk debt (versus Treasuries)
2. Emerging market debt (versus industrials)
3. Peripheral sovereign European debt (versus Bunds)

High Real Rates of Interest

1. Inflation remains low
2. Nominal rates rise

Higher Debt Service Burdens Impinge on Corporate Margins/Cash Flow

1. Double digit financing costs
2. Low single digit revenue generation (at best); no pricing power

Asset Sale Difficulties

1. Deleveraging within a deflating asset class (Glencore, Petrobras, Noble, Vereit, Freeport, etc.)

Currency Risks

1. Revenue from one currency; financing in another (cross currency basis swaps)
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Q2'17 EARNINGS EXPECTATIONS

Bank of America (BAC)

<i>in \$B's</i>	Q2'17 Compass Estimate	Q2'17 "Street" Estimate	Q1'17 Actual	Q2'16 Actual	YoY % Change	QoQ % Change
Total Revenue	\$22.2	\$22.3	\$22.4	\$21.5	3.0%	-1.3%
Net Interest Income	\$11.5	\$11.4	\$11.3	\$10.3	11.4%	2.4%
Fee Income	\$10.6	\$10.9	\$11.2	\$11.2	-4.8%	-5.0%
Loan Loss Provisions	\$1.1	\$1.0	\$0.8	\$1.0	12.7%	31.7%
Non-Interest Expense	\$13.4	\$13.4	\$14.6	\$13.2	1.0%	-8.3%
Litigation Expense	\$0.3	\$0.0	\$0.3	\$0.3	-7.4%	-8.8%
Pretax Profit	\$7.4	\$8.0	\$6.8	\$7.0	5.7%	10.0%
Net Income - adj.	\$5.2	\$5.1	\$4.9	\$4.8	8.9%	7.2%
EPS	\$0.45	\$0.47	\$0.41	\$0.41	9.8%	9.8%
Average Earning Assets	\$1,905	\$1,905	\$1,895	\$1,868	2.0%	0.5%
Average Loans	\$923	\$922	\$914	\$899.7	2.6%	1.0%
Net Interest Margin	2.42%	2.41%	2.39%	2.23%	19	3
Net Charge-Offs	\$1.0	\$1.0	\$0.9	\$1.0	1.5%	7.1%
Tang. Book Value	\$17.60	\$17.64	\$17.23	\$16.71	5.3%	2.1%

Quick Observations

Unusual Items:

- \$0.25B (pretax) of legal costs (\$0.01 a sh.)
- CVA/DVA not incl. in EPS
- No loan loss reserve build.

Key Themes – ROA/PPNR Targets; "Expense Reduction Efforts vs. Investment Needs" and "Capital Returns" and "NII Leverage to Yield Curve" and "Revenues". Can you grow and cut?

- ROA of 80-90bps; targeting 1.00%
- Project New BAC done and LAS Expense saves ending
- Litigation costs likely peaked in '14; ongoing @ less than \$1B/yr.
- Higher LT rates helped NII in 2H'16; ST benefit NII in 1Q'17/Q2'17; "Optionality" peak in Q2'16. Diminishing Returns.
- EPS leverage from swing in MBS amort./deposit margins/Consumer
- Capital return improved to \$8.1B in '16 vs. \$5.3B in '15.
- Need revenue growth to offset higher L.L. Provisions
- Operating Exp. Falling toward \$53B in '18.
- Need to see sequential improvement in PPNR

Citigroup (C)

<i>in \$B's</i>	Q2'17 Compass Estimate	Q2'17 "Street" Estimate	Q1'17 Actual	Q2'16 Actual	YoY % Change	QoQ % Change
Total Revenue	\$17.8	\$17.7	\$18.1	\$17.6	1.2%	-1.8%
Net Interest Income	\$11.5	\$11.2	\$10.9	\$11.3	2.1%	5.9%
Fee Income	\$6.3	\$6.5	\$7.3	\$6.3	-0.4%	-13.4%
Loan Loss Provisions	\$1.8	\$1.8	\$1.7	\$1.4	28.6%	6.7%
Non-Interest Expense	\$10.5	\$10.3	\$10.4	\$9.9	5.8%	0.8%
Litigation Expense	\$0.2	\$0.0	\$0.0	\$0.3	-38.5%	
Repositioning Charges	\$0.2	\$0.0	\$0.1	\$0.1	19.0%	50.0%
Pretax Profit	\$5.2	\$5.6	\$5.5	\$5.8	-11.7%	-5.7%
Net Income - adj.	\$3.6	\$3.5	\$4.1	\$4.0	-10.7%	-12.2%
EPS	\$1.21	\$1.27	\$1.35	\$1.25	-3.2%	-10.4%
Average Earning Assets	\$1,622	\$1,631	\$1,625	\$1,595	1.7%	-0.2%
Average Loans	\$625	\$634	\$623	\$620.6	0.7%	0.3%
Net Interest Margin	2.86%	2.78%	2.74%	2.86%	0	12
Net Charge-Offs	\$1.9	\$1.7	\$1.7	\$1.6	15.4%	9.1%
Tang. Book Value	\$66.90	\$67.00	\$65.94	\$63.53	5.3%	1.5%

Quick Observations

Unusual Items:

- \$0.25B (pretax) of legal costs (\$0.02 a sh.).
- \$0.15B (pretax) of restructuring costs (\$0.01 a sh.)
- CVA/DVA not incl. in EPS
- \$100M (pretax) of loan loss reserve releases (\$0.01 a sh.).

Key Themes - "Growth Resumes in Back Half of '17" and "Restructuring Ended" and "Risk Management in Corporate Bank Key" and "Trapped Capital and ROE Goals"; What was strictly a capital liquidation story, may be an EPS growth story. Cards key.

- Citicorp must show positive operating leverage in:
 1. Transaction Services (vol. vs. NIM)
 2. North American Consumer Bank (Cards)
 3. Latin American Consumer Bank (Mexico)
 4. Asian Consumer Bank (regulatory rules easing)
- Citicorp must be able to transition from over-reliance on FICC (restructuring equity platform)
- Risk taking has shifted along new team (cap. mkts vs. cons.).
- Asian/Emerging markets/strong dollar could be drags
- Citi Holdings must reduce negative gap between revenues and expenses; being folded into Citicorp
- Turbo-charge the creation of capital by using DTAs; FTCs at risk
- Capital is trapped thru mid-decade period; 9%-10% ROE now ST goal

Quick Observations

Unusual Items:

- \$0.2B of legal costs
- CVA/DVA charge not incl. in EPS
- No loan loss reserve build

Key Themes - "Consumer Bank Growth" and "Regulatory Reparation Relations" and "Managing Transitions" and "Revenue Growth a Challenge"

- Card investments need to pay off
- Consumer Bank growth faces deposit beta challenge.
- Mortgage revival uncertain
- WM faces secular pressures
- Must be able to replace the revenue stream from the FICC cycle as debt spreads widen.
- Must adjust to the normalization of credit costs
- Execute a growth strategy
- Capital Returns Shift. How Justify Buybacks?

JP Morgan Chase (JPM)

<i>in \$B's</i>	Q2'17 Compass Estimate	Q2'17 "Street" Estimate	Q1'17 Actual	Q2'16 Actual	YoY % Change	QoQ % Change
Total Revenue	\$25.2	\$25.6	\$25.0	\$24.7	1.9%	0.6%
Net Interest Income	\$12.9	\$12.8	\$12.4	\$11.7	10.3%	3.7%
Fee Income	\$12.3	\$12.8	\$12.6	\$13.0	-5.6%	-2.4%
Loan Loss Provisions	\$1.2	\$1.3	\$1.3	\$1.4	-12.3%	-6.5%
Non-Interest Expense	\$14.2	\$14.5	\$14.8	\$14.1	1.1%	-3.9%
Litigation Expense	\$0.2	\$0.0	\$0.2	-\$0.4	NM	NM
Pretax Profit	\$9.5	\$9.7	\$8.7	\$9.2	3.2%	9.7%
Net Income - adj.	\$6.6	\$6.0	\$6.4	\$6.2	5.8%	1.8%
EPS	\$1.69	\$1.65	\$1.65	\$1.55	9.0%	2.4%
Average Earning Assets	\$2,183	\$2,180	\$2,161	\$2,080	5.0%	1.0%
Average Loans	\$914	\$909	\$892	\$859.7	6.3%	2.5%
Net Interest Margin	2.36%	2.35%	2.33%	2.25%	11	3
Net Charge-Offs	\$1.2	\$1.3	\$1.7	\$1.2	4.1%	-25.6%
Tang. Book Value	\$52.93	\$52.85	\$52.04	\$50.21	5.4%	1.7%

Q1'17 EARNINGS REPORTS

Bank of America



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Bank of America (BAC)

<i>in \$B's</i>	Q1'17 Actual EPS	Q1'17 Compass Estimate	Q1'17 "Street" Estimate	Q4'16 Actual	Q1'16 Actual	YoY % Change	QoQ % Change
Total Revenue	\$22.4	\$22.2	\$21.9	\$20.2	\$21.0	6.9%	11.0%
Net Interest Income	\$11.3	\$11.2	\$11.1	\$10.5	\$10.7	5.2%	6.9%
Fee Income	\$11.2	\$11.0	\$10.7	\$9.7	\$10.3	8.6%	15.4%
Loan Loss Provisions	\$0.8	\$1.0	\$1.0	\$0.8	\$1.0	-16.2%	7.9%
Non-Interest Expense	\$14.6	\$14.3	\$14.5	\$12.9	\$14.4	1.0%	12.8%
Litigation Expense	\$0.3	\$0.3	\$0.0	\$0.2	\$0.4	-29.4%	11.4%
Pretax Profit	\$6.8	\$6.6	\$6.4	\$6.29	\$5.2	30.2%	7.5%
Net Income - adj.	\$4.9	\$4.6	\$3.8	\$4.7	\$3.5	39.9%	3.4%
EPS	\$0.41	\$0.37	\$0.34	\$0.40	\$0.28	46.4%	2.5%
Average Earning Assets	\$1,895	\$1,893	\$1,895	\$1,884	\$1,845	2.7%	0.6%
Average Loans	\$914	\$917	\$916	\$908.4	\$899.7	1.6%	0.6%
Net Interest Margin	2.39%	2.36%	2.38%	2.23%	2.33%	6	16
Net Charge-Offs	\$1.0	\$1.0	\$1.0	\$0.9	\$1.1	-8.7%	10.8%
Tang. Book Value	\$0.93	\$17.20	\$17.25	\$16.95	\$16.19	-94.2%	-94.5%

Quick Observations

Unusual Items: Core EPS = \$0.42 a sh.

- \$0.3B (pretax) of legal costs (\$0.01 a sh.)
- \$200M of tax benefits (\$0.02 a sh.)
- \$99M of loan loss reserve release.
- \$1.4B of equity incentive awards/tax costs.

Key Themes – ROA Targets; "Expense Reduction Efforts" and "Capital Returns" and "NII Leverage to Yield Curve" and "Revenues"

- ROA of 80-90bps; targeting 1.00%
- Project New BAC done and LAS Expense saves ending
- Litigation costs likely peaked in '14; ongoing @ less than \$1B/yr.
- Higher LT rates helped NII in 1H'15; ST benefit NII in 1Q'16
- EPS leverage from swing in MBS amort./deposit margins/Consumer
- Capital return improved to \$8.1B in '16 vs. \$5.3B in '15.
- Need revenue growth to offset higher L.L. Provisions
- Operating Exp. Falling toward \$53B in '18.
- Need to see sequential improvement in PPNR

Quick Observations

Unusual Items: Core EPS = \$1.27 a sh.

- \$750M of asset sale gains
- \$300M exit charge in Mortgage Banking
- \$230M (pretax) of loan loss reserve release.

Key Themes - "Short Term Goals at Expense of Long Term Earnings" and "Management Realignment" and "Risk Management" and "Trapped Capital and ROE Goals"; strictly a liquidation story.

- Citicorp must show positive operating leverage in:
 1. Transaction Services (vol. vs. NIM)
 2. North American Consumer Bank (Cards)
 3. Latin American Consumer Bank (Mexico)
 4. Asian Consumer Bank (Central Bank easing)
- Citicorp must be able to transition from over-reliance on FICC (restructuring equity platform)
- Risk taking has shifted along new team (cap. mkts vs. cons.).
- Asian/Emerging markets/strong dollar are drags
- Citi Holdings must reduce negative gap between revenues and expenses; Impact of OneMain sale yet to be seen.
- Turbo-charge the creation of capital by using DTAs; FTCs at risk
- Capital is trapped thru mid-decade period; 9%-10% ROE now ST goal
- Liquidation/restructuring being aggressively pursued now; what's impact on revenues.

Citigroup (C)

<i>in \$B's</i>	Q1'17 Actual EPS	Q1'17 Compass Estimate	Q1'17 "Street" Estimate	Q4'16 Actual	Q1'16 Actual	YoY % Change	QoQ % Change
Total Revenue	\$18.1	\$17.4	\$17.8	\$17.0	\$17.6	3.2%	6.5%
Net Interest Income	\$10.9	\$11.5	\$11.2	\$11.2	\$11.2	-3.3%	-2.7%
Fee Income	\$7.3	\$5.9	\$6.6	\$5.9	\$6.3	14.8%	24.2%
Loan Loss Provisions	\$1.7	\$1.8	\$1.8	\$1.7	\$1.9	-11.2%	-3.0%
Non-Interest Expense	\$10.5	\$9.8	\$10.5	\$9.7	\$9.9	6.2%	7.6%
Litigation Expense	\$0.0	\$0.1	\$0.0	\$0.1	\$0.5	-100.0%	-100.0%
Repositioning Charges	\$0.0	\$0.3	\$0.0	\$0.3	\$0.2	-100.0%	-100.0%
Pretax Profit	\$5.5	\$5.5	\$5.6	\$5.2	\$5.1	6.4%	6.0%
Net Income - adj.	\$4.1	\$3.9	\$3.5	\$3.6	\$3.5	17.4%	14.7%
EPS	\$1.35	\$1.26	\$1.23	\$1.14	\$1.10	22.7%	18.4%
Average Earning Assets	\$1,625	\$1,609	\$1,604	\$1,606	\$1,563	4.0%	1.2%
Average Loans	\$623	\$629	\$624	\$626.0	\$612.2	1.8%	-0.4%
Net Interest Margin	2.74%	2.88%	2.83%	2.79%	2.92%	(18)	(5)
Net Charge-Offs	\$1.7	\$1.7	\$1.7	\$1.7	\$1.7	-0.9%	0.8%
Tang. Book Value	\$65.94	\$65.65	\$65.42	\$64.57	\$62.58	5.4%	2.1%

Quick Observations

Unusual Items: Core EPS = \$1.75 a sh.

- \$218M of legal costs (\$0.04 a sh.)
- Equity incentive comp. of \$1B
- \$373M of tax benefit
- \$470M write down of student loan portfolio
- \$339M (pretax) of loan loss reserve release (\$0.08 a sh.)

Key Themes - "Consumer Bank Growth" and "Regulatory Reparation Relations" and "Managing Transitions" and "Revenues"

- Reparation of relations with regulators seems to be under way and should lead to lower compliance costs and greater capital returns .
- Consumer Bank growth showed promising signs
- Must be able to replace the revenue stream from the Equity/M&A cycle
- Must adjust to the normalization of credit costs; energy
- Execute a growth strategy

JP Morgan Chase (JPM)

<i>in \$B's</i>	Q1'17 Actual EPS	Q1'17 Compass Estimate	Q1'17 "Street" Estimate	Q4'16 Actual	Q1'16 Actual	YoY % Change	QoQ % Change
Total Revenue	\$25.0	\$25.5	\$24.9	\$23.7	\$23.0	8.7%	5.6%
Net Interest Income	\$12.4	\$12.5	\$12.2	\$12.1	\$11.7	6.2%	2.7%
Fee Income	\$12.6	\$13.0	\$12.6	\$11.6	\$11.3	11.4%	8.5%
DVA/CVA Charge	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	NM	NM
Loan Loss Provisions	\$1.3	\$1.3	\$1.3	\$0.9	\$1.8	-27.9%	52.2%
Non-Interest Expense	\$14.8	\$14.7	\$14.6	\$13.6	\$13.8	7.3%	8.8%
Litigation Expense	\$0.2	\$0.2	\$0.0	\$0.2	\$0.0	373.9%	-5.2%
Pretax Profit	\$8.7	\$9.3	\$8.9	\$9.2	\$7.4	17.4%	-6.0%
Net Income - adj.	\$6.4	\$6.4	\$5.4	\$6.7	\$5.5	16.8%	-4.1%
EPS	\$1.65	\$1.64	\$1.51	\$1.71	\$1.35	22.2%	-3.5%
Average Earning Assets	\$2,161	\$2,183	\$2,214	\$2,166	\$2,044	5.7%	-0.2%
Average Loans	\$892	\$908	\$906	\$890.5	\$840.5	6.1%	0.2%
Net Interest Margin	2.33%	2.29%	2.29%	2.22%	2.30%	3	11
Net Charge-Offs	\$1.7	\$1.3	\$1.3	\$1.3	\$1.1	49.0%	29.2%
Tang. Book Value	\$52.04	\$52.44	\$51.95	\$51.44	\$48.96	6.3%	1.2%

Money Center Consensus EPS Outlook



Member FINRA/SIPC

Bank Of America	2016	2017E	2018E
Q1	\$0.20	\$0.42	\$0.46
Q2	\$0.37	\$0.47	\$0.55
Q3	\$0.42	\$0.47	\$0.56
Q4	\$0.37	\$0.48	\$0.58
Full Year	\$1.45	\$1.81	\$2.13

JP Morgan	2016	2017E	2018E
Q1	\$1.41	\$1.62	\$1.86
Q2	\$1.43	\$1.65	\$1.92
Q3	\$1.59	\$1.70	\$1.95
Q4	\$1.62	\$1.71	\$1.87
Full Year	\$6.13	\$6.69	\$7.59

Citigroup	2016	2017E	2018E
Q1	\$1.10	\$1.35	\$1.50
Q2	\$1.24	\$1.27	\$1.49
Q3	\$1.24	\$1.31	\$1.49
Q4	\$1.14	\$1.29	\$1.49
Full Year	\$4.72	\$5.19	\$5.87

LITIGATION COSTS

Litigation

Bank of America - Litigation Expenses								
(\$ in Mil.)	2017 (E)	2016 (A)	2015	2014	2013	2012	2011	2010
Q1	\$ 274	\$ 388	\$ 370	\$ 6,018	\$ 2,229	\$ 793	\$ 940	\$ 558
Q2	\$ 250	\$ 270	\$ 175	\$ 3,984	\$ 471	\$ 963	\$ 2,268	\$ 102
Q3	\$ 250	\$ 250	\$ 231	\$ 5,976	\$ 1,107	\$ 1,556	\$ 566	\$ 482
Q4	\$ 250	\$ 246	\$ 428	\$ 393	\$ 2,288	\$ 916	\$ 1,843	\$ 1,500
FY	\$ 1,024	\$ 1,154	\$ 1,204	\$ 16,371	\$ 6,095	\$ 4,228	\$ 5,617	\$ 2,642

Citigroup - Litigation Expenses								
(\$ in Mil.)	2017 (E)	2016 (A)	2015	2014	2013	2012	2011	2010
Q1	\$ 166	\$ 166	\$ 286	\$ 868	\$ 654	\$ 493	\$ 475	
Q2	\$ 200	\$ 327	\$ 265	\$ 4,028	\$ 782	\$ 306	\$ 382	
Q3	\$ 200	\$ 291	\$ 268	\$ 1,357	\$ 569	\$ 307	\$ 297	
Q4	\$ 200	\$ 320	\$ 625	\$ 2,851	\$ 696	\$ 1,063	\$ 788	\$ 369
FY	\$ 766	\$ 1,104	\$ 1,444	\$ 9,104	\$ 2,701	\$ 2,169	\$ 1,942	\$ 623

JP Morgan Chase - Litigation Expenses								
(\$ in Mil.)	2017 (E)	2016 (A)	2015	2014	2013	2012	2011	2010
Q1	\$ 218	\$ (46)	\$ 687	\$ 38	\$ 347	\$ 2,720	\$ 1,073	\$ 2,900
Q2	\$ 200	\$ (430)	\$ 291	\$ 669	\$ 678	\$ 323	\$ 1,900	\$ 792
Q3	\$ 200	\$ (71)	\$ 1,347	\$ 1,062	\$ 9,271	\$ 790	\$ 1,329	\$ 1,500
Q4	\$ 200	\$ 230	\$ 644	\$ 1,114	\$ 847	\$ 1,154	\$ 558	\$ 2,214
FY	\$ 818	\$ (317)	\$ 2,969	\$ 2,883	\$ 11,143	\$ 4,987	\$ 4,860	\$ 7,406

(\$ in Bil.)	BAC	Citi	JPM
Q1'17	\$ 1.5	\$ 2.0	\$ 2.3
Q4'16	\$ 1.5	\$ 3.0	\$ 3.0
Q3'16	\$ 1.1	\$ 3.0	\$ 3.1
Q2'16	\$ 1.1	\$ 3.0	\$ 3.3
Q1'16	\$ 2.4	\$ 3.0	\$ 3.5
Q4'15	\$ 2.4	\$ 3.5	\$ 3.6
Q3'15	\$ 2.4	\$ 4.0	\$ 5.0
Q2'15	\$ 2.3	\$ 4.0	\$ 5.5
Q1'15	\$ 2.5	\$ 4.0	\$ 5.5
Q4'14	\$ 2.7	\$ 4.0	\$ 5.8
Q3'14	\$ 3.1	\$ 5.0	\$ 5.9
Q2'14	\$ 5.0	\$ 5.0	\$ 4.6
Q1'14	\$ 5.0	\$ 5.0	\$ 4.5
Q4'13	\$ 6.1	\$ 5.0	\$ 5.0
Q3'13	\$ 5.1	\$ 5.0	\$ 5.7
Q2'13	\$ 2.8	\$ 5.0	\$ 6.8
Q1'13	\$ 2.6	\$ 5.0	\$ 6.0
Q4'12	\$ 3.1	\$ 5.0	\$ 6.1

* potential litigation costs above and beyond those already reserved for.

Future Issues:

- AML/BSA practices
- FX/Libor manipulation cases
- FCPA overseas hiring practices
- Corporate trustee liabilities
- WM and AM practices

INTEREST RATE SENSITIVITY

Diminishing Impact of Higher Rates

(\$ in Mills.)		Impact of 100bps Rate Increase			
12-30-15	2015	Parallel Shift		Long End Only	
	<u>Nil</u>	\$ Amount	% of Nil	\$ Amount	% of Nil
Bank of America	\$ 39,251	\$ 4,306	11.0%	\$ 1,919	4.9%
Citigroup	\$ 42,926	\$ 2,054	4.8%	\$ 136	0.3%
JP Morgan Chase	\$ 43,510	\$ 3,100	7.1%	\$ 700	1.6%

(\$ in Mills.)		Impact of 100bps Rate Increase			
3-31-16	2015	Parallel Shift		Long End Only	
	<u>Nil</u>	\$ Amount	% of Nil	\$ Amount	% of Nil
Bank of America	\$ 39,251	\$ 6,000	15.3%	\$ 3,600	9.2%
Citigroup	\$ 42,926	\$ 1,949	4.5%	\$ 154	0.4%
JP Morgan Chase	\$ 43,510	\$ 3,100	7.1%	\$ 800	1.8%

(\$ in Mills.)		Impact of 100bps Rate Increase			
6-30-16	2015	Parallel Shift		Long End Only	
	<u>Nil</u>	\$ Amount	% of Nil	\$ Amount	% of Nil
Bank of America	\$ 39,251	\$ 7,461	19.0%	\$ 4,454	11.3%
Citigroup	\$ 42,926	\$ 1,984	4.6%	\$ 205	0.5%
JP Morgan Chase	\$ 43,510	\$ 3,000	6.9%	\$ 700	1.6%

(\$ in Mills.)		Impact of 100bps Rate Increase			
9-30-16	2015	Parallel Shift		Long End Only	
	<u>Nil</u>	\$ Amount	% of Nil	\$ Amount	% of Nil
Bank of America	\$ 39,251	\$ 5,313	13.5%	\$ 2,079	5.3%
Citigroup	\$ 42,926	\$ 1,979	4.6%	\$ 158	0.4%
JP Morgan Chase	\$ 43,510	\$ 2,800	6.4%	\$ 700	1.6%

(\$ in Mills.)		Impact of 100bps Rate Increase			
12-31-16	2016	Parallel Shift		Long End Only	
	<u>Nil</u>	\$ Amount	% of Nil	\$ Amount	% of Nil
Bank of America	\$ 41,996	\$ 3,370	8.0%	\$ 928	2.2%
Citigroup*	\$ 42,926	\$ 2,136	5.0%	\$ 137	0.3%
JP Morgan Chase	\$ 47,292	\$ 2,400	5.1%	\$ 800	1.7%

*\$1.6B relates to U.S. interest rates.

(\$ in Mills.)		Impact of 100bps Rate Increase			
3-31-17	2016	Parallel Shift		Long End Only	
	<u>Nil</u>	\$ Amount	% of Nil	\$ Amount	% of Nil
Bank of America	\$ 41,996	\$ 2,475	5.9%	\$ 825	2.0%
Citigroup*	\$ 42,926	\$ 2,225	5.2%	\$ 129	0.3%
JP Morgan Chase	\$ 47,292	\$ 2,300	4.9%	\$ 800	1.7%

*\$1.6B relates to U.S. interest rates.

Sensitivity to Interest Rates

(\$ in Mils.) 3-31-17	2016 NII	Impact of 100bps Rate Increase			
		Parallel Shift		Long End Only	
		\$ Amount	% of NII	\$ Amount	% of NII
Bank of America	\$ 41,996	\$ 2,475	5.9%	\$ 825	2.0%
Citigroup*	\$ 42,926	\$ 2,225	5.2%	\$ 129	0.3%
JP Morgan Chase	\$ 47,292	\$ 2,300	4.9%	\$ 800	1.7%

*\$1.6B relates to U.S. interest rates.

Bank	100bps Impact	2017 EPS*	New EPS	10X	12X
BAC	\$ 0.20	\$ 1.54	\$ 1.74	\$ 17.42	\$ 20.91
Citi	\$ 0.49	\$ 4.54	\$ 5.03	\$ 50.30	\$ 60.35
JPM	\$ 0.44	\$ 5.62	\$ 6.06	\$ 60.56	\$ 72.68

*at 7-15-16

Bank	25bps Impact	2017 EPS*	New EPS	13X
BAC	\$ 0.05	\$ 1.54	\$ 1.59	\$ 20.68
Citi	\$ 0.12	\$ 4.54	\$ 4.66	\$ 60.61
JPM	\$ 0.11	\$ 5.62	\$ 5.73	\$ 74.48

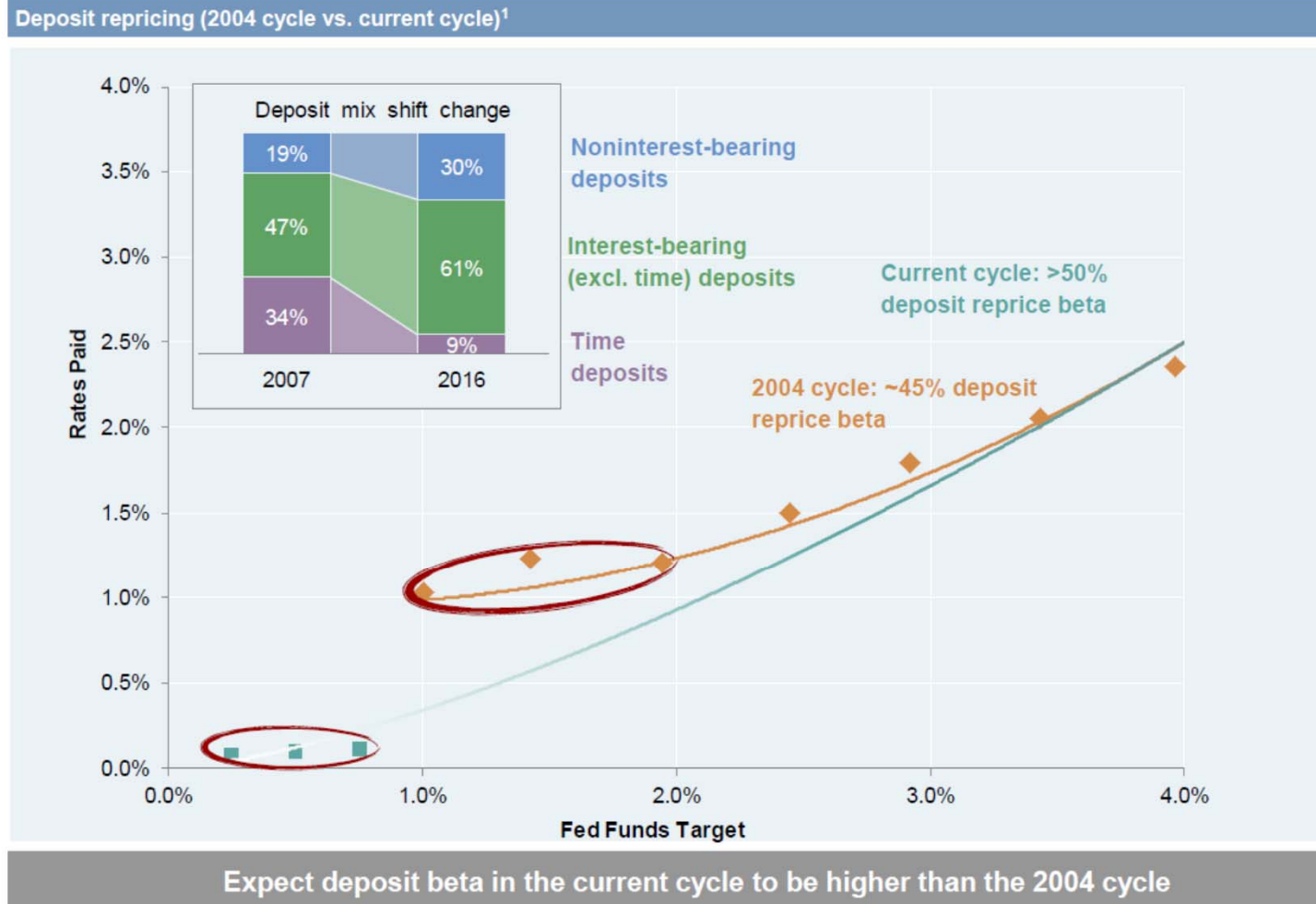
*at 7-15-16

- BAC is the clear winner from higher rates on both the short and long end
- Citi has the least leverage to higher rates, particularly on the long end
- JPM has more leverage to higher short rates
- The deposit beta remains a wild card, but expect MMF price competition to heat up quickly once ST rates exceed 1.00%
- Negative rates bigger negative for BAC and JPM than for Citi

Deposit Beta

3 Deposit re-pricing: current cycle vs. 2004 cycle

Maximizing long-term shareholder value



Negative Interest Rates

Interest on Excess Reserves

Interest on Excess Reserves								
(\$ in Mils.)	Deposits w/ Banks	Total Assets	Deposits as % of Total Assets	Interest Income from Deposits	Deposit Yield	Gross Interest Income	Dep. Int. Inc. as % of Gross	EPS Impact*
Bank of America	\$ 128,088	\$2,144,316	6.0%	\$ 369	0.27%	\$ 50,709	0.7%	\$ 0.02
Citigroup	\$ 112,197	\$1,731,210	6.5%	\$ 727	0.61%	\$ 58,678	1.2%	\$ 0.16
JP Morgan Chase	\$ 340,015	\$2,351,698	14.5%	\$ 1,235	0.29%	\$ 51,658	2.4%	\$ 0.22

CREDIT QUALITY OVERVIEW

Future Credit-Quality Related Events:

- CRE and Leveraged Lending – to be factored into CCAR and RWAs
- Rising Auto Delinquencies
- Energy/M&M/Commercial Real Estate Loans – 2017 event
- Home Equity Resets – 2017-2018 event
- End of Reserve Release likely in 2017

(at 12-31-16) (\$ in Mills.)	Credit Card Loss Reserves		
	Non-PCI Loans		
	<u>Reserves</u>	<u>Outstandings</u>	<u>Ratio (%)</u>
Bank of America	\$ 2,934	\$ 92,278	3.18%
Citigroup	\$ 6,236	\$ 149,599	4.17%
JP Morgan Chase	\$ 3,798	\$ 131,126	2.90%

There is a real need to rebuild Card reserves back to 3.75%-4.00% before next cycle. JPM and BAC reserve levels are clearly below their “through the cycle” expected loss rates.

(at 12-31-16) (\$ in Mills.)	Mortgage Loan Loss Reserves					
	Non-PCI Loans			PCI Loans		
	<u>Reserves</u>	<u>Outstandings</u>	<u>Ratio (%)</u>	<u>Reserves</u>	<u>Outstandings</u>	<u>Ratio (%)</u>
Bank of America	\$ 2,331	\$ 244,762	0.95%	\$ 419	\$ 13,738	3.05%
Citigroup	\$ 1,323	\$ 139,976	0.95%	\$ 5	\$ 165	3.03%
JP Morgan Chase	\$ 1,414	\$ 233,175	0.61%	\$ 2,304	\$ 35,625	6.47%

Mortgage reserve releases at Citi and BofA are expected to continue unless a cyclical downturn in housing leads to higher delinquencies and/or lower home prices. JPM releases will be episodic.

Future Credit Quality

Card Businesses - Guidance				
Card Company	Q1'17	2017 (E)	2016 (A)	FICO Score*
	NCO (%)	Guidance		
Citigroup - Branded	3.11%	2.80%	2.61%	90%
Citi - Private Label	4.66%	4.35%	4.12%	77%
JP Morgan Chase	2.94%	<3.00%	2.63%	84%
Discover	2.84%	up 35 bps YoY	2.34%	82%
Capital One	5.14%	4.75% - 5.00%	4.16%	64%
Synchrony	5.33%	5.00% - 5.25%	4.57%	73%

* Percentage of portfolio over 660.

Future Credit Quality

(at 12-31-15) C&I/CRE Loan Loss Reserves						
(\$ in Mils.)	C&I Loans			CRE Loans		
	Reserves	Outstandings	Ratio (%)	Reserves	Outstandings	Ratio (%)
Bank of America	\$ 3,882	\$ 404,127	0.96%	\$ 967	\$ 57,199	1.69%
Citigroup	\$ 3,305	\$ 287,719	1.15%	\$ 263	\$ 18,661	1.41%
JP Morgan Chase	\$ 3,772	\$ 307,282	1.23%	\$ 1,511	\$ 93,777	1.61%

(at 3-31-16) C&I/CRE Loan Loss Reserves						
(\$ in Mils.)	C&I Loans			CRE Loans		
	Reserves	Outstandings	Ratio (%)	Reserves	Outstandings	Ratio (%)
Bank of America	\$ 4,387	\$ 410,531	1.07%	\$ 924	\$ 58,060	1.59%
Citigroup	\$ 3,427	\$ 292,821	1.17%	\$ 269	\$ 19,911	1.35%
JP Morgan Chase	\$ 4,287	\$ 315,263	1.36%	\$ 1,457	\$ 96,545	1.51%

(at 6-30-16) C&I/CRE Loan Loss Reserves						
(\$ in Mils.)	C&I Loans			CRE Loans		
	Reserves	Outstandings	Ratio (%)	Reserves	Outstandings	Ratio (%)
Bank of America	\$ 4,376	\$ 407,364	1.07%	\$ 919	\$ 57,612	1.60%
Citigroup	\$ 3,438	\$ 302,211	1.14%	\$ 210	\$ 19,319	1.09%
JP Morgan Chase	\$ 4,344	\$ 319,803	1.36%	\$ 1,515	\$ 101,271	1.50%

(at 9-30-16) C&I/CRE Loan Loss Reserves						
(\$ in Mils.)	C&I Loans			CRE Loans		
	Reserves	Outstandings	Ratio (%)	Reserves	Outstandings	Ratio (%)
Bank of America	\$ 4,398	\$ 418,213	1.05%	\$ 915	\$ 57,303	1.60%
Citigroup	\$ 3,289	\$ 302,871	1.09%	\$ 239	\$ 19,998	1.20%
JP Morgan Chase	\$ 4,175	\$ 333,611	1.25%	\$ 1,511	\$ 105,549	1.43%

(at 12-31-16) C&I/CRE Loan Loss Reserves						
(\$ in Mils.)	C&I Loans			CRE Loans		
	Reserves	Outstandings	Ratio (%)	Reserves	Outstandings	Ratio (%)
Bank of America	\$ 4,338	\$ 425,876	1.02%	\$ 920	\$ 58,480	1.57%
Citigroup	\$ 3,168	\$ 290,535	1.09%	\$ 253	\$ 20,553	1.23%
JP Morgan Chase	\$ 4,038	\$ 328,031	1.23%	\$ 1,552	\$ 108,655	1.43%

Future Credit Quality Issues

Money Center Banks - High Risk Corporate Loan Exposures										
9/30/2016	Energy	Current	Reserve (E)	Metals &	Current	Reserve (E)	CRE	Current	Reserve (E)	
	Loans (funded)	Reserve (E)	Ratio (%)	Mining	Reserve (E)	Ratio (%)	Loans	Reserve (E)	Ratio (%)	
Bank of America	\$ 19.7	\$ 1.0	5.1%	\$ 8.0	\$ 0.1	1.0%	\$ 57.3	\$ 0.9	1.6%	
Citigroup - ICG	\$ 20.6	\$ 0.8	4.0%	\$ 5.6	\$ 0.1	1.0%	\$ 20.0	\$ 0.2	1.2%	
GCB	\$ 1.4	\$ 0.1	8.7%							
JP Morgan Chase	\$ 15.7	\$ 1.0	6.4%	\$ 4.6	\$ 0.5	11.1%	\$ 105.5	\$ 1.5	1.4%	

Energy Net Charge-Offs	Bank of America	Citigroup	JP Morgan
(\$ in Mils.)			
Q4'15	\$ 85	\$ 75	NA
2015	\$ 95	\$ 95	\$ 13
Q1'16	\$ 102	\$ 100	\$ 46
Q2'16	\$ 79	\$ 20	\$ 91
Q3'16	\$ 45	\$ -	\$ -
Cumulative net charge-offs	\$ 321	\$ 215	\$ 150

- Expect cumulative losses of 10% to 15% on Energy portfolio lending
- Expect cumulative losses of 15% to 25% on Metals & Mining portfolio lending
- Expect losses on CRE to rise; loss content should be geographic/product dependent

Future Credit Quality

(at 12-31-15) (\$ in Mils.)	Credit Card Loss Reserves		
	Non-PCI Loans		
	Reserves	Outstandings	Ratio (%)
Bank of America	\$ 3,201	\$ 99,577	3.21%
Citigroup	\$ 5,996	\$ 136,017	4.41%
JP Morgan Chase	\$ 3,236	\$ 121,641	2.66%

(at 12-31-15) (\$ in Mils.)	Mortgage Loan Loss Reserves					
	Non-PCI Loans			PCI Loans		
	Reserves	Outstandings	Ratio (%)	Reserves	Outstandings	Ratio (%)
Bank of America	\$ 3,110	\$ 247,469	1.26%	\$ 804	\$ 16,685	4.82%
Citigroup	\$ 1,869	\$ 147,596	1.27%	\$ 11	\$ 200	5.50%
JP Morgan Chase	\$ 1,605	\$ 214,921	0.75%	\$ 2,734	\$ 40,928	6.68%

(at 3-31-16) (\$ in Mils.)	Credit Card Loss Reserves		
	Non-PCI Loans		
	Reserves	Outstandings	Ratio (%)
Bank of America	\$ 3,053	\$ 96,380	3.17%
Citigroup	\$ 5,995	\$ 129,150	4.64%
JP Morgan Chase	\$ 3,334	\$ 116,064	2.87%

(at 3-31-16) (\$ in Mils.)	Mortgage Loan Loss Reserves					
	Non-PCI Loans			PCI Loans		
	Reserves	Outstandings	Ratio (%)	Reserves	Outstandings	Ratio (%)
Bank of America	\$ 2,834	\$ 242,479	1.17%	\$ 622	\$ 15,971	3.89%
Citigroup	\$ 1,842	\$ 147,784	1.25%	\$ 7	\$ 191	3.66%
JP Morgan Chase	\$ 1,606	\$ 223,052	0.72%	\$ 2,687	\$ 39,678	6.77%

(at 6-30-16) (\$ in Mils.)	Credit Card Loss Reserves		
	Non-PCI Loans		
	Reserves	Outstandings	Ratio (%)
Bank of America	\$ 3,062	\$ 97,483	3.14%
Citigroup	\$ 5,978	\$ 139,639	4.28%
JP Morgan Chase	\$ 3,465	\$ 121,126	2.86%

(at 6-30-16) (\$ in Mils.)	Mortgage Loan Loss Reserves					
	Non-PCI Loans			PCI Loans		
	Reserves	Outstandings	Ratio (%)	Reserves	Outstandings	Ratio (%)
Bank of America	\$ 2,681	\$ 242,582	1.11%	\$ 528	\$ 15,228	3.47%
Citigroup	\$ 1,555	\$ 145,323	1.07%	\$ 6	\$ 183	3.28%
JP Morgan Chase	\$ 1,578	\$ 229,710	0.69%	\$ 2,646	\$ 38,296	6.91%

(at 9-30-16) (\$ in Mils.)	Credit Card Loss Reserves		
	Non-PCI Loans		
	Reserves	Outstandings	Ratio (%)
Bank of America	\$ 3,116	\$ 98,047	3.18%
Citigroup	\$ 6,365	\$ 143,828	4.43%
JP Morgan Chase	\$ 3,635	\$ 122,925	2.96%

(at 9-30-16) (\$ in Mils.)	Mortgage Loan Loss Reserves					
	Non-PCI Loans			PCI Loans		
	Reserves	Outstandings	Ratio (%)	Reserves	Outstandings	Ratio (%)
Bank of America	\$ 2,536	\$ 242,893	1.04%	\$ 453	\$ 14,468	3.13%
Citigroup	\$ 1,398	\$ 144,147	0.97%	\$ 5	\$ 168	2.98%
JP Morgan Chase	\$ 1,570	\$ 232,477	0.68%	\$ 2,610	\$ 36,984	7.06%

(at 12-31-16) (\$ in Mils.)	Credit Card Loss Reserves		
	Non-PCI Loans		
	Reserves	Outstandings	Ratio (%)
Bank of America	\$ 2,934	\$ 92,278	3.18%
Citigroup	\$ 6,236	\$ 149,599	4.17%
JP Morgan Chase	\$ 3,798	\$ 131,126	2.90%

(at 12-31-16) (\$ in Mils.)	Mortgage Loan Loss Reserves					
	Non-PCI Loans			PCI Loans		
	Reserves	Outstandings	Ratio (%)	Reserves	Outstandings	Ratio (%)
Bank of America	\$ 2,331	\$ 244,762	0.95%	\$ 419	\$ 13,738	3.05%
Citigroup	\$ 1,323	\$ 139,976	0.95%	\$ 5	\$ 165	3.03%
JP Morgan Chase	\$ 1,414	\$ 233,175	0.61%	\$ 2,304	\$ 35,625	6.47%

CAPITAL ADEQUACY

Capital Return Expectations

Share Buy Back Programs													
(in Mills.)	2015/2016	2014/2015	2013-2016	Q1'17		Q4'16		Q3'16		Q2'16		Q1'16	
	Authorization	Authorization	Cumulative	# shares	\$ amount	# shares	\$ amount	# shares	\$ amount	# shares	\$ amount	# shares	\$ amount
			Buyback										
BAC	\$4.0B	\$4B	\$ 13.4 B	138.5	\$ 3,308	71.3	\$ 1,329	93.0	\$ 1,400	96.0	\$ 1,383	76.3	\$ 1,054
Citi	\$7.8B	\$1.2B	\$ 16.8 B	30.3	\$ 1,782	78.6	\$ 4,286	55.7	\$ 2,533	29.7	\$ 1,332	31.9	\$ 1,339
JPM	\$6.4B	\$6.5B	\$ 21.7 B	32.1	\$ 2,832	29.8	\$ 2,251	35.6	\$ 2,295	45.8	\$ 2,840	29.2	\$ 1,696

2017 CCAR Expectations

- JPM ~\$18B (\$7.5B div., \$10.5B share repurchase)
- C ~\$12.5B (\$3.9B div., \$8.6B share repurchase)
- BAC ~\$11.5B (\$3.7B div., \$7.8B share repurchase)

2016 CCAR Results

- JPM ~\$17.6B (\$7B div., \$10.6B share repurchase)
- C ~\$10.5B (\$1.9B div., \$8.6B share repurchase)
- BAC ~\$8.1B (\$3.1B div., \$5.0B share repurchase)

2016 CCAR Results



Member FINRA/SIPC

	2015 CCAR (Q2'15-Q2'16)		Compass Point 2016E CCAR (Q3'16E-Q2'17E)				Company Reported 2016 CCAR (Q3'16-Q2'17) ¹			
	Quarterly Dividend (\$, per share)	Share Repurchase Program (\$bn) ^(a)	Quarterly Dividend (\$, per share)	Share Repurchase Program (\$bn)	Total Capital Return (\$bn)	Total Payout ^(b)	Quarterly Dividend (\$, per share)	Share Repurchase Program (\$bn)	Total Capital Return (\$bn)	Total Payout ^(b)
Money Center										
Bank of America	0.050	4,000	0.070	3,200	6,087	40%	0.075	5,000	8,093	53%
Citigroup	0.050	7,800	0.180	6,000	8,113	53%	0.160	8,600	10,478	69%
JP Morgan Chase	0.440	6,400	0.480	6,000	13,021	58%	0.480	10,600	17,621	79%
Regional Banks										
BB&T	0.270	820	0.280	600	1,476	63%	0.300	640	1,579	67%
Comerica	0.210	393	0.220	200	354	67%	0.230	440	601	113%
Fifth Third	0.140	765	0.140	600	1,031	83%	0.140	660	984	79%
Huntington	0.070	366	0.075	200	439	72%	0.080	0	191	31%
KeyCorp	0.075	725	0.085	430	719	77%	0.095	350	673	72%
M&T Bank Corp.	0.700	200	0.770	400	893	65%	0.750	1,150	1,390	101%
PNC Financial	0.510	2,875	0.540	2,000	3,078	83%	0.550	2,000	3,098	84%
SunTrust	0.240	875	0.260	700	1,226	69%	0.260	960	1,486	84%
US Bancorp	0.255	3,022	0.275	2,500	4,405	74%	0.280	2,600	4,540	76%
Wells Fargo	0.375	N/A	0.380	8,000	15,715	74%	0.380	N/A	N/A	N/A
Trust Banks										
Bank of NY	0.170	2,400	0.180	2,400	3,181	95%	0.190	2,700	3,525	105%
Northern Trust	0.360	675	0.400	560	928	95%	0.380	275	625	64%
State Street	0.340	1,800	0.360	1,300	1,882	95%	0.380	1,400	2,014	102%
Brokers										
Goldman Sachs	0.650	NA	0.680	3,500	4,716	65%	NA	NA	NA	NA
Morgan Stanley	0.150	3,100	0.180	2,200	3,579	65%	0.200	3,500	5,032	91%
Card Companies										
American Express	0.290	6,600	0.300	5,000	6,072	140%	0.320	3,300	4,517	104%
Capital One	0.400	3,425	0.440	2,650	3,525	90%	0.400	2,500	3,323	85%
Discover	0.280	2,200	0.310	1,850	2,332	102%	0.300	1,950	2,484	109%

^(a) Estimated through Q2'16

^(b) Based upon net income projections for Q3'16-Q2'17.

⁽¹⁾ Total capital return and payout based upon Portales' outstanding share and net income projections for Q3'16-Q2'17.

Key Capital Ratio Metrics

Regulatory Capital Metrics (Data as of 3-31-17)	Standardized Transition		Tier 1	BHC	Standard	Advanced
	Basel III CET1	Basel III Tier 1 Capital	Leverage Ratio	SLR	Fully-Phased CET1	Fully-Phased CET1
Bank of America	12.0%	13.6%	8.8%	7.0%	11.6%	11.0%
Citigroup	12.5%	14.3%	8.4%	6.6%	12.4%	12.4%
JP Morgan Chase	12.5%	14.3%	8.4%	6.6%	12.4%	12.4%

- Major Money Center Banks all exceed their minimum capital requirements
- Qualitative Assessments Remain a Hurdle
- SLR Hurdle raises the Quantitative Bar for 2017 CCAR
- Operational RWAs may be eliminated

Headwinds to Future Capital Returns

1. Capital returns likely to be 70% - 80% of net income, but moving toward 100% return
2. Mix of capital return will shift toward dividends and special dividends
3. Amount of capital return probably creeps higher in 2017 despite new hurdles, such as:
 - Replacement of Tier 1 Common ratio with CET1 ratio (in 2016) and added transition elements
 - Integration of G-SIB buffers in 2018 or later
 - Add SLR requirement in 2017/2018
 - Reaching limits to perpetual preferred issuances
 - Fewer “business plan changes”
 - Increasing RWAs (market and credit); while operational risks eliminated

CONSUMER LINES OF BUSINESS

Consumer Banking Components and Catalysts

	Key Catalysts	Notes
Branch Banking	Higher short term interest rates.	-The Federal Reserve is in “hike mode,” but how many? Does Deposit Beta Accelerate from Here? Approaching diminishing returns.
Mortgage Banking	Revival of the home purchase market.	-Mortgage forecasts for purchase loan volume in 2017 are now \$1.08B, up 9% YoY. But total originations of \$1.59T, down 16% YoY. No rebound projected for ‘18.
Credit Cards	Growth in receivables.	-Growth is clearly accelerating. Standards being loosened. -Benefits are diluted by the end of reserve release and higher rewards costs.

Key Facts:

- The consumer bank contributes 30%-40% of the overall bottom line for money center banks.
- Consumer bank earnings generally have not grown in the past three years, but may be nearing an inflection point, led by branch banking and cards.

Branch Banking



Member FINRA/SIPC

JPM Chase Consumer & Business Banking	2017 (E)	2016 (E)	Q4'16 (E)	Q3'16 (E)	Q2'16 (E)	Q1'16 (E)	2015 (A)	Q4'15	Q3'15	Q2'15	Q1'15	2014 (A)	17/'16 YoY
CBB													% Change
Lending- and deposit- related fees	-	-	-	-	-	-	3,112	812	829	760	711	3,010	
Asset management, administration and commissions	-	-	-	-	-	-	2,097	505	546	534	512	2,025	
Card Income	-	-	-	-	-	-	1,721	442	440	435	404	1,605	
All other income	-	-	-	-	-	-	611	219	135	135	122	534	
Noninterest revenue	7,881	7,559	1,950	1,937	1,864	1,808	7,541	1,978	1,950	1,864	1,749	7,174	4.3%
Net interest Income	11,628	11,141	2,865	2,782	2,752	2,742	10,442	2,609	2,605	2,619	2,609	10,997	4.4%
Total Net Revenue	19,509	18,659	4,774	4,719	4,616	4,550	17,983	4,587	4,555	4,483	4,358	18,171	4.6%
Provision for credit losses	500	307	127	71	53	56	254	76	50	68	60	305	62.9%
Noninterest expense	11,998	11,629	2,950	2,990	2,834	2,855	11,916	2,946	2,956	3,056	2,958	12,149	3.2%
Income before income tax expense	7,011	6,723	1,697	1,658	1,729	1,639	5,813	1,565	1,549	1,359	1,340	5,717	4.3%
Net Income	4,347	4,179	1,052	1,028	1,072	1,027	3,581	968	954	831	828	3,409	4.0%
Implied tax rate	38%	38%	38%	38%	38%	37%	38%	38%	38%	39%	38%	40%	
Overhead ratio	61.5%	62.3%	61.8%	63.4%	61.4%	62.7%	66.3%	64.2%	64.9%	68.2%	67.9%	66.9%	
Metrics:													
EOP Deposits	631,462	607,175	607,175	593,671	583,115	562,284	544,408	544,408	523,983	514,982	515,407	489,546	4.0%
Average Loans	25,002	23,429	24,040	23,678	23,223	22,775	21,891	22,445	22,069	21,732	21,317	20,148	6.7%
Average deposits	602,466	570,772	590,653	576,573	567,415	548,447	515,120	530,611	519,414	512,844	497,610	472,257	5.6%
Average Assets	-	-	-	-	-	-	41,459	41,779	40,991	41,290	41,774	38,296	
Credit Data and Quality Statistics													
Net Charge offs	300	257	77	71	53	56	253	76	50	68	59	305	16.7%
Net Charge Off Rate	1.20%	1.09%	1.27%	1.19%	0.92%	0.99%	1.16%	1.34%	0.90%	1.26%	1.12%	1.51%	
Allowance for loan losses	953	753	753	703	703	703	703	703	703	703	703	703	26.6%
Retail Branch Banking													
Number of Branches	5,150	5,258	5,258	5,310	5,366	5,385	5,413	5,413	5,471	5,504	5,570	5,602	-2.1%
Active digital customers (in 000s)	47,781	43,836	43,836	43,657	42,833	42,458	39,242	39,242	38,511	37,878	37,696	36,396	9.0%
Active mobile customers (in 000s)	31,047	26,536	26,536	26,047	24,817	23,821	22,810	22,810	22,232	21,001	19,962	19,084	17.0%
Client Investment Assets	236,821	227,713	234,532	231,574	224,741	220,004	218,124	218,551	213,263	221,490	219,192	205,540	4.0%
% managed accounts	-	-	-	-	-	-	41%	41%	41%	41%	40%	38%	
# Private Client Branch Locations	-	-	-	-	-	-	2,764	2,764	2,740	2,661	2,573	2,514	
Headcount	-	-	-	-	-	-	24,511	24,511	25,119	26,494	27,410	27,547	
Portales Calculations:													
Deposit Margin	1.93%	1.95%	1.94%	1.93%	1.94%	2.00%	2.03%	1.97%	2.01%	2.04%	2.10%	2.33%	
NII to average loans	11.63%	11.89%	11.92%	11.75%	11.85%	12.04%	11.93%	11.62%	11.80%	12.05%	12.24%	13.65%	
Asset Mgmt Fees to Mgd Investment Assets	-	-	-	-	-	-	0.59%	0.56%	0.62%	0.59%	0.58%	0.64%	
Lending/deposit fees to average deposits	-	-	-	-	-	-	0.60%	0.61%	0.64%	0.59%	0.57%	0.64%	
ROE (30% Target)	39.9%	38.34%	38.6%	37.7%	39.3%	37.7%	32.85%	35.5%	35.0%	30.5%	30.4%	31.28%	
Segment RODep.	0.72%	0.73%	0.71%	0.71%	0.76%	0.75%	0.69%	0.73%	0.73%	0.65%	0.67%	0.72%	

Source: Company Data, Compass Point

Mortgage Banking

	JPM: Mortgage Banking (Fee Inc.)											17/'16 Y-o-Y	
	2017 (E)	2016 (E)	Q4'16 (E)	Q3'16 (E)	Q2'16 (E)	Q1'16 (E)	2015 (A)	Q4'15 (A)	Q3'15 (A)	Q2'15 (A)	Q1'15 (A)		2014 (A)
(\$ in Mills.)													
Mortgage Fees & Related Income	\$2,200	\$2,491	\$511	\$624	\$689	\$667	\$2,812	\$855	\$469	\$783	\$705	\$3,563	-11.7%
Net Production/Orig. Revenue, incl. R&W	\$704	\$853	\$183	\$247	\$261	\$162	\$769	\$123	\$176	\$233	\$237	\$1,190	-17.4%
<u>Mortgage Servicing Revenue</u>	\$2,215	\$2,086	\$327	\$550	\$593	\$616	\$2,776	\$672	\$648	\$707	\$749	\$3,303	6.2%
"Core" Mortgage Banking Revs.	\$2,920	\$2,939	\$510	\$797	\$854	\$778	\$3,545	\$795	\$824	\$940	\$986	\$4,493	-0.7%
Amortization of MSR Fair Value	(\$920)	(\$923)	(\$215)	(\$230)	(\$238)	(\$240)	(\$917)	(\$243)	(\$232)	(\$228)	(\$214)	(\$905)	-0.3%
Rate Related MSR Fair Value Changes	\$0	\$137	\$800	\$532	(\$433)	(\$762)	(\$160)	\$178	(\$677)	\$815	(\$476)	(\$1,606)	-100.0%
<u>Other MSR Fair Value Changes</u>	(\$50)	(\$34)	(\$20)	\$0	(\$24)	\$10	(\$245)	(\$33)	(\$88)	(\$22)	(\$102)	(\$218)	47.1%
MSR Related Income	(\$970)	(\$820)	\$565	\$302	(\$695)	(\$992)	(\$1,322)	(\$98)	(\$997)	\$565	(\$792)	(\$2,729)	18.3%
MSR Risk management		\$240	\$0	\$38	\$73	\$129	(\$117)	\$4	(\$123)	\$70	(\$68)		
<u>DVA</u>	\$250	\$371	(\$565)	(\$475)	\$530	\$881	\$288	(\$141)	\$642	(\$723)	\$510	\$1,796	-32.6%
Mortgage Fees & Related Income	\$2,200	\$2,490	\$510	\$624	\$689	\$667	\$2,511	\$556	\$469	\$782	\$704	\$3,560	-11.7%
(in Bils.)													
Origination Volumes (\$ in bils.)	\$88.1	\$104	\$29.1	\$27.1	\$25.0	\$22.4	\$106	\$22.5	\$29.9	\$29.3	\$24.7	\$78	-15.0%
Servicing Portfolio (3rd party) - Avg. EOP	\$615.4	\$631.81	\$600.4	\$619.6	\$642.7	\$664.7	\$715.58	\$688.3	\$713.0	\$723.5	\$737.5	\$784.80	-2.6%
	\$646.1	\$591.5	\$591.5	\$609.2	\$629.9	\$655.4	\$674.0	\$674.0	\$702.6	\$723.4	\$723.5	\$751.5	9.2%
MSR Carrying Value - \$ Ratio %	\$6.1	\$6.1	\$6.1	\$4.9	\$5.1	\$5.7	\$6.6	\$6.6	\$6.7	\$7.6	\$6.6	\$7.4	0.6%
	0.95%	1.03%	1.03%	0.80%	0.81%	0.87%	0.98%	0.98%	0.95%	1.05%	0.91%	1.04%	
Origination Revs. As % of Orig. Vols.	0.80%	0.78%	0.63%	0.91%	1.04%	0.53%	0.63%	0.53%	0.44%	0.70%	0.83%	0.95%	
Servicing Fees as % of Servicing Portfolio	0.090%	0.083%	0.054%	0.089%	0.092%	0.093%	0.097%	0.098%	0.091%	0.098%	0.102%	0.105%	

Mortgage Banking

Money Center Mortgage Banking Data

Bank of America (\$ in Mills.)	Q1'17	Q4'16	Q3'16	Q2'16	Q1'16	Q4'15	Q3'15	Q2'15	Q1'15	First Quarter	
										QoQ % Change	YoY % Change
Mortgage Originations (Total)	\$ 11,442	\$ 18,351	\$ 16,865	\$ 16,341	\$ 12,623	\$ 13,543	\$ 13,712	\$ 15,962	\$ 13,713	-37.6%	-9.4%
Mortgage Originations (Cons.)	\$ 7,629	\$ 12,303	\$ 11,588	\$ 11,541	\$ 9,078	\$ 9,732	\$ 10,026	\$ 11,265	\$ 9,854	-38.0%	-16.0%
Core Production Rev.	\$ 54	\$ 131	\$ 212	\$ 182	\$ 137	\$ 148	\$ 221	\$ 273	\$ 300	-58.8%	-60.6%
Gain-on-Sale Margins (%)	0.47%	0.71%	1.26%	1.11%	1.09%	1.09%	1.61%	1.71%	2.19%		
R&W Reserve Release/(Prov.)	\$ 3	\$ 46	\$ (102)	\$ (22)	\$ (44)	\$ (9)	\$ (77)	\$ 204	\$ (90)	-93.5%	-106.8%
Total Mortgage Bank Inc.	\$ 122	\$ 519	\$ 589	\$ 312	\$ 433	\$ 262	\$ 407	\$ 1,001	\$ 694	-76.5%	-71.8%
Mortgage Servicing Portfolio	\$ 296,000	\$ 307,000	\$ 336,000	\$ 353,000	\$ 368,000	\$ 378,000	\$ 391,000	\$ 409,000	\$ 459,000	-3.6%	-19.6%
Servicing Fees	\$ 245	\$ 282	\$ 630	\$ 290	\$ 330	\$ 352	\$ 345	\$ 392	\$ 430	-13.1%	-25.8%
Servicing Fee as % of Portfolio	0.83%	0.92%	1.88%	0.82%	0.90%	0.93%	0.88%	0.96%	0.94%		
MSRs	\$ 2,129	\$ 2,279	\$ 2,012	\$ 1,789	\$ 2,152	\$ 2,680	\$ 2,699	\$ 3,201	\$ 3,108	-6.6%	-1.1%
Capitalized MSRs (%)	0.72%	0.74%	0.60%	0.51%	0.58%	0.71%	0.69%	0.78%	0.68%		

Citigroup - Key Mortgage Banking Data (\$ in Mills.)	Q1'17	Q4'16	Q3'16	Q2'16	Q1'16	Q4'15	Q3'15	Q2'15	Q1'15	QoQ	YoY
										% Change	% Change
Mortgage Originations	\$ 3,800	\$ 5,600	\$ 6,500	\$ 6,400	\$ 5,500	\$ 6,200	\$ 7,500	\$ 8,800	\$ 7,000	-32.1%	-30.9%
Mortgage Servicing Portfolio	\$ 48,500	\$ 143,200	\$ 147,600	\$ 151,800	\$ 155,900	\$ 159,500	\$ 162,600	\$ 165,000	\$ 168,200	-66.1%	-68.9%
Mortgage Servicing Rights	\$ 567	\$ 1,564	\$ 1,270	\$ 1,324	\$ 1,524	\$ 1,781	\$ 1,766	\$ 1,924	\$ 1,685	-63.7%	-62.8%
Capitalized MSRs (%)	0.80%	0.89%	0.73%	0.71%	0.79%	0.90%	0.87%	0.92%	0.78%		
MSR Fees	\$ 113	\$ 124	\$ 134	\$ 137	\$ 137	\$ 143	\$ 145	\$ 160	\$ 151		
Servicing/Gain on Sale Revs.	\$ 63.1	\$ 102.8	\$ 141.9	\$ 90.6	\$ 97.6	\$ 110.6	\$ 107.2	\$ 179.4	\$ 168.7	-38.6%	-35.3%
GOS as %	1.55%	1.61%	1.98%	1.20%	1.52%	1.55%	1.24%	1.86%	2.17%		
Mortgage Rate Locks (pipeline)	\$ 1,900	\$ 2,600	\$ 3,900	\$ 4,000	\$ 3,100	\$ 3,200	\$ 3,900	\$ 5,000	\$ 4,400	-26.9%	-38.7%

JP Morgan Chase - Key Mortgage Metrics (\$ in Mills.)	Q1'17	Q4'16	Q3'16	Q2'16	Q1'16	Q4'15	Q3'15	Q2'15	Q1'15	QoQ	YoY
										% Change	% Change
Mortgage Originations	\$ 22,400	\$ 29,100	\$ 27,100	\$ 25,000	\$ 24,700	\$ 22,500	\$ 29,900	\$ 29,300	\$ 24,700	-23.0%	-9.3%
Core Production Rev.	\$ 141	\$ 183	\$ 247	\$ 261	\$ 162	\$ 120	\$ 132	\$ 205	\$ 204	-23.0%	-13.0%
Gain-on-Sale Margins (%)	0.63%	0.63%	0.91%	1.04%	0.66%	0.53%	0.44%	0.70%	0.83%		
R&W Reserve Release/(Prov.)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3	\$ 44	\$ 28	\$ 33		
Total Mortgage Bank Inc.	\$ 406	\$ 511	\$ 624	\$ 689	\$ 667	\$ 556	\$ 469	\$ 782	\$ 704	-20.5%	-39.1%
Mortgage Servicing Portfolio (avg.)	\$ 582,600	\$ 591,500	\$ 609,200	\$ 629,900	\$ 655,400	\$ 688,300	\$ 713,000	\$ 723,500	\$ 737,500	-1.5%	-11.1%
Servicing Fees	\$ 317	\$ 550	\$ 571	\$ 593	\$ 616	\$ 672	\$ 648	\$ 707	\$ 749	-42.4%	-48.5%
Servicing Fee as % of Portfolio	0.54%	0.93%	0.94%	0.94%	0.94%	0.98%	0.91%	0.98%	1.02%		
MSRs	\$ 6,100	\$ 6,100	\$ 4,900	\$ 5,100	\$ 5,700	\$ 6,600	\$ 6,700	\$ 7,600	\$ 6,600	0.0%	7.0%
Capitalized MSRs (%)	1.05%	1.03%	0.80%	0.81%	0.87%	0.98%	0.95%	1.05%	0.91%		

Cards

JP Morgan Chase - Credit Card	Full Year	Full Year					Full Year					17'16 %
	2017 (E)	2016 (E)	Q4'16 (E)	Q3'16 (E)	Q2'16 (E)	Q1'16 (E)	2015 (A)	Q4'15	Q3'15	Q2'15	Q1'15	YoY
Noninterest revenue	1,392	2,687	337	610	924	815	3,673	997	838	980	858	-48.2%
Net interest income	13,228	12,129	3,115	3,052	3,017	2,944	11,845	3,038	3,051	2,855	2,901	9.1%
Total net revenue	14,621	14,815	3,452	3,663	3,942	3,759	15,518	4,035	3,889	3,835	3,759	-1.3%
Provision for credit losses	4,429	4,042	1,064	1,038	1,110	830	3,122	774	759	800	789	9.6%
Noninterest expense	5,629	6,408	1,600	1,620	1,580	1,608	6,065	1,544	1,581	1,478	1,462	-12.2%
Income before income tax expense	4,563	4,365	788	1,005	1,252	1,321	6,331	1,717	1,549	1,557	1,508	4.5%
Net Income	2,852	2,728	493	628	782	825	3,930	1,069	961	965	935	4.5%
Calculated Tax Rate	37.5%	37.5%	37.5%	37.5%	37.5%	37.5%	37.9%	37.7%	38.0%	38.0%	38.0%	
Percent of Average Loans												
noninterest revenue	1.00%	2.07%	0.99%	1.84%	2.88%	2.56%	2.92%	3.10%	2.63%	3.16%	2.78%	
net interest yield	9.50%	9.25%	9.15%	9.20%	9.40%	9.25%	9.41%	9.45%	9.58%	9.20%	9.41%	
total net revenue	10.50%	11.32%	10.14%	11.04%	12.28%	11.81%	12.33%	12.55%	12.21%	12.36%	12.19%	
Overhead ratio	38.5%	43.4%	46.3%	44.2%	40.1%	42.8%	39.1%	38.3%	40.7%	38.5%	38.9%	
Total Average Assets	223,420	215,865	223,248	217,562	210,485	212,165	207,459	213,284	207,904	204,724	203,925	
EOP Loans:												
credit card	146,207	141,816	141,816	133,435	131,591	126,090	131,463	131,463	126,979	126,025	123,257	3.1%
Average Loans												
credit card	139,245	131,147	136,181	132,713	128,396	127,299	125,872	127,620	126,305	124,539	125,025	6.2%
Card Credit Quality Metrics												
Net Charge-Offs (\$)	3,829	3,442	914	838	860	830	3,122	774	759	800	789	11.3%
NCO Ratio (%)	2.75%	2.63%	2.67%	2.51%	2.70%	2.62%	2.52%	2.42%	2.41%	2.61%	2.62%	
Delinquency Rate (30-days) (%)												
Card L.L. Reserves (\$)	4,634	4,034	4,034	3,884	3,684	3,434	3,434	3,434	3,434	3,434	3,434	14.9%
Card Reserve Ratio (%)	3.17%	2.84%	2.84%	2.91%	2.80%	2.72%	2.71%	2.61%	2.70%	2.72%	2.79%	
NCO Coverage (# of Qtrs.)	5	5	4	5	4	4	4	4	5	4	4	
Credit Cards, excluding commercial												
sales volume (\$B)	578	545	149	139	136	122	496	131	127	126	113	6.0%
new accounts opened			3	3	3	2		3	2	2	2	
open accounts								59	63	63	65	
accounts with sales activity								34	33	33	33	
% of accounts acquired online								72%	69%	62%	62%	
Merchants services												
merchant processing volume (\$B)			284.9	267.2	263.8	247.5		258.2	235.8	234.1	221.2	
total transactions (\$B)								11.7	10.4	10.1	9.8	
Net income to average total assets	1.32%	1.29%	0.89%	1.17%	1.48%	1.55%	1.92%	2.03%	1.86%	1.89%	1.83%	
to average loans	2.05%	2.08%	1.45%	1.89%	2.44%	2.59%	3.12%	3.35%	3.04%	3.10%	2.99%	
ROE (%)	18.9%	18.1%	13.0%	16.6%	20.7%	21.9%	26.0%	28.3%	25.5%	25.6%	24.8%	
Card income to sales volume	0.24%	0.49%	0.23%	0.44%	0.68%	0.67%	0.74%	0.76%	0.66%	0.78%	0.76%	
Interest income to average loans	9.50%	9.25%	9.15%	9.20%	9.40%	9.25%	9.41%	9.52%	9.66%	9.17%	9.28%	

CAPITAL MARKETS METRICS

Equity Prices were Up in Q1'16 and again in April'17, Q1'17 FICC Improved, while Equites Lagged; Weak Q2'17 Start.

	Apr-17	1Q'17	4Q'16	1Q'16	Q-0-Q	Y-o-Y
	Gain (Loss)	Gain (Loss)	Gain (Loss)	Gain (Loss)	bps	bps
Indices						
Dow Jones Industrial	1.34%	4.56%	7.94%	1.49%	-338	307
S&P 500	0.91%	5.53%	3.25%	0.77%	228	476
Nasdaq Composite	2.30%	3.47%	1.34%	-2.75%	213	622
MSCI World	1.48%	5.85%	1.48%	-0.88%	437	673
FTSE 100	-1.17%	2.52%	3.53%	-1.08%	-101	360
NIKKEI 225	1.81%	-1.07%	16.20%	-11.95%	-1727	1088
MSCI EM Proxy	2.22%	11.14%	-6.52%	6.40%	1766	474
Barclays Aggregate (AGG) proxy	0.70%	0.40%	-3.88%	3.04%	428	-264
10YR Yield Q-end	2.28%	2.39%	2.45%	1.79%	-6	60
3MO Yield Q-end	0.79%	0.74%	0.48%	0.19%	26	55
Mean Volatility (VIX)	13.1	11.73	14.10	20.49	-16.8%	-42.8%
	April	1Q'17	4Q'16	1Q'16	Q-0-Q	Y-o-Y
	2017	M shares/	000	contracts/\$B	%	%
Market Activity						
NYSE ADV (E)		1,595	1,688	2,109	-5.5%	-24.4%
Euronext Equities (avg D turnover € M, E)		6,409	6,361	7,519	0.8%	-14.8%
JPX Equities		2,329	2,584	2,975	-9.9%	-21.7%
HSE Securities (E)		201,073	157,706	219,630	27.5%	-8.4%
US Bonds - NY Fed (\$B, E)			13,655	12,784		
EMEA Bonds Eurex ADV (€ M, singl-ct, E)*		28	25	30	12.0%	-6.7%
CME ADV		17,098	16,325	16,943	4.7%	0.9%
CME Interest Rates ADV		9,215	8,300	8,246	11.0%	11.8%
CME FX ADV		887	883	944	0.5%	-6.0%
Options (OCC ADV)	16,027	17,075	16,195	17,180	5.4%	-0.6%
Energy (ICE ADV) (E)		2,856	2,725	2,822	4.8%	1.2%
Schwab Client DARTs (E) '000 trades	295	317	293	328	8.2%	-3.4%

Source: Company Data, Compass Point

•Q1'17 trading volumes favored bonds, rates and FX, continuing strength seen in FICC; offset by weaker activity in equities. Volatility remained subdued, near historic lows. **Market making (a larger driver of revenues than IB which was strong) likely to have seasonally moderated in Q2'17 from Q1'17. The exp. QoQ decline suggests weaker CapM revenues, driven by lower equities, bonds and loan syndications. Q2'17 QoQ results could be down 15%-20% from strong Q1'17.**

•Predominantly higher asset prices will ease flows pressure on Asset and Wealth Management revenues.

* Q4'16 Index data through 12/31/16, Q4'16 Volumes – Compass Point' estimates based on current activity and actual

Money Center Markets (Trading) Revenues

Bank of America Trading						
	Q1'17(A)	Q1'17(E)	Q4'16(A)	Q1'16	Percent Change	
					YoY	QoQ
FICC	\$ 2,930	\$ 2,500	\$ 1,964	\$ 2,265	29.4%	49.2%
Equity	\$ 1,099	\$ 1,075	\$ 948	\$ 1,023	7.4%	15.9%
Total	\$ 4,029	\$ 3,575	\$ 2,912	\$ 3,288	22.5%	38.4%

JP Morgan Chase Trading						
	Q1'17(A)	Q1'17(E)	Q4'16(A)	Q1'16	Percent Change	
					YoY	QoQ
FICC	\$ 4,215	\$ 3,900	\$ 3,369	\$ 3,597	17.2%	25.1%
Equity	\$ 1,606	\$ 1,450	\$ 1,150	\$ 1,576	1.9%	39.7%
Total	\$ 5,821	\$ 5,350	\$ 4,519	\$ 5,173	12.5%	28.8%

Citigroup Trading						
	Q1'17(A)	Q1'17(E)	Q4'16(A)	Q1'16	Percent Change	
					YoY	QoQ
FICC	\$ 3,622	\$ 3,475	\$ 2,957	\$ 3,051	18.7%	22.5%
Equity	\$ 769	\$ 750	\$ 685	\$ 697	10.3%	12.3%
Total	\$ 4,391	\$ 4,225	\$ 3,642	\$ 3,748	17.2%	20.6%

Investment Banking Activity was Mixed QoQ, Led by Strength in HY and IPOs, Offset by Softer M&A.

Global Equity Issuances							
(\$ in Mills.)		Market Share (%)	Number of Issues	YoY % Monthly Change	YoY % Qtrly Change	QoQ % Qtrly Change	Latest Month vs. Prior Qtrly Avg.
Monthly	Gross Proceeds	(%)	Issues	Change	Change	Change	
Jan-17	\$ 61,542	25%	447	-59.3%			
Feb-17	\$ 74,020	30%	536	50.2%			
Mar-17	\$ 108,629	44%	810	69.0%	-7.8%	15.0%	
Apr-17	\$ 61,523		543	-9.4%			-24.4%

Global Debt Issuances							
(\$ in Mills.)		Market Share (%)	Number of Issues	YoY % Monthly Change	YoY % Qtrly Change	QoQ % Qtrly Change	Latest Month vs. Prior Qtrly Avg.
Monthly	Gross Proceeds	(%)	Issues	Change	Change	Change	
Jan-17	\$ 667,584	38%	1,346	16.7%			
Feb-17	\$ 476,826	27%	1,334	-3.8%			
Mar-17	\$ 632,196	36%	1,686	-18.2%	-3.4%	33.1%	
Apr-17	\$ 450,757		1,384	-35.8%			-23.9%

M&A Completed Volumes							
(\$ in Mills.)		Market Share (%)	Number of Issues	YoY % Monthly Change	YoY % Qtrly Change	QoQ % Qtrly Change	Latest Month vs. Prior Qtrly Avg.
Monthly	Gross Proceeds	(%)	Issues	Change	Change	Change	
Jan-17	\$ 255,326	38%	3,071	-3.2%			
Feb-17	\$ 207,188	31%	2,411	-33.5%			
Mar-17	\$ 203,786	31%	2,927	-4.8%	-15.6%	-24.2%	
Apr-17	\$ 252,512		2,251	-10.2%			13.7%

Investment banking revenues are likely to show flat lower QoQ results in Q2'17, vs. Q1'17. The expected drop-off from the robust Q1'17 levels is reflected in the weak April'17 data, which continued into early May'17. Softer equity and debt issuance activity continued to weigh against mixed results in M&A. Pipeline remains healthy.

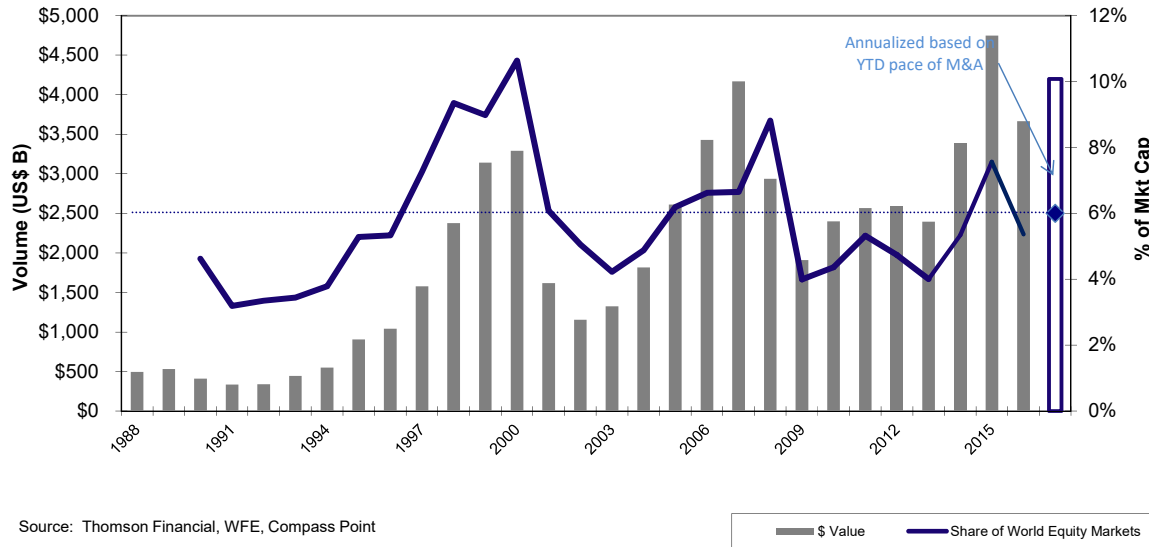
Capital Markets Revs, incl. Investment Banking

		2015	2016	YoY	Q1'16	Q2'16	Q3'16	Q4'16 (A)	Q1'17(A)	Q2'17(E)	YoY		Q2'16 (A)	Q1'17 (A)	Q2'17 (E)	YoY
Fee-based Revenues												(\$ in Mills.)	Total	Total	Total	%
FICC Trading*													Trading	Trading	Trading	Change
GS	7,108	7,556	-8%	1,663	1,927	1,964	2,002	1,685	1,264	-34%	GS	\$ 3,681	\$ 3,359	\$ 2,603	-29.3%	
MS	4,303	5,117	20%	873	1,297	1,479	1,468	1,714	1,286	-1%	MS	\$ 3,442	\$ 3,730	\$ 2,898	-15.8%	
JPM	12,592	15,259	9%	3,597	3,959	4,334	3,369	4,215	3,161	-20%	JPM	\$ 5,559	\$ 5,821	\$ 4,446	-20.0%	
BAC	8,632	9,613	6%	2,264	2,618	2,767	1,964	2,930	2,198	-16%	BAC	\$ 3,704	\$ 4,029	\$ 3,077	-16.9%	
C	11,318	13,029	7%	3,085	3,468	3,466	3,010	3,622	2,717	-22%	Citi	\$ 4,256	\$ 4,391	\$ 3,332	-21.7%	
Fee-based Revenues												(\$ in Mills.)	Total	Total	Total	%
Advisory													IB	IB	IB	Change
GS	3,470	2,932	19%	771	794	658	709	756	809	2%	GS	\$ 1,787	\$ 1,703	\$ 1,567	-12.3%	
MS	1,967	2,220	36%	591	497	504	628	496	531	7%	MS	\$ 1,108	\$ 1,417	\$ 1,268	14.4%	
JPM	2,133	2,110	30%	585	466	542	517	501	536	15%	JPM	\$ 1,636	\$ 1,812	\$ 1,585	-3.1%	
BAC	1,503	1,236	2%	346	333	295	262	405	433	30%	BAC	\$ 1,454	\$ 1,643	\$ 1,424	-2.1%	
C	1,093	1,000	5%	227	238	239	296	246	263	11%	Citi	\$ 1,217	\$ 1,214	\$ 1,038	-14.7%	
Average			18%							13%						
Debt Underwriting																
GS	2,011	2,450	9%	509	724	652	565	636	509	-30%						
MS	1,643	1,369	-30%	239	345	364	421	531	425	23%						
JPM	3,169	3,155	-6%	531	885	943	796	917	734	-17%						
BAC	3,033	3,276	-9%	669	889	908	810	926	741	-17%						
C	2,568	2,684	7%	530	805	701	648	733	586	-27%						
Average			-6%							-14%						
Equity Underwriting																
GS	1,546	891	-49%	183	269	227	212	311	249	-8%						
MS	1,398	887	-45%	160	266	236	225	390	312	17%						
JPM	1,434	1,159	-26%	205	285	370	299	394	315	11%						
BAC	1,236	864	-42%	188	232	261	183	312	250	8%						
C	906	628	-50%	118	174	146	190	235	188	8%						
Average			-42%							7%						

Source: Company Reports, Compass Point.

Capital Markets Cycle

Global Announced Merger and Acquisitions Volume & Share of Equity Capital Markets
(\$ billions)



Source: Thomson Financial, WFE, Compass Point

Historically, the mature phase of a capital markets cycle has been characterized by:

- A Rotation from FICC to equity.
- Mega-deals dominating M&A.

- 2016 M&A volume was 23% below 2015, but at \$3.7T it was the third strongest year (Q4'16 worldwide announced M&A increased ~50% QoQ).
- Completed M&A advisory fees were down just 3% YoY in 2016.
- Mega deals dominated 2015; but their volume was down 30% in 2016.
- 2017 activity should remain healthy (potentially up 10% - 15% YoY), driven by improving sentiment and dominated by middle-market deals.

Valuation

Valuation Metrics		(5-9-17)						2015 (A)		2016 (A)		2017 (E) "Normalized"	
(Data as of 3-31-17)		Share	Book	Tangible				12Mos.'16	Net	Net	Net	Net	
Bank	Price	Value	Book Value	P/BV	P/TBV	ROTCE		Income	Income	Income	Income		
Bank of America	\$23.98	\$24.36	\$17.23	98%	139%	9.5%		\$ 15,836	\$ 17,906	\$ 19,570	\$ 23,000		
Citigroup	\$60.23	\$75.86	\$65.94	79%	91%	7.6%		\$ 17,242	\$ 13,630	\$ 14,240	\$ 19,000		
JP Morgan Chase	\$86.75	\$64.68	\$52.04	134%	167%	13.0%		\$ 24,442	\$ 24,733	\$ 23,970	\$ 30,000		
ROTCE													
Bank	Share Price	2016 (A) EPS	2017 (E) EPS*	2018 (E) EPS*	2016 (E) P/E	2017 (E) P/E	2018 (E) P/E	3Mos.'17 ROTCE	17/'16 YoY	18/'17 YoY	2018 13X	2017 14X	
Bank of America	\$23.98	\$1.50	\$1.81	\$2.13	16.0	13.2	11.3	10.3%	20.7%	17.7%	\$ 27.69	\$ 25.34	
Citigroup	\$60.23	\$4.72	\$5.19	\$5.87	12.8	11.6	10.3	8.5%	10.0%	13.1%	\$ 76.31	\$ 72.66	
JP Morgan Chase	\$86.75	\$6.19	\$6.69	\$7.59	14.0	13.0	11.4	13.0%	8.1%	13.5%	\$ 98.67	\$ 93.66	

* Consensus estimates.

Valuation

Money Center Bank ROTCEs, TBVs and Target Prices			
2017 without Tax Cut			
2017 (E)	Bank of America	Citigroup	JP Morgan Chase
ROTCE	10.8%	8.0%	13.5%
TBV	\$ 18.08	\$ 70.36	\$ 55.21
Target Price	\$ 19.53	\$ 56.29	\$ 74.53
2018 without Tax Cut			
2018 (E)	Bank of America	Citigroup	JP Morgan Chase
ROTCE	12.7%	8.8%	13.5%
TBV	\$ 19.78	\$ 76.15	\$ 58.21
Target Price	\$ 25.12	\$ 67.01	\$ 78.58
2018 with Tax Cut*			
2018 (E)	Bank of America	Citigroup	JP Morgan Chase
ROTCE	14.0%	10.0%	15.8%
TBV	\$ 20.04	\$ 77.12	\$ 59.51
Target Price	\$ 28.06	\$ 77.12	\$ 94.03
* Assumes a 24% FTE tax rate; 2018 est. based upon Consensus forecasts.			

BAC (Sell) - Our \$20 price target is approximately a 10% premium to our 2017E TBVPS of about \$18.05 and about 12.5x our 2017E EPS of \$1.60. *Risks include but are not limited to: Credit, Market, MBS, Mortgage and Housing, Regulatory/Compliance/Legal, Operational, Cyber, "Living Will".*

C (Sell) - Our \$53 price target represents approximately a 20% discount to our 2017E TBVPS of \$66 and 11x our 2017E EPS of \$4.85. *Risks include but are not limited to: Credit, Regulatory, Credit, Macroeconomic/Political, Liquidity, Operational, Tax/DTA, Cyber, "Bad Bank".*

JPM (Sell) - Our \$80 price target reflects a premium valuation based upon the belief that JPM can grow its tangible book value to \$59 a share by year-end 2018 and that the company can generate a 13.5% return on tangible common equity (without tax reform). This target price represents a 12x our 2017 EPS estimate of \$6.48 a share. *Risks include but are not limited to: Regulatory, Market, Credit, Liquidity, Legal, Economic/Political, Cyber.*

Disclosures

Important Disclosures

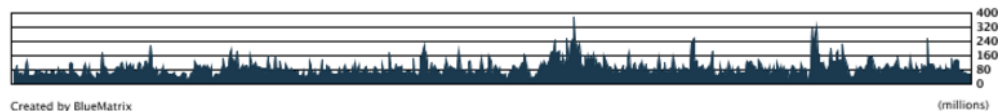
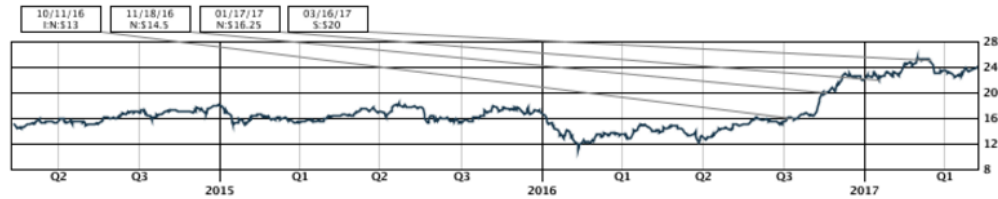
Analyst Certification

I, Charles Peabody, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities or issues. I further certify that I have not received direct or indirect compensation in exchange for expressing specific recommendations or views in this report.

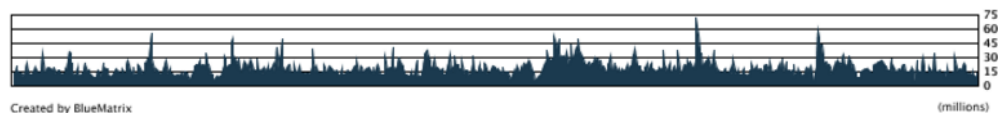
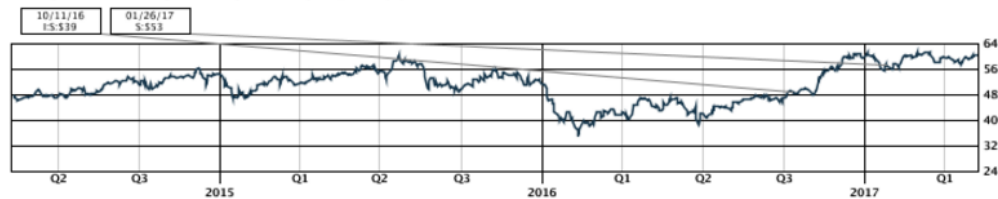
Coverage Universe			Investment Banking Relationships		
Rating	Number	Percent	Rating	Number	Percent
Buy	70	45	Buy	17	24
Neutral	67	44	Neutral	7	10
Sell	17	11	Sell	1	6
Total	154	100%	Total	25	100%

*Percentage of Investment Banking Clients in Coverage Universe by Rating

Rating and Price Target History for: Bank of America Corp. (BAC) as of 05-10-2017

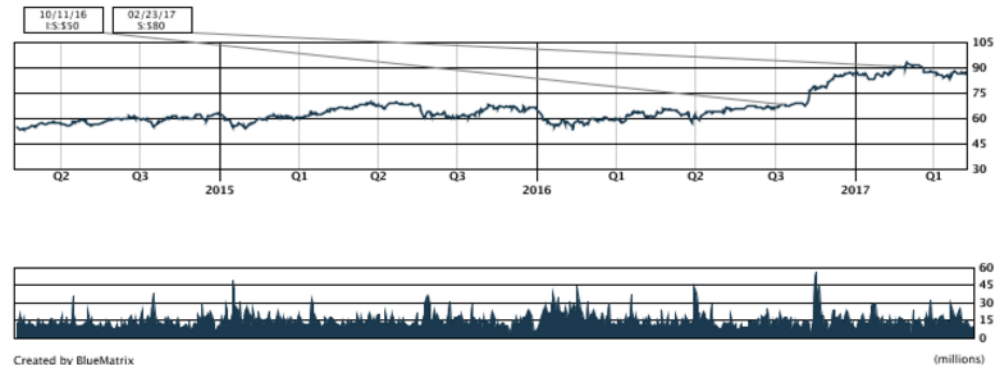


Rating and Price Target History for: Citigroup Inc. (C) as of 05-10-2017



Disclosures

Rating and Price Target History for: JPMorgan Chase & Co. (JPM) as of 05-10-2017



Ownership and Material Conflicts of Interest

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Neutral (N): We expect the stock to perform in line with its peers on a risk adjusted basis over the next 12 months.

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A Neutral (N) represents a total rate of return of -15% to +15% on a 12-month horizon. As of July 31, 2015, an analyst may assign a Neutral (N) rating even if the total rate of return is not between -15% and +15% if the analyst does not feel conviction that the stock is a Buy (B) or a Sell (S) and particular circumstances exist, such as, for example, if the stock has an extraordinarily high dividend yield or is low-priced. If an analyst assigns a Neutral (N) rating utilizing the foregoing exception, they will provide an explanation as to their reasoning.

A Sell (S) represents a total rate of return -15% or below on a 12-month horizon.

Return potential represents potential and projected dividends and the price differential between the current share price and the price target expected on a 12-month time horizon associated with the price target. Price targets are required for all covered stocks.]

Disclosures



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