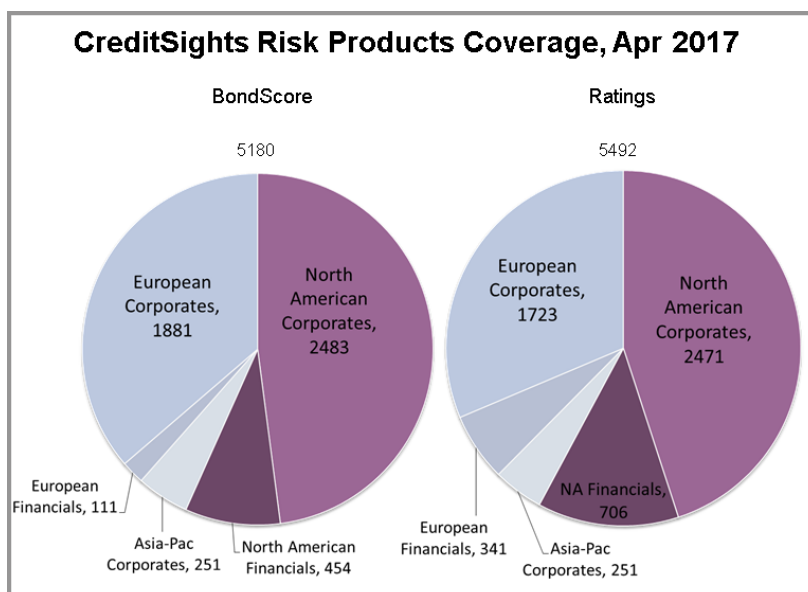


CreditSights Risk Products produces **medium-term ratings** and short-term default measures and is an excellent complement to our fundamental credit research. **Website delivery** provides an efficient screening and credit risk surveillance tool. **Regular commentary** from our fundamental analyst team is also featured.

Risk Products: Active Coverage



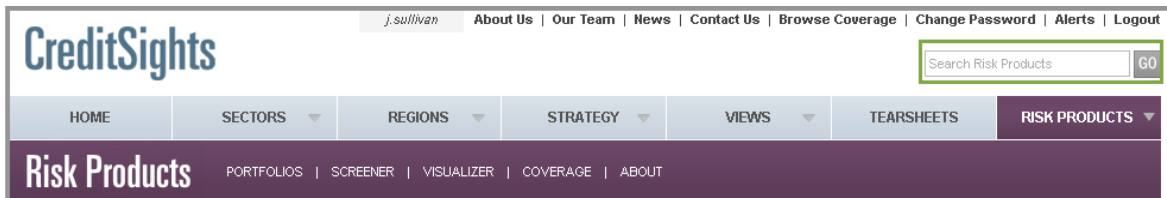
Risk Products: Outputs and Interpretation

- **1-year forward PD (probability of default)** (known as "**Credit Risk Estimate**" or "**CRE**"). *Identify short-term default risks, rapid changes in a company's credit profile and short-term relative value opportunities.*
- **Medium-term credit rating ("CreditSights Rating" or "CSR")**. Non-financial CSRs are based on a cumulative 5-yr PD which is mapped to one of 22 ratings buckets. The CSR for financial companies is based on historical ratings. *Address potential ratings migration and standalone medium-term credit risk*
- **CRE-based Credit Risk Level ("CRL")** allows for easy interpretation of a company's CRE. *Provided in five buckets from very low to very high.*
- **"CSR Trend" indicator** highlights directional change in a company's CSR.
- **CRE-based Credit Risk Trend ("CRT") indicator** highlights improvement or deterioration in a company's CRE.
- **3-month CreditSights Rating (CSR) Outlook** alerts you to those companies that may see a CSR upgrade or downgrade soon.
- **Input calculator** allows users to change the input ratios used in a company's CRE, CRL and CSR estimation to reflect any anticipated scenario. *Reflect future expectations for a company's fundamental and equity market profiles.*
- **New private company** CREs for over 150 companies, along with the ability to generate Ratings and CREs for private companies using the input calculator and a new bulk download template.
- Easy ability to **track week-to-week changes/updates** in CRLs, CSRs, analyst recommendations and CreditSights analyst ratings comments with custom e-mail alerts.

The Risk Products section of CreditSights' website is the best place to view CreditSights Risk Products output. Log in at www.creditsights.com and follow the "Risk Products" link on the top navigation bar.

Website: Individual Company Analysis

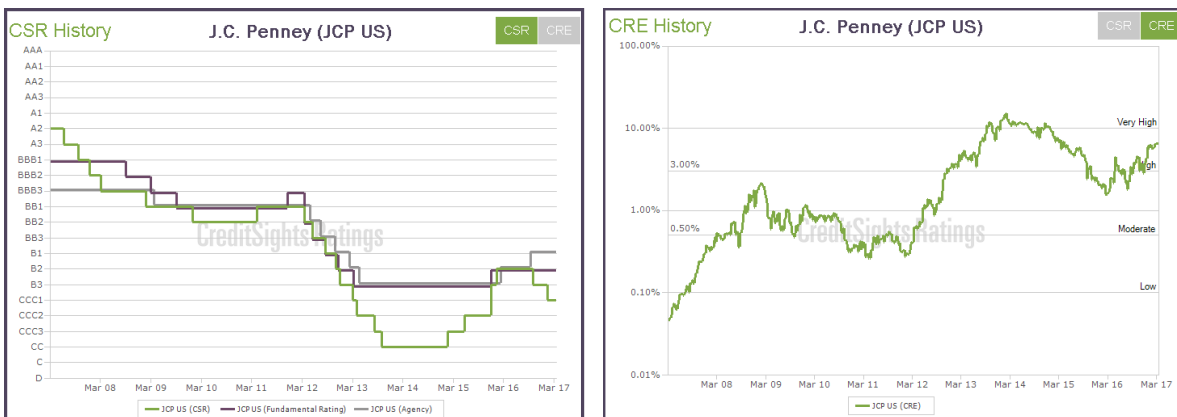
- Enter a ticker or company name in the box labeled "Search Risk Products" in the upper-right hand corner of any Risk Products page. One can also navigate to a company's page from a portfolio at any time.



The "Company View" page provides a table summarizing all key CRE and CSR outputs;

J. C. Penney Co., Inc. (JCP US)							CCC1, High Volatility						
PRINT PAGE ★ SEE DATA NOTES							CS RESEARCH: <input checked="" type="checkbox"/> RETAIL / GROCERS <input checked="" type="checkbox"/> JCP US						
CALCULATION DATE		FUNDAMENTAL DATE		MODEL	AGENCY COMPOSITE RATING (ACR)			NOTCHES DIFF		CS ANALYST RECOMMENDATION			
27 Mar 2017		31 Oct 2016		Consumer	CURRENT	LAST CHG	PREV	-3		Outperform			
CREDITSIGHTS RATING (CSR)							CREDIT RISK ESTIMATE (CRE: 1-YR PD)						
CURRENT	LAST CHG	PREV	TREND 1Y	TREND 3Y	OUTLOOK	VOLATILITY	CURRENT CRE (1-YR PD)	CREDIT RISK LEVEL (CRL)	CRL LAST CHG	3-YEAR PD	5-YEAR PD	TREND 6M	TREND 1Y
CCC1	9	B3	⬇️	⬆️	⬇️	High	6.57%	High	15 (Moderate)	16.85%	23.18%	—	⬇️

As well as graphical histories of the CRE, CRL, CSR, Fundamental Rating (FR) and Agency Composite Rating (ACR) for up to the past decade.



The ability to review charts showing the evolution of the input ratios used in a company's CreditSights Risk Products output and a comparison of current input ratios across up to four comparison companies is also provided (not shown).

A **scenario calculator** displaying values for all independent input ratios used to calculate a company's CreditSights Rating is provided for every company.

Reflect **fundamental and equity market assumptions**. Gauge the impact of a **potential acquisition** (shown right for AEE US buying LNT US).

Disable the equity impact on a company's rating to see a company's **fundamental-only rating** and to derive a fundamental rating for similar private companies.

Percentile rankings for both original and calculated values are also provided (shown right for AEE US).

Calculator

CALCULATED CSR: **BBB2** | Current CSR: BBB2
 CALCULATED CRE: **0.15%** | Current CRE: 0.16%
 CALCULATED CRL: **Low** | Current CRL: Low

FUNDAMENTAL (USD)	ORIGINAL	MODIFIED	CHANGE
GDP			
Earnings Vol (%)	7.36		
EBITDA (mn)	2,097	3103.56	48%
Total Assets (mn)	22,884	35012.53	53%
FFO (mn)	1,648	2521.44	53%
Interest Expense (mn)	337	508.87	51%
Minority Interest (mn)	0		
Net Income (mn)	604	984.52	63%
Total Debt (mn)	7,195	14965.63	108%
Total Equity (mn)	6,846	14718.93	115%
Ignore Equity Contribution:			
Market Cap (mn)	9,154.62	15654.40	71%
Total Liabilities (mn)	16,038	24377.76	52%
Idiosyncratic Vol (%)	16.19		
Alpha Percentile	40		

INPUT TYPE	ORIGINAL		CALCULATED	
	VALUE	P-TILE	VALUE	P-TILE
Total Assets	22,884mn	85	35,012.52mn	90
Leverage	51.24%	31	50.42%	29
Interest Coverage	6.22x	83	6.1x	82
Cash Flow	22.9%	68	16.85%	36
Earnings Vol	7.36%	62	7.36%	62
Profitability	8.82%	35	6.89%	19
Market Leverage	63.66%	77	60.9%	73
Idiosyncratic Vol	16.19%	5	16.19%	5
Alpha	0.00002	40	0.00002	40

Risk Products Website: Portfolio Creation and Analysis

- Navigate to the Risk Products home page and follow either "create portfolio" button in the "My Portfolios" area of the page to **build an equity ticker-driven, static portfolio**.
- Follow the "Screener" link to **build a criteria-driven dynamic query**. A sample screen is below, searching for companies that have an outperform recommendation from CreditSights' analysts, a positive CSR outlook, and a ratings comment from CS analysts.

Screener

▼ Hide Filters

2 companies match

REGIONS [All None](#)
 North America Europe Asia Pacific

SECTORS [All None](#)
 Basic Industries Consumer Energy
 Financial Services Manufacturing TMT
 Transportation

TOTAL DEBT [All None](#) **1 mn to 200,000 mn** Excl.

CSR OUTLOOK [All None](#) **CSR VOLATILITY** [All None](#)
 High Medium Low

CS ANALYST RECOMMENDATION [All None](#)
 Outperform Market perform Underperform No Recommendation

CREDITSGIGHTS RATING (CSR) [All None](#) **C to AAA**

CSR 1Y TREND to

CSR 3Y TREND to

AGENCY COMPOSITE RATING (ACR) [All None](#) **C to AAA**

NOTCHES DIFFERENCE (ND) [All None](#) **2 to 10**

CREDIT RISK ESTIMATE (CRE) [All None](#) **0% to 80%**

CREDIT RISK LEVEL [All None](#) **Very Low to Low**

- All column headings in the portfolio view are able to be sorted and the columns displayed are user-driven. Export functionality is available, while flat files containing all outputs are also available at an additional charge.

COMPANY	CREDITSIGTS RATING (CSR)	CSR TREND 1Y	CSR OUTLOOK	AGENCY COMPOSITE RATING (ACR)	NOTCHES DIFF	CS ANALYST RECOMMENDATION
HUN US Huntsman Corp.	BB2	▲	—	B1	2	Outperform (29 Mar 2017)
DOW US The Dow Chemical Co.	A2	—	▲	BBB2	3	Outperform (25 Feb 2009)

The image above shows the results from the query outlined above for the week of 4 Apr 2017.

Risk Products: Data Visualizer

- The new Data Visualization Spreadsheet (DVS) allow users to take maximum advantage of the data which drives our **non-financial** Risk Products models, as well as the outputs of those models, presented in a standard format in numerous tables and charts.
- A historical view of all inputs and outputs is also available, in contrast to the limited historical dataset available in the current flat files.
- A web-based version of the Visualizer will be available sometime in 2017.

Consumer Sector: Risk Products Input And Output Metrics Across All Companies And By ACR Tier														
	Fundamental Metrics						Equity Market Metrics			Default Probabilities				
	Total Assets (\$mn)	Leverage	Interest Coverage	Cash Flow	Earnings Volatility	Profitability	Market Leverage	Idiosyncratic Volatility	Alpha Percentile	1-Year	2-Year	3-Year	4-Year	5-Year
Average	14,151	4.07	13.3x	0.07	7.3%	12.0%	37.9%	19.4%	47	0.67%	1.60%	2.48%	3.50%	4.61%
Median	5,349	3.75	7.0x	0.06	4.0%	10.6%	35.0%	16.7%	47	0.09%	0.45%	0.90%	1.61%	2.52%
≥=AA	110,239	2.17	29.1x	0.13	2.4%	19.8%	24.6%	11.8%	50	0.02%	0.08%	0.20%	0.42%	0.66%
A	29,767	2.10	29.7x	0.14	4.1%	18.9%	21.6%	13.6%	50	0.02%	0.11%	0.26%	0.55%	0.88%
BBB	15,658	3.22	14.0x	0.10	4.2%	13.6%	32.8%	15.2%	48	0.08%	0.35%	0.71%	1.27%	1.93%
BB	7,315	4.14	11.3x	0.08	7.4%	11.3%	38.3%	19.6%	47	0.27%	0.93%	1.68%	2.68%	3.83%
B	5,711	5.40	5.8x	0.04	9.6%	9.1%	50.3%	24.1%	47	0.89%	2.48%	3.97%	5.62%	7.42%
≤=CCC	2,737	6.11	1.8x	0.00	13.5%	6.9%	66.5%	39.1%	29	5.80%	10.95%	14.74%	17.80%	20.73%

Source: CreditSights Risk Products

Average and Median Market Leverage, Idiosyncratic Volatility, Alpha and Default Probabilities are calculated for public companies only.

For each rating tier, numbers shown are averages across the rating tier

Risk Products: Supported by CreditSights' Analysts

- CreditSights' fundamental analysts played an **integral role in the creation of the fundamental factor models** that underlie Risk Products' methodology.
- CreditSights' **fundamental analyst recommendations are also included** in CreditSights Risk Products.
- Many analysts making use of the Risk Products calculator to frame a company against a narrow peer group and provide forward expectations for a company's business.

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