PUBLIC TRUST® ADVISORS

Credit Research Process

GFOA

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Credit Analysis

"I know you think you understand what you thought I said, but I'm not sure you realize that what you heard is not what I meant."

- Alan Greenspan

"Any informed borrower is simply less vulnerable to fraud and abuse."

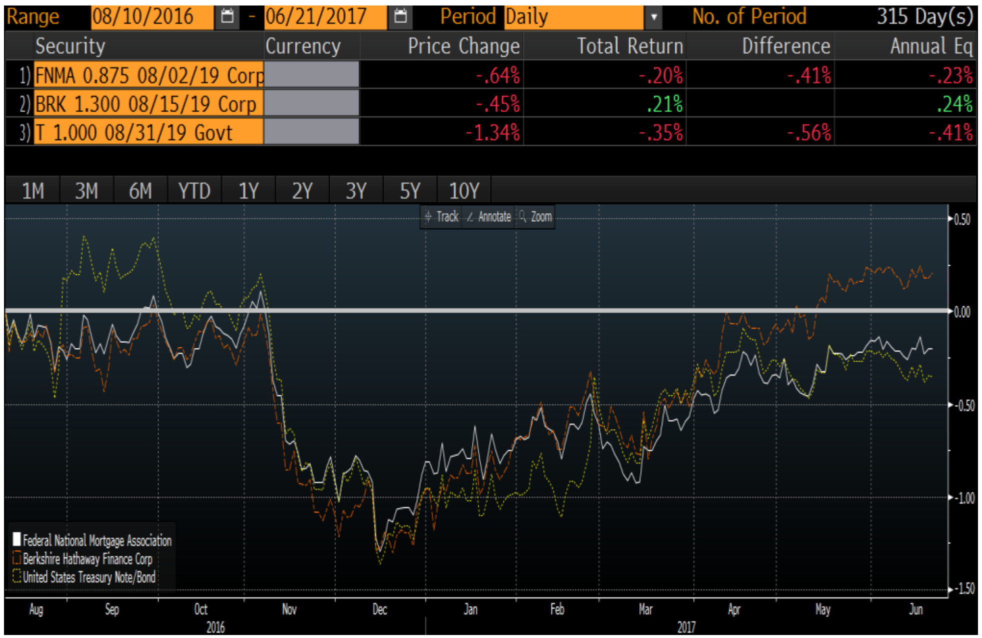
-Alan Greenspan

Dismal Science

Total Return and Yield Differentials

- In the wake of the Global Financial Crisis, it is challenging to evaluate risk adjusted returns.

- Allocation in different asset classes allow for diversification of risk adjusted returns. Below are the historical total returns between treasuries, government agency (FNMA), and a corporate note (Berkshire Hathaway).



Range 08/10/2016 - 06/21/2017 Period Daily No. of Period 315 Day(s)

Security	Currency	Price Change	Total Return	Difference	Annual Eq
1) FNMA 0.875 08/02/19 Corp		-.64%	-.20%	-.41%	-.23%
2) BRK 1.300 08/15/19 Corp		-.45%	.21%		.24%
3) T 1.000 08/31/19 Govt		-1.34%	-.35%	-.56%	-.41%

BRK (Corp)

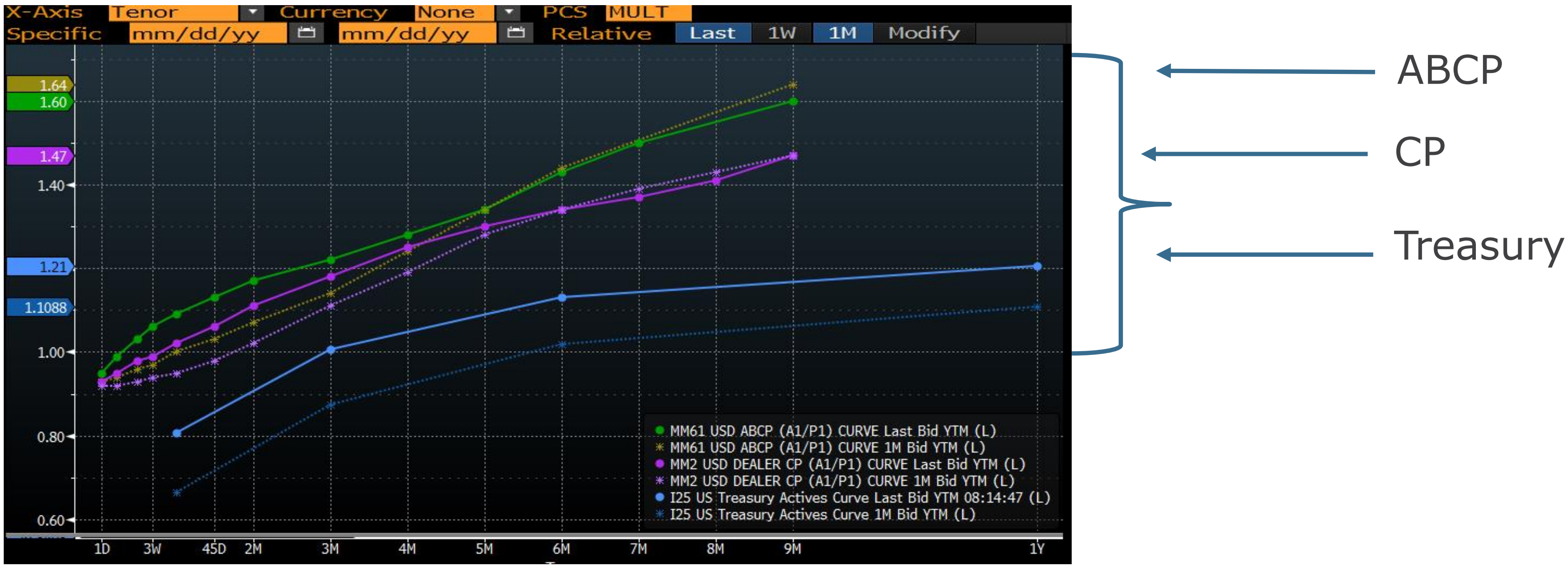
FNMA (Agency)

US GOV TREASURY

Source: Bloomberg

Total Return and Yield Differentials

- In the short-term markets, the yield differentials tell the story.
- Allocation in different asset classes allow for diversification of risk adjusted yields. Let’s look at the yield differentials between treasuries, commercial paper, and asset-backed commercial paper.



The Importance of Credit Research

- Why credit research so important:
  - Safety and liquidity always trump yield
  - Credit default
  - Credit migration

- How do you differentiate between same rated credit?
  - Fundamental analysis
  - Risk assessment and monitoring
  - Ratings migration – conversations with rating agencies
  - Credit Committee discussions

Approving an Issuer

Security/Issuer Identified

- Portfolio Management identifies

Develop Opinion

- Credit Team analysis
- IR discussion
- Rating agencies
- Team evaluation
- Risk codes

Credit Committee Decision

- Committee voting

Ongoing Monitoring

- Annual reviews
- Quarterly earnings
- Enhanced due diligence
- Hold code changes

Safety and Liquidity

- Safety of principal is the top priority

- Ability and willingness to repay debt

  - Fundamental analysis reveals the ability to repay debt
  - Qualitative assessment of management will inform the willingness to repay
  - Per Standard & Poor's definitions of long-term Issue Credit Ratings. The analyses, including ratings, of S&P Global Ratings and its affiliates (together, S&P Global Ratings) are statements of opinion as of the date they are expressed and not statements of fact or recommendations to purchase, hold, or sell any securities or make any investment decisions. S&P Global Ratings assumes no obligation to update any information following publication.
  - 'AAA' - An obligation rated 'AAA' has the highest rating assigned by S&P Global Ratings. The obligor's capacity to meet its financial commitment on the obligation is extremely strong.
  - 'AA' - An obligation rated 'AA' differs from the highest rated obligations only to a small degree. The obligor's capacity to meet its financial commitment on the obligation is very strong.
  - 'A' - An obligation rated 'A' is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher rated categories. However, the obligor's capacity to meet its financial commitment on the obligation is still strong.

Two Types of Risk

Credit Default

- Default is the failure to pay interest or principal on a loan or security when due. Default occurs when a debtor is unable to meet the legal obligation of debt repayment.
  - Worst case scenario

- The list of permitted investments in Florida reduces the risk of default as only 'A' rated or higher securities are allowed.

Credit Migration

- Migration risk is the risk that an issuer's credit rating is lowered below the acceptable rating within the investment policy and/ or state code.
- The risk describes the potential for direct loss due to a rating downgrade, as well as the potential indirect loss that may arise from a credit migration event.
- The market will reprice an issuer.
- Do we realize the loss?

Migrations

- Credit migration
  - Rating agencies
  - Credit Watch
- Actions to take
  - Reduction of internal codes or ratings
  - Do not add (DNA)
  - Sale of security
- Real World Examples
  - Deutsche Bank
  - Quest
  - Lehman Brothers

Risk Assessment and Monitoring

- Gather the fundamental metrics and analysis.
- Compare the metrics across the sector/industry peers.
- Categorize the risks along with the qualitative assessment of management.
- Synthesize the quantitative and qualitative factors to generate a credit opinion.
- Utilize a strengths, weaknesses, and threats framework to create enhanced due diligence.
- Monitor the enhanced due diligence items throughout the calendar year.
- Any unforeseen shocks might cause a suspension of purchases; in worst case scenarios, a reduction in exposures may be warranted.

Quantitative and Qualitative Metrics Around Ability to Repay

- Levels and forecasts of income and cash flows.
- Profitability, leverage, cash flows, liquidity, and asset evaluation.
- Off balance sheet items, contingent obligations, asset quality.
- Trends over time and peer comparison.
- Industry characteristics around growth prospects and the competitive landscape.
- Structural composition around asset-backed structures including external support, collateral, and liquidity support in some cases.

Specific metrics from financial statements

- Net debt and debt coverage levels (EBIT/Interest Expense, CFO/Capex, Cash/Total Debt).
- Returns on assets and returns on equity.
- Margins (EBIT, EBITDA, SG&A).
- Inventory and turnover (Inventory turnover, Accounts Receivables turnover, Accounts Payable turnover, cash conversion cycles).
- Capitalization (Short-term debt/equity, Long-term debt/equity, Total debt/capital, assets/equity).

Sample Snapshot (Exxon and ABCP program)

Trend	Executive Summary	
→	Fundamentals	Fundamentals have deteriorated since FY2013 but are projected to improve in FY2017.
↓	Leverage	Leverage has increased as Exxon has accessed capital markets to fund operations & shareholder friendly activity.
→	Industry Specific	Oil prices rose 50% in FY2016 and are projected to remain stable in FY2017.
↑	Segment	Exxon is diversified by business segment as their upstream, downstream, and chemicals businesses are strong
↑	Market Signals	Bond spreads tightened post-issuance and CDS has tightened over the past year.
↓	Shareholder Friendly	Exxon remains committed to growing its dividend.
→	M&A	Exxon has only engaged in bolt-on M&A in recent years but a mega deal cannot be ruled out given history of dealmaking.
→	Ratings Migration Assessment	Low - Exxon remains AAA/Negative at Moody's but is AA+/Stable at S&P
↑	Current Quarter Results	Strong in top & bottom line metrics. Free cash flow in the quarter amounted to $3.5 billion.

Key	
↑	Positive Trend
↓	Negative Trend
→	Neutral Trend

Enhanced Due Diligence: Key metrics in need of heightened, on-going surveillance:

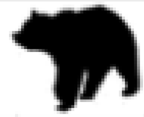
- **Free Cash Flow Performance:** Exxon generated $5.9 billion in FCF in FY2016. This was not enough to cover the company's $12.5 billion dividend. As a result, they tapped the capital markets to fund this shareholder friendly activity. Projections for FY2017 have Exxon generating $18.0 billion in free cash flow. This projected level of FCF generation is important for the company as they are committed to growing their dividend.
- **Shareholder Friendly Activity:** Dividends remain a very important capital return tool for Exxon. Management has stated their commitment to growing their dividend. Dividends amounted to $12.5 billion in FY2016 and are predicted to increase in FY2017.
- **Capital Expenditures and M&A:** Exxon spent $16 billion in capital expenditures in FY2016, and the company's projection for FY2017 is $22 billion in capital expenditures. Capital expenditures are necessary to grow the business and replace reserves. M&A is another route to replace reserves, and Exxon recently completed a $5.6 billion deal for Permian assets. The company has a history of large scale M&A, and this will be an area that the credit team monitors closely.

Analysis At A Glance

Section Topic	Page	
Sector Credit Strength	2	●
Program Features and Structure	3	+
Credit Enhancement	4	+
Liquidity Support	5	+
Administrator	5	+
Ratings	6	●
Disaster Scenarios	6	+
Underlying Assets	7	+
Program Metrics	7	+
Conclusion	8	+

Sample Snapshot (Exxon cont.)

Industry and Commodity Scenarios

	
OPEC and Non implement More aggressive cuts.	Competition for market share resumes.
Geopolitical instability in key exporting regions.	Macroecon growth shock reduces demand growth.
Steeper-than-expected decline in mature oil fields.	Tech/productivity improvements exceed current expectations.
Demand growth accelerates on lower prices pushing refinery margins higher.	Uncompleted well inventory falls and boosts US production.

	Spot	Q1 17	Q2 17	Q3 17	Q4 17	2017	2018	2019	2020
NYMEX WTI $/BBL	54.0	54.9	56.7	57.3	57.4	56.6	57.1	56.8	56.9
Forecast (Median)		52	55	56	58	55	60	60	63
ICE Brent $/BBL	57.0	57.4	58.6	58.8	58.7	58.4	58.4	58.2	58.4
Forecast (Median)		53	55	56	58	55.75	61	62	65

Source: Bloomberg

Sample Snapshot (Exxon cont.)

Shareholder Friendly Surveillance

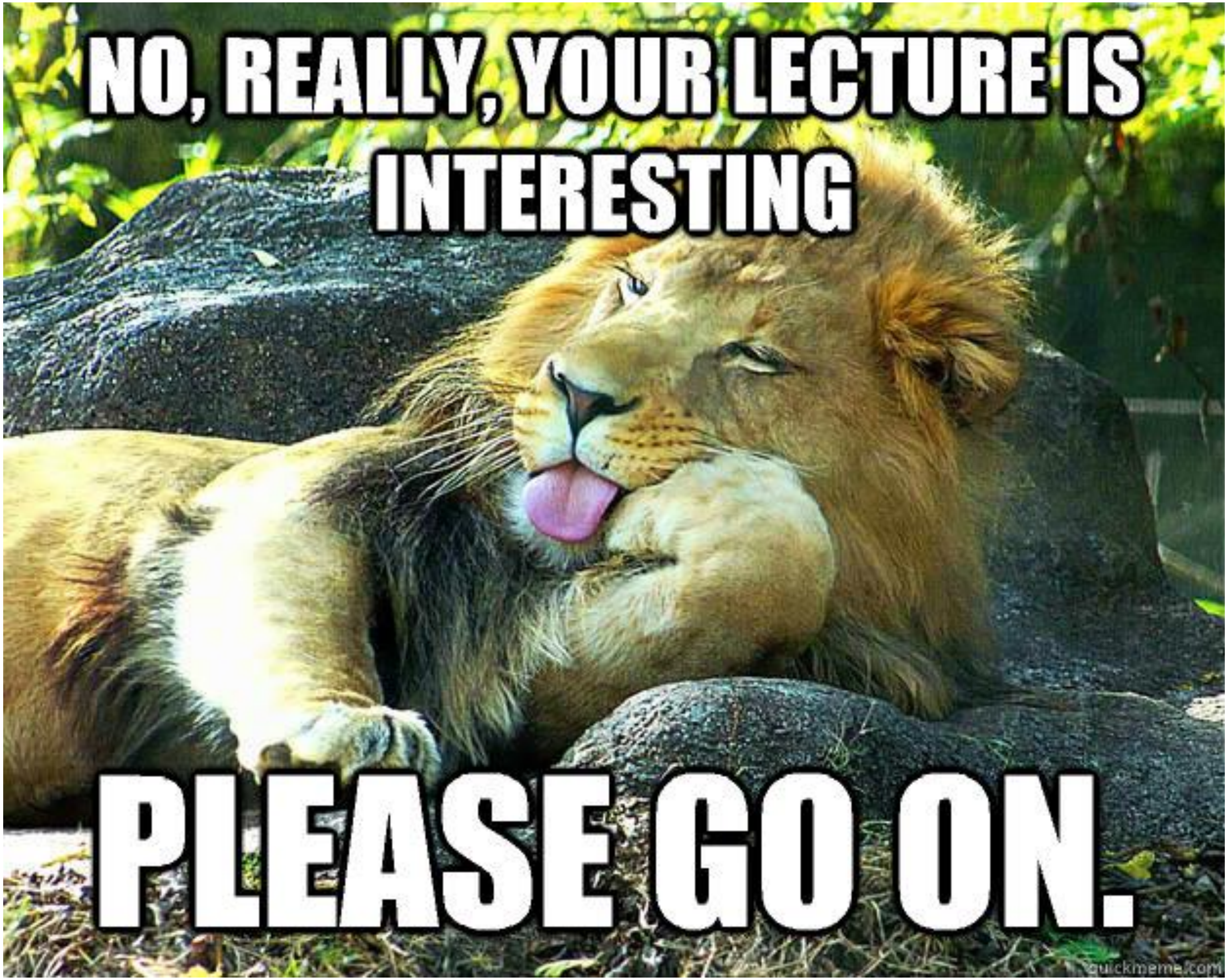
Return of Capital (ROC) to Equity Investors

	2010	2011	2012	2013	2014	2015	2016	12/31/2016
Dividends /Share	1.74	1.85	2.18	2.46	2.70	2.88	2.98	2.98
Payout Ratio %	28.82%	22.71%	23.22%	34.31%	35.57%	74.86%	158.84%	158.84%

- Exxon's dividend payout ratio has risen significantly since FY2014 as net income fell dramatically and dividends continued to grow.
- Exxon remains committed to continuing to grow their dividend. Exxon's dividend totaled approximately $12.5 billion in FY2016 and should grow modestly in FY2017.
- The commitment to growing dividends even as net income and FCF have fallen significantly is a credit negative.

ROC to EBITDA Ratio

	2010	2011	2012	2013	2014	2015	2016
$ returned to shareholders/EBITDA	39.34%	44.59%	47.38%	46.75%	48.17%	52.15%	57.75%
Common Dividends Paid	8,498	9,020	10,092	10,875	11,568	12,090	12,453
Repurchase of Common Stock	13,093	22,055	21,068	15,998	13,183	4,039	971
Total $ returned to shldrs	21,591	31,075	31,160	26,873	24,751	16,129	13,424
EBITDA	54,882	69,687	65,769	57,483	51,379	30,931	23,244


NO, REALLY, YOUR LECTURE IS INTERESTING
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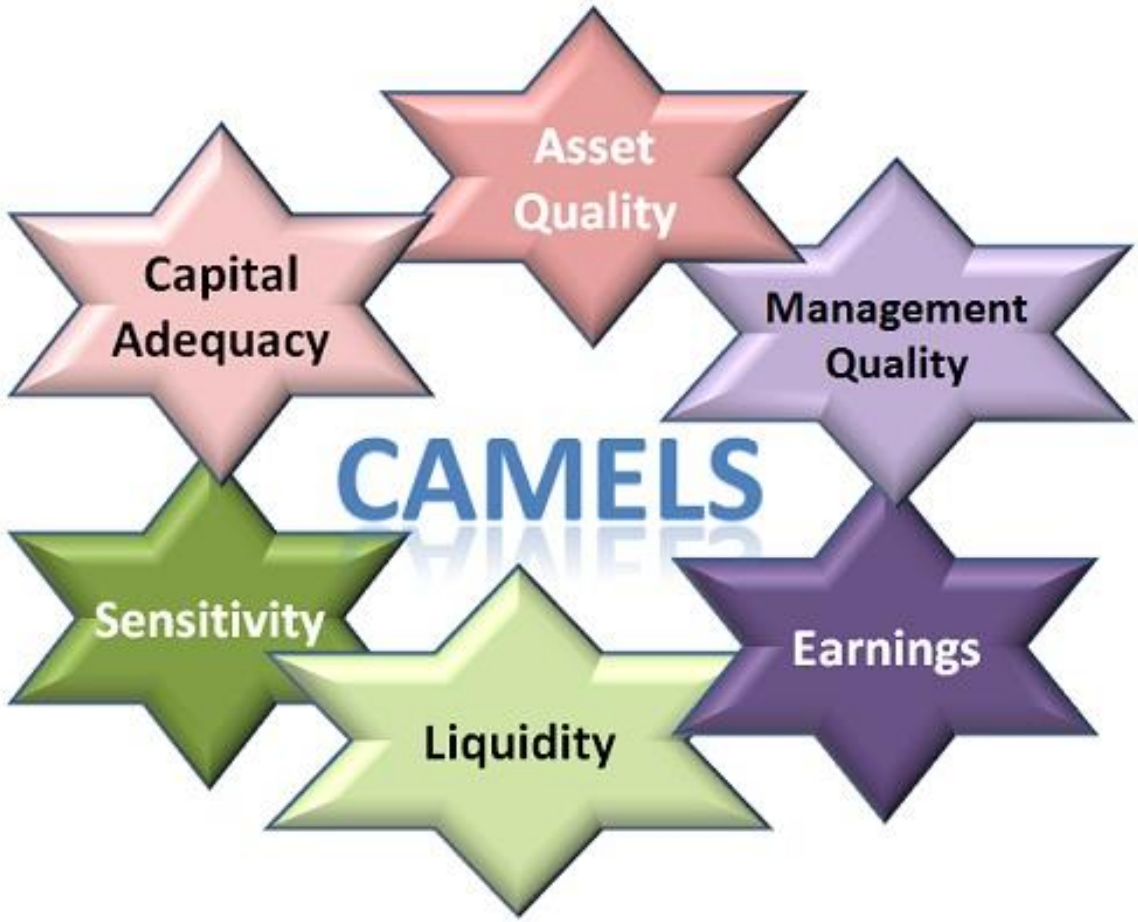
CAMEL framework for financial companies



CAMEL Framework for Financial Companies (Capital and Liquidity) Credit Agricole Example

Deposits were €502 billion, up €38 billion, or 8.1%, from 2014. Gross loans to customer deposits decreased in 2015 at 67.2% from 69.6% in 2014. This is a credit neutral metric.

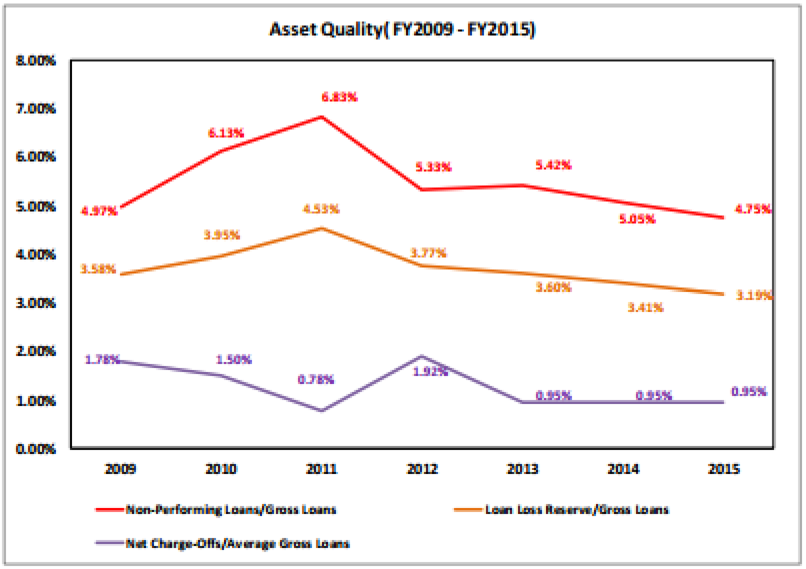
Leverage decreased: average total assets to average total equity came in at 25.7x in 2015, down from 28.3x in 2014. Capital levels remain high comparatively with their estimated fully loaded Basel III core equity Tier 1 ratio at 10.7% up from 10.4% in 2014, their total capital ratio was 19.6% from 16.1%; debt to assets at 31.5% down from 35.8% the previous year. Another positive, liquid assets to total assets grew to 46.0% in 2015 from 42.8% at year-end 2013.

The balance sheet metrics above represent positive attributes from a credit perspective.

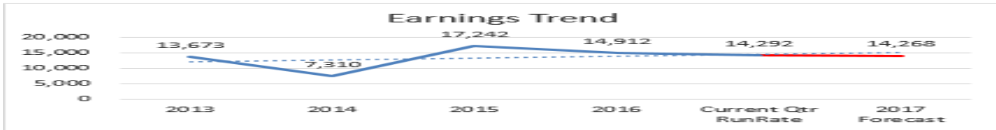
CASA has could access the market when it found it advantageous to do so, as well as to meet normal operating needs or those that require funding due to acquisitions. During the tougher economic times witnessed, CASA, like most banks, had some difficulty in funding, but that risk has certainly dissipated. CASA employs various funding sources, including the issuance of senior and subordinated debt issues, commercial paper (both secured and unsecured), preferred share issues, and securitization programs.

CASA's deposits totaled €502 billion at year-end 2015; liquid assets to total assets were 46.0% in 2015 from 43% in 2014. CASA's loan to deposit ratio at year-end 2014 was a strong positive metric at 67.2% slightly lower than the 69.6% in 2014. The firm experienced a deposit increase of 8.1% in 2015, from a decline of 0.4% in 2014. Their deposits to assets ratio totaled 33% at year-end 2015 from 29% in 2014. These metrics point to a better than adequate liquidity position for CASA.

CAMEL Framework for Financial Companies (Asset Quality) Credit Agricole Example



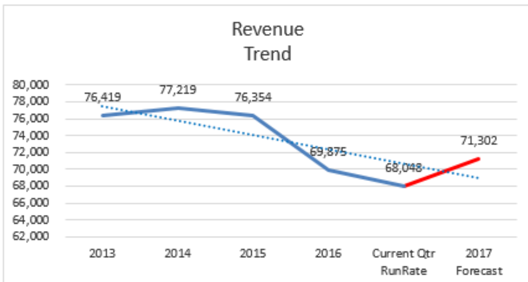
CAMEL Framework for Financial Companies (Earnings) Citibank Example



- Net income peaked in FY2015 at $17.42 and decreased in FY2016 to $14.9 billion. The banking environment has been challenging for global banks such as Citigroup due to anemic growth, low interest rates, and added regulation.
- Net income is forecasted to decrease slightly in FY2017 to $14.3 billion. While the forecasted decrease is only slight it is still a negative and would extend the 1 year downward trend.

Top-line Revenue

	12/31/2016	Prior Quarter	Prior Year Period	% Change vs Prior Qtr	% Change vs Prior Yr Pd
	Q4				
Revenue ($)	17,012	17,760	18,456	-4.21%	-7.82%



- Net revenue has decreased over the past several years as Citi has worked to divest of non-core businesses
- Net revenue is forecasted to increase in FY2017 due to the steepening of the yield curve, the pickup in capital markets activity, and the strengthening of Citi's core franchises.

Bottom-line Earnings

	12/31/2016	Prior Quarter	Prior Year Period	% Change vs Prior Qtr	% Change vs Prior Yr Pd
	Q4				
Net Income ($)	3,573	3,840	3,335	-7%	7%

CAMEL framework for financial companies management

- Meet with management
  - Conferences
  - Investor relations calls
  - Speak with other analysts (Sell-side)

- Track record
  - History through the crisis
  - Management shake ups post-crisis
  - Restructuring and monitoring these processes

Allocations

Asset types

- Corporates
  - Relative Value
  - Spreads and position in the credit cycle
  - General diversification
  - Sector allocation
  - Idiosyncratic risks

- Asset-Backed Securities
  - Relative Value
  - Structure is key
  - Cash flow waterfalls
  - Levels of subordination
  - Pre-payment risks

Asset types

144 (A)

- Unregistered (SEC) offer and sale issued by a U.S. or foreign company.
- Qualified Institutional Buyer (QIB). Own and invest a minimum of $100 million in securities on a discretionary basis, broker-dealer threshold is $10 million.
- Typically, transactions conducted under Rule 144A include offerings by foreign investors looking to avoid U.S. reporting requirements, private placements of debt, and preferred securities of public issuers and common stock offerings from issuers that do not report.
- The rule restricts purchases and sales to QIBs or accredited investors.
- Accredited investors.
- Any trust, with total assets in excess of $5,000,000, not formed for the specific purpose of acquiring the securities offered whose purchase is directed by a sophisticated person.

Asset types

Commercial Paper

- CP is essentially an unsecured promissory note issued by a financial or nonfinancial entity for a specific dollar amount and maturity date.
- CP is a low-cost alternative to bank loans due to exemption from Securities and Exchange Commission (SEC) registration. The exemption is based on Section 3(a)3 of the Securities Act of 1933 (the Act), which requires that proceeds derived from CP with a maximum maturity not to exceed nine months be used to finance current transactions.
- Similar to T-bills, CP is typically a discounted security, where the investor purchases at a price less than par and receives face value at maturity.
- CP provides slightly higher yields relative to T-bills with same maturities because of the moderate counterparty risk inherent in CP, as T-bills are backed by the full faith and credit of the United States government.
- Average spread between CP and T-bills
- January 2001 – January 2017 – 41 basis points
- October 2007 – October 2008 – 136 basis points
- October 2008 post Lehman bankruptcy – 325 basis points
- June 2017 – 23 basis points

Asset types

Asset – Backed Commercial Paper

- Asset Backed Commercial Paper (ABCP) is commercial paper that is “backed” by a specific, designated flow of funds.
- The flow of funds backing the paper most often come from accounts receivable; typically:
    - Auto loans
    - Credit Card loans
    - Leases
    - Student Loans
- A finance company, the originator, generates a high volume of consumer loans, for example auto loans. The auto finance company would like to sell these loans, so it can make more loans.
- Securitization: The originator bundles a group of loans into a pool, packaged to sell. A pool represents a particular asset type from a seller or originator. For example, the auto finance company, such as Toyota Motor Credit Corp., might sell its auto loan receivables balance to a Special Purpose Vehicle (SPV)
- An SPV is a bankruptcy-remote entity that acquires and finances specific assets; in this case, the receivables of the auto lender.

Conclusion

> " There are known knowns. These are things we know that we know. There are known unknowns. That is to say, there are things that we know we don't know. But there are also unknown unknowns. There are things we don't know we don't know."
>
> \- Donald Rumsfeld

1. Credit to JRR Tolkien, Elijah Wood, and Peter Jackson

Questions?

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