

DATA REPORT

6 December 2018

 Rate this Research

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Corporates

Industry credit risk: recent trends for global non-financial corporations, 2018

Summary

This publication updates Moody's annual Industry Credit Risk report for non-financial, non-utility corporate issuers. The report explores credit risk at the industry level. The industry aggregates are listed in Exhibit 1 with detailed definitions presented in the Appendix¹. We present indicators of default risk and rating transition risk, both in the context of recent history as well as forecasts over the next twelve months. The forecasts were generated with Moody's Credit Transition Model (CTM),² not by the analysts who assign ratings to companies in these industries.³ In addition we explore the market-implied ratings across industries to identify those sectors which are currently trading at a discount as measured against fundamental credit ratings. Our principal findings include:

- » Credit environment was benign during the 12-month period ended the third quarter of 2018 (the current period) from the perspective of default rate and rating drift, the latter of which measures the overall direction of credit quality changes.
- » Of the 13 industries studied, seven experienced lower default rates in the current period than in the same period ended a year prior (the prior period). Compared with the historical averages, the default rates in the current period were lower in ten industries and higher in the other three.
- » Seven industries had better rating drifts in the current period than in the prior period. The current rating drifts were better than their historical averages in 12 of the 13 industries.
- » The default rate forecasting model predicts that the Retail & Distribution, Services, and Media sectors will have the highest risks of default over the next 12 months. However, our model also indicates that the default rate for Retail & Distribution will fall significantly in the coming year.
- » The relative industry default risk as indicated by market-implied ratings is in broad agreement with the relative risk implied by Moody's ratings. The rank order correlation between Moody's and bond-implied ratings is 75%.

Data and Methodology

This report studies non-financial, non-utility corporates with outstanding Moody's rated debt.⁴ Exhibit 1 shows the list of industries. The detailed definition of each industry can be found in the Appendix. We consider an issuer's senior unsecured rating or, absent such a rating, its senior unsecured rating estimated from rated outstanding debt.⁵ All the forward looking exhibits and exhibits showing current statistics presented in this report are created from the cohort formed as of October 1, 2018. The exhibits presenting most recent values of risk measures are created from the cohort formed as of October 1, 2017, the exhibits presenting the risk measures from one year before are created from the cohort formed as of October 1, 2016, and historical averages consist of issuer-weighted averages of monthly cohorts from January 1983 through October 2017.

Exhibit 1

List of Industries

Industry	
Aerospace & Defense	Telecommunications
Automotive	Media
Consumer Products	Metals & Mining
Manufacturing	Retail & Distribution
Chemicals	Services
Energy & Environment	Transportation
Healthcare	

Source: Moody's Investors Service

Exhibit 2 presents summary statistics by industry covering the last 12 months. Exhibit 3 presents the current distribution of issuers in each industry by geography.

Exhibit 2

Summary Statistics*

Industry	Median Rating (Most Recent)	Speculative Grade Share (Most Recent)	Total Count (Most Recent)	Newly Rated Issuers (Most Recent)	Withdrawn Issuers (Most Recent)	Defaults (Most Recent)
Aerospace & Defense	Ba3	67.1%	79	14	0	0
Automotive	Ba1	51.9%	135	17	0	0
Chemicals	Ba3	62.8%	218	31	0	0
Consumer Products	B1	69.5%	593	90	79	8
Energy & Environment	Ba2	57.6%	502	66	35	21
Healthcare	B2	60.1%	178	26	13	3
Manufacturing	Ba3	62.5%	510	68	54	4
Media	B3	77.8%	167	13	16	3
Metals & Mining	Ba3	60.6%	170	17	20	4
Retail & Distribution	B3	77.3%	260	29	23	16
Services	Caa1	86.5%	445	88	70	8
Telecommunications	B2	73.4%	493	77	47	4
Transportation	Ba1	52.3%	172	17	11	2

* Most recent period covers the 12-month period from October 1, 2017 to September 30, 2018.

Source: Moody's Investors Service

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody's.com for the most updated credit rating action information and rating history.

Exhibit 3

Geographic Distribution

Industry	Total Count	Asia Pacific	Europe	Latin America	Middle East & Africa	US & Canada
Aerospace & Defense	79	0	10	3	0	66
Automotive	135	21	50	1	0	63
Chemicals	218	18	67	8	2	123
Consumer Products	593	33	171	29	3	357
Energy & Environment	502	53	73	37	4	335
Healthcare	178	3	60	0	1	114
Manufacturing	510	139	108	24	7	232
Media	167	1	61	2	0	103
Metals & Mining	170	37	40	11	6	76
Retail & Distribution	260	14	59	6	0	181
Services	445	45	101	9	0	290
Telecommunications	493	36	106	20	12	319
Transportation	172	36	47	15	4	70

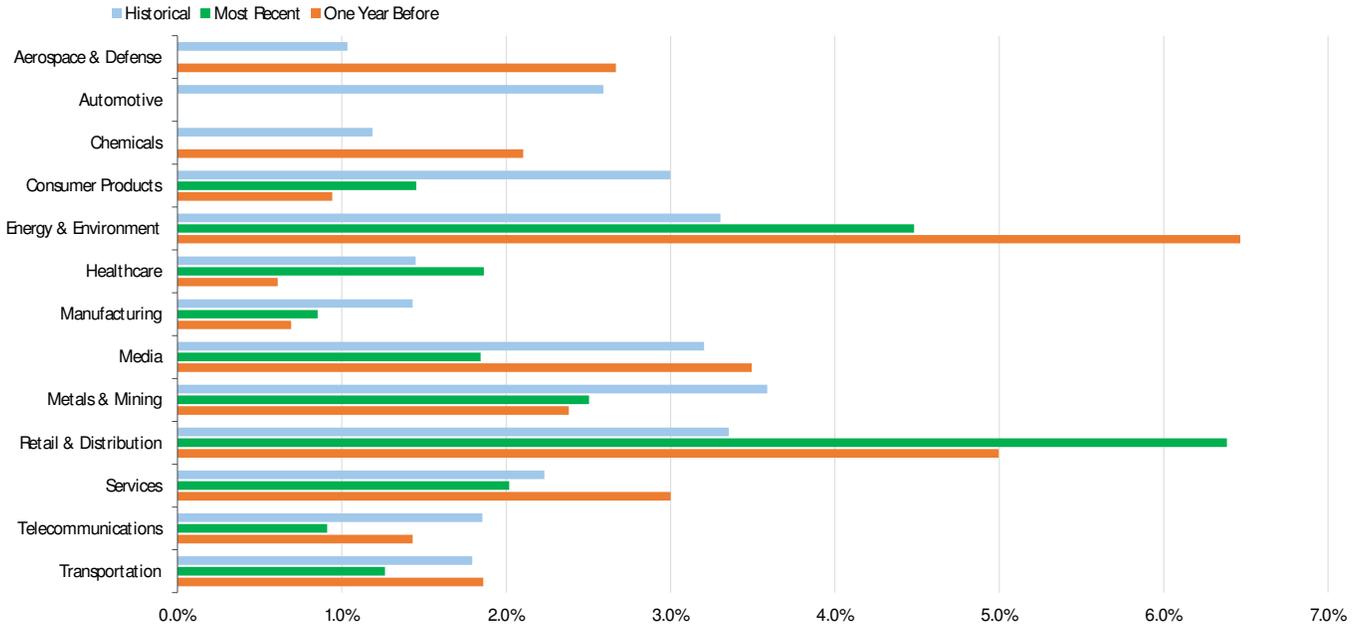
Source: Moody's Investors Service

Recent Trends and Historical Experience

Exhibit 4 presents the most recent 12 month default rates of various sectors along with the comparable rates from a year ago as well as their historical averages. Note that these are whole-industry default rates as opposed to, for example, speculative-grade default rates. Compared with their historical averages, the current default rates are lower in 10 out of the 13 industries.⁶ Specifically, no defaults were recorded in the Aerospace & Defense, Automotive, and Chemicals industries in the past 12 months. On the other hand, Energy & Environment, Retail & Distribution, and Healthcare industries had noticeably higher default rates than their historical averages. Most industries have similar or lower default rates compared to one year ago. The only exceptions are Retail & Distribution, Healthcare, and Consumer Products industries, with significantly higher default rates than one year ago.

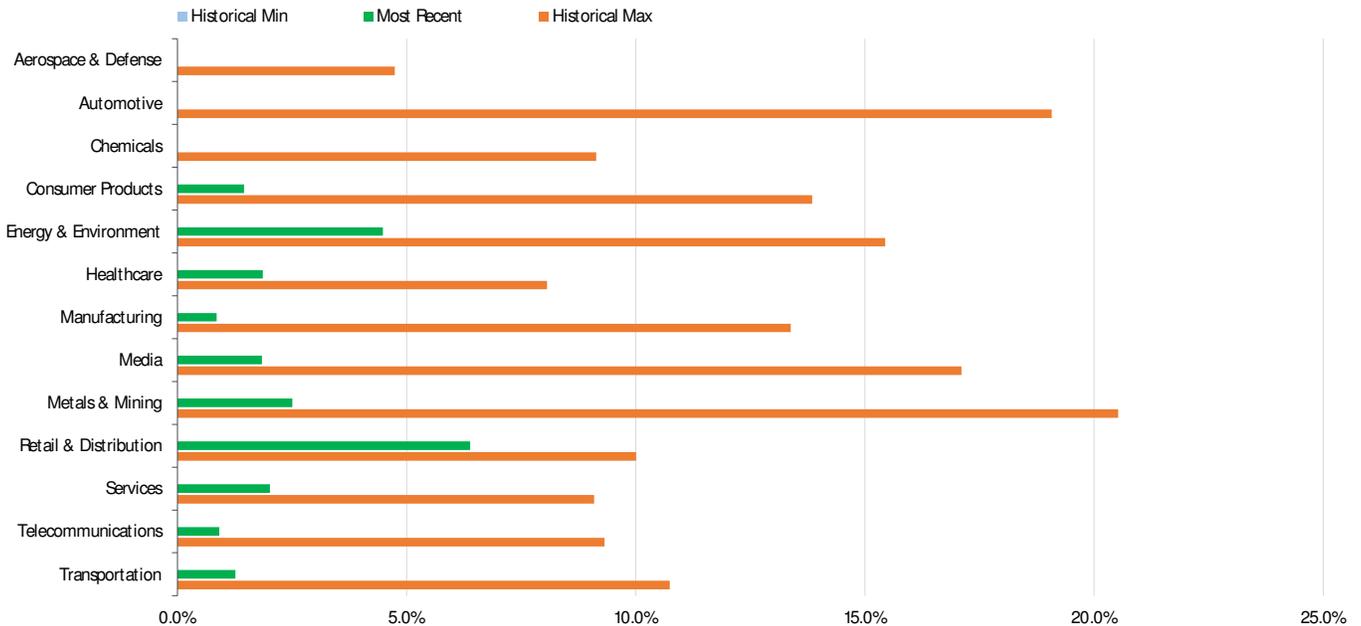
Exhibit 5 presents the historical maximum and minimum of the default rates across industries and compares them with the current default rates. While it is not surprising that the historical minimum of default rates are zero as all industries have had great years, we can see that the current default rates of all industries are way below their historical maximal levels.

Exhibit 4
 12 Months Default Rates: Historical, Most Recent, and One Year Before



Source: Moody's Investors Service

Exhibit 5
 12 Months Default Rates: Historical Minimum, Most Recent, and Historical Maximum



Source: Moody's Investors Service

In Exhibit 6, we provide the count of issuers used in the recovery rate calculations in Exhibits 7 and 8. In Exhibit 7, we present both industry-level historical and recent recovery rates for defaulted senior unsecured (SU) debts. In comparison, recovery rates for senior secured (SS) debts are plotted in Exhibit 8. Except for distressed exchanges, the recovery rates presented in these exhibits are based on market prices of debts 30 days after default. For distressed exchanges, the recovery rates are based on trading prices at default. As shown in Exhibit 7, Energy & Environment, Healthcare, Manufacturing, Retail & Distribution, Services, and Telecommunications have higher recent recovery rates compared to their historical averages while Consumer Products and Media have relatively lower recent recovery rates for the defaulted senior unsecured debts. On the other hand, only Energy & Environment and Retail & Distribution have lower recent recovery rates compared to their historical averages in the defaulted senior secured debts. We should note, however, that some industries have very few defaults during the last 12 months for both senior unsecured and senior secured debts.

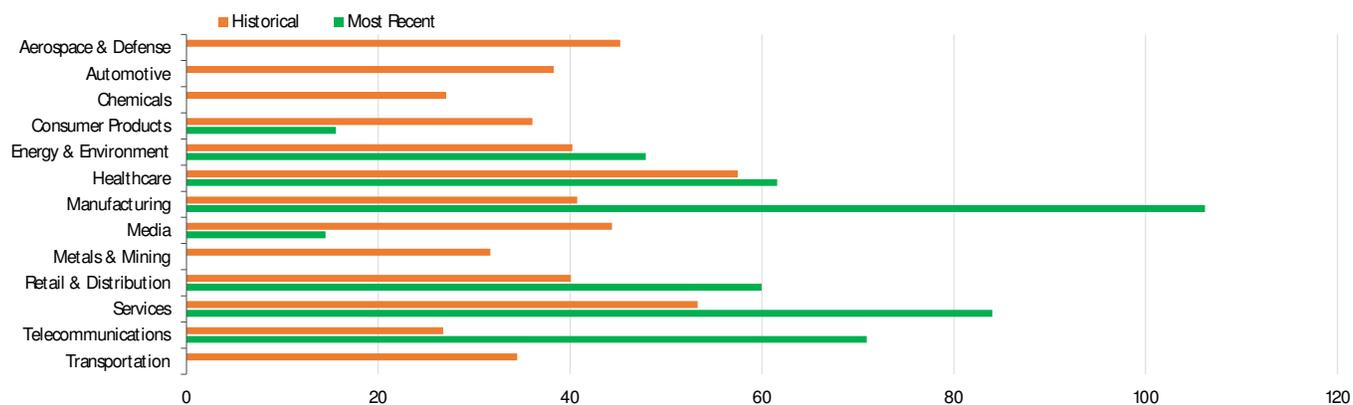
Exhibit 6

Number of Defaulters used in Most Recent and Historical Average Recovery Rates

Industry	Recent SU recovery	Recent SS recovery	Historical SU recovery	Historical SS recovery
Aerospace & Defense	0	0	6	2
Automotive	0	0	52	69
Chemicals	0	0	24	29
Consumer Products	2	6	172	291
Energy & Environment	10	13	139	129
Healthcare	2	0	14	21
Manufacturing	3	0	95	142
Media	3	4	77	79
Metals & Mining	0	3	68	101
Retail & Distribution	6	13	90	90
Services	1	5	27	46
Telecommunications	1	3	121	66
Transportation	0	1	79	364

Source: Moody's Investors Service

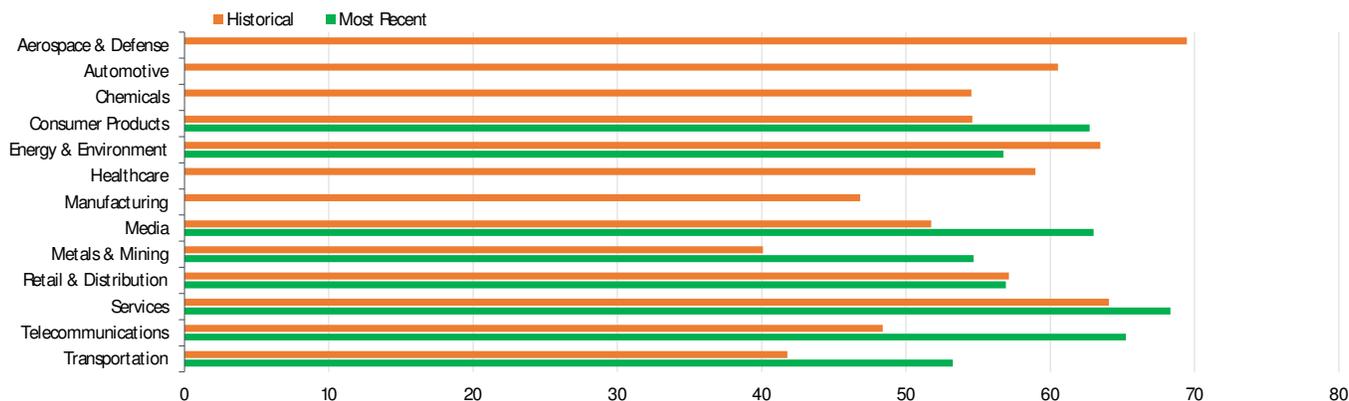
Exhibit 7

12 Months Recovery Rates for Defaulted Secured Unsecured Debts: Historical and Most Recent*

* We have limited numbers of observations on recovery rates in a number of industries during the recent 12 months. Please refer to Exhibit 6 for the sample size.

Source: Moody's Investors Service

Exhibit 8

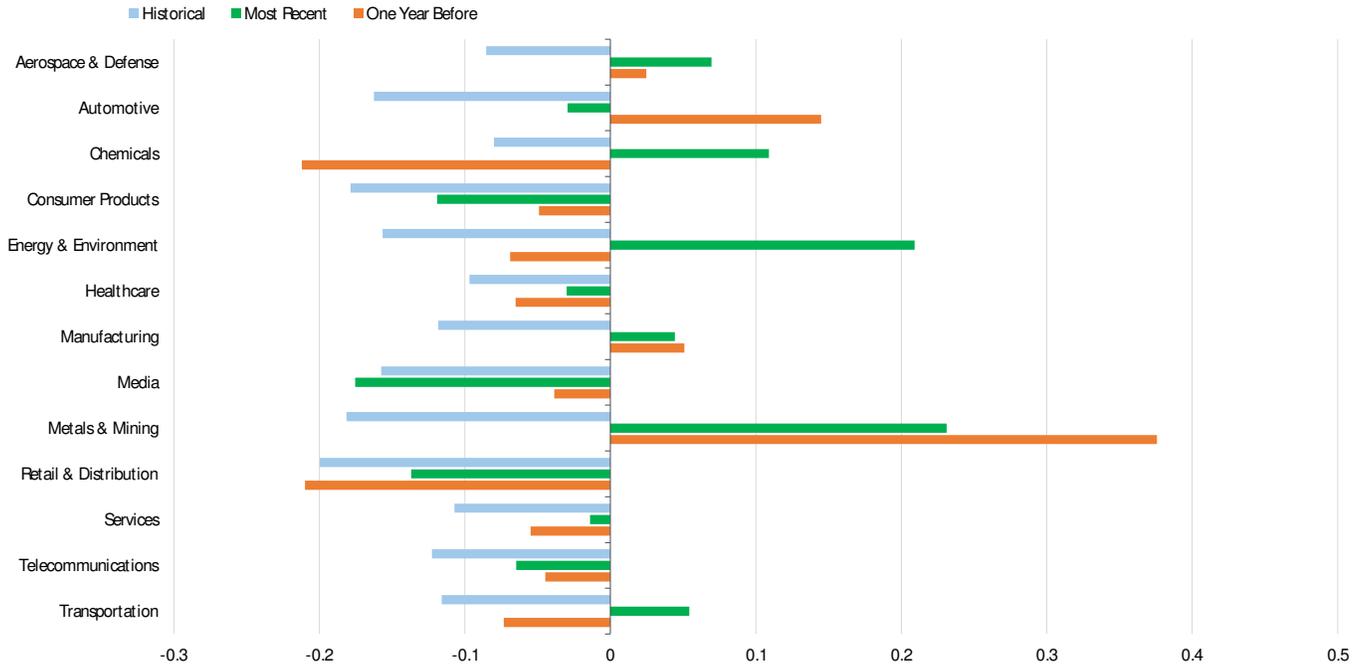
12 Months Recovery Rates for Defaulted Secured Debts: Historical and Most Recent*

* We have limited numbers of observations on recovery rates in a number of industries during the recent 12 months. Please refer to Exhibit 6 for the sample size.

Source: Moody's Investors Service

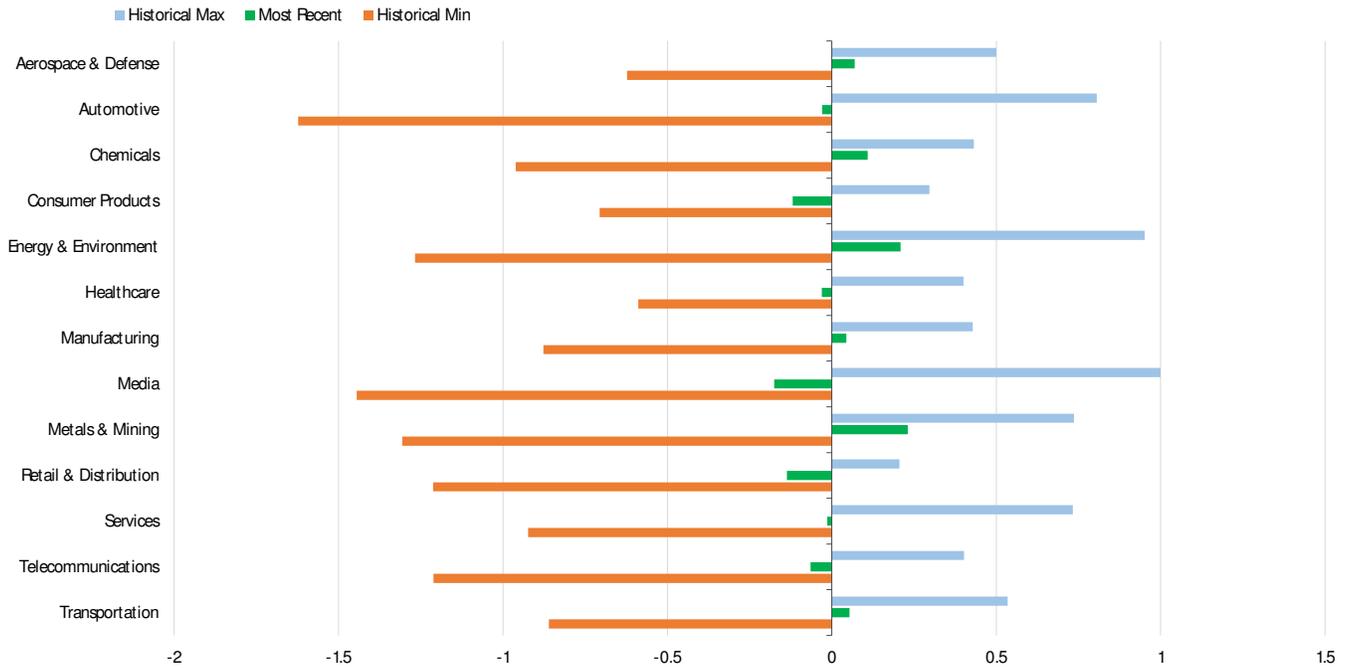
In Exhibit 9 we present the rating drift for each industry in the most recent 12 months. In comparison, we also show the prior year rating drifts together with their historical averages. Rating drift is defined as the average upgraded notches per issuer minus the average downgraded notches per issuer and thus serves as a measure of the overall direction of credit quality changes.² A negative (positive) value of rating drift implies more notches of downgrades (upgrades) than upgrades (downgrades). Technically, rating drift, which is measured in notches, can be any number from -20 to +20 but generally its absolute value is smaller than 1. In the most recent 12 months, 7 out of 13 industries showed better rating drifts than one year ago. Specifically, Energy & Environment saw their rating drifts recover considerably over the last 12 months and is now the second highest among all industries after Metals & Mining. While the historical average of rating drift is negative for each industry, six of the industries have positive rating drifts over the last 12 months. The above facts, together with the low default rates across most industries, reflect the benign credit environment during the 12 month period from October 2017 to September 2018. Exhibit 10 presents the historical maximum and minimum of rating drifts across industries and compares them with the current rating drifts. We can see that the current rating drifts across all sectors are modest compared to their historical maximum/minimum.

Exhibit 9
12 Months Drift: Historical, Most Recent, and One Year Before



Source: Moody's Investors Service

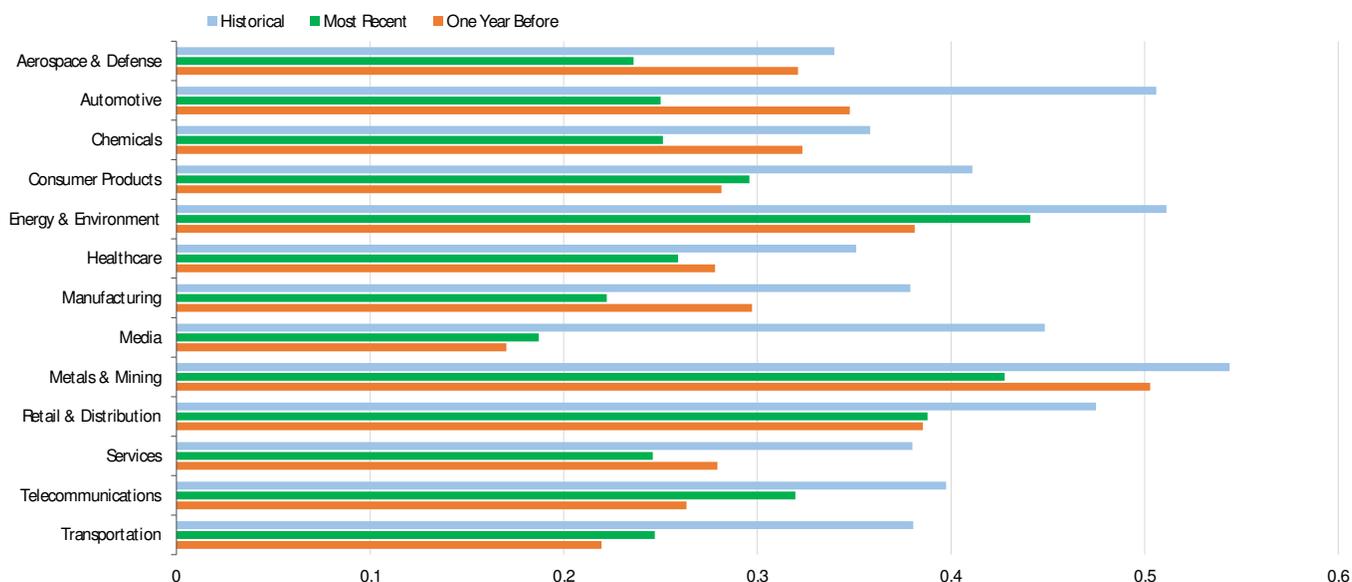
Exhibit 10
12 Months Drift: Historical Minimum, Most Recent, and Historical Maximum



Source: Moody's Investors Service

In Exhibit 11 we present the most recent 12 month rating volatility for each industry along with their historical averages and the rating volatility from a year ago. Rating volatility is defined as the average upgraded notches per issuer plus the average downgraded notches per issuer and measures the gross average number of notches a credit changed over the length of the study horizon. We note that recent rating volatilities are lower than their historical averages in all industries, indicating ratings have been relatively stable over the past 12 months.

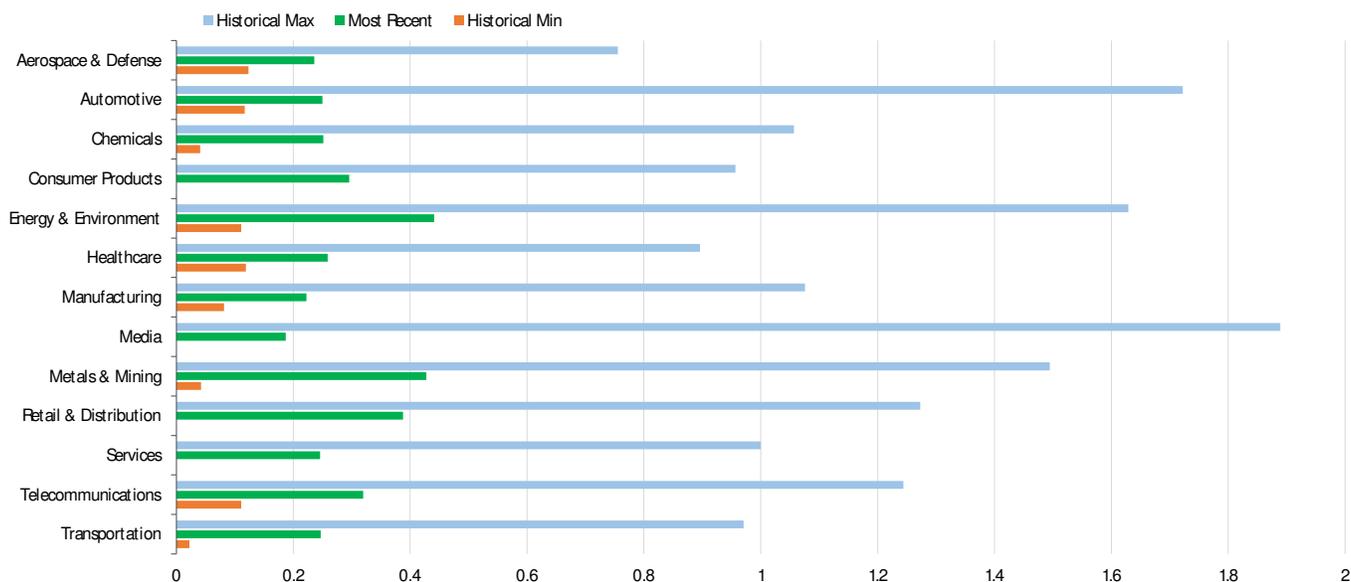
Exhibit 11

12 Months Volatility: Historical, Most Recent, and One Year Before

Source: Moody's Investors Service

Exhibit 12 presents the historical maximum and minimum of rating volatilities across industries and compares them with the current levels.

Exhibit 12

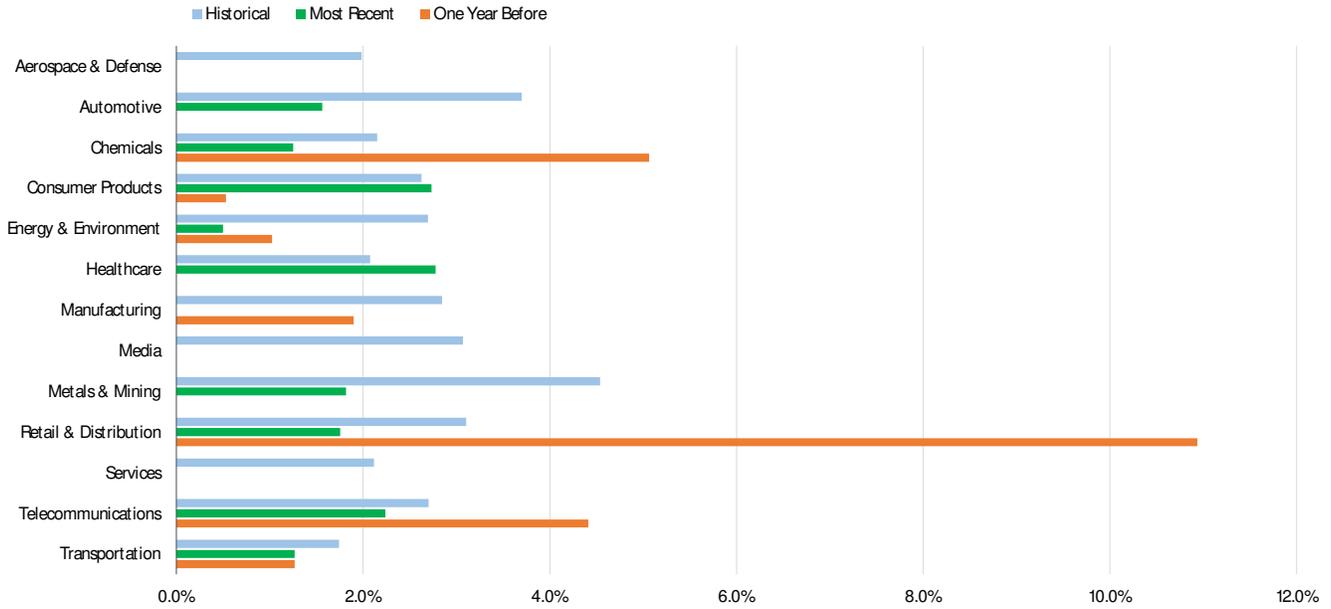
12 Months Volatility: Historical Minimum, Most Recent, and Historical Maximum

Source: Moody's Investors Service

In Exhibits 13 and 14, we compare the fallen angel and rising star rates of different industries with those from last year as well as their historical averages. Fallen angels refer to issuers that are downgraded from investment-grade to speculative-grade whereas rising stars are those that are upgraded from speculative-grade to investment-grade. Exhibit 13 shows that there are no fallen angels in Aerospace & Defense, Manufacturing, Media, and Services industries. Only Consumer Products and Healthcare industries have higher fallen angel rates than their historical averages.

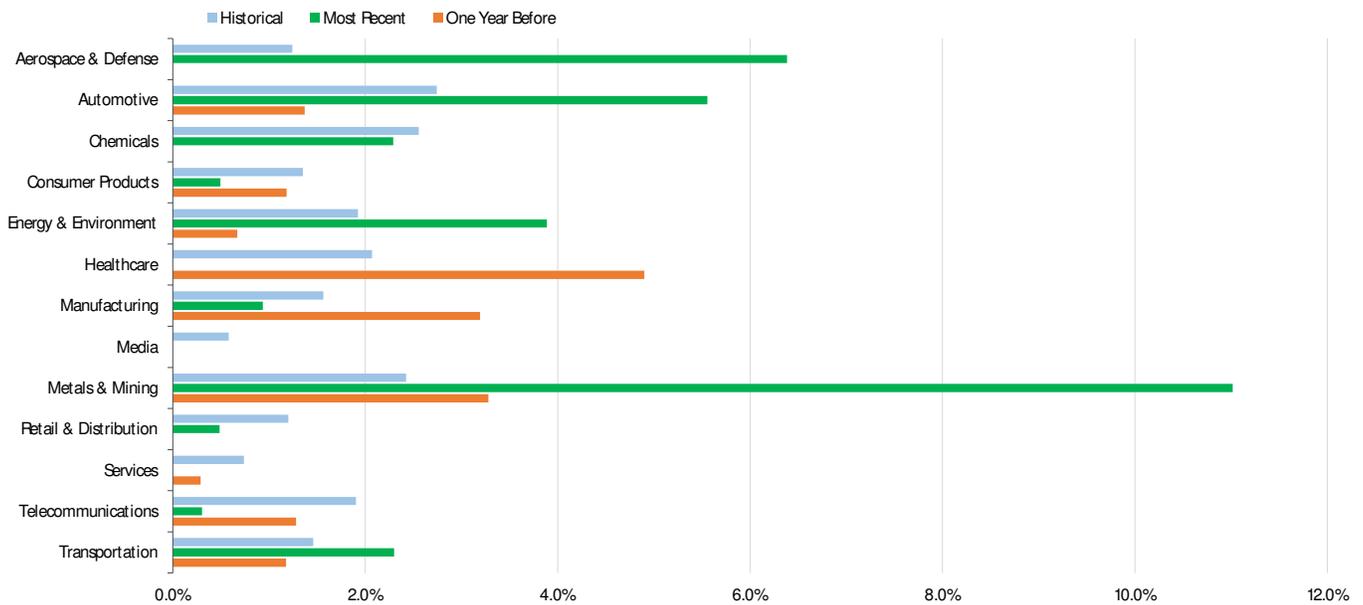
In terms of rising star rates, we find noticeably higher rates in Aerospace & Defense, Automotive, Chemicals, Energy & Environment, and Metals & Mining industries in the current period relative to a year ago. On the other hand, there were no rising stars in Healthcare, Media, and Services industries in the last 12 months.

Exhibit 13
12 Months Fallen Angels Rates: Historical, Most Recent, and One Year Before



Source: Moody's Investors Service

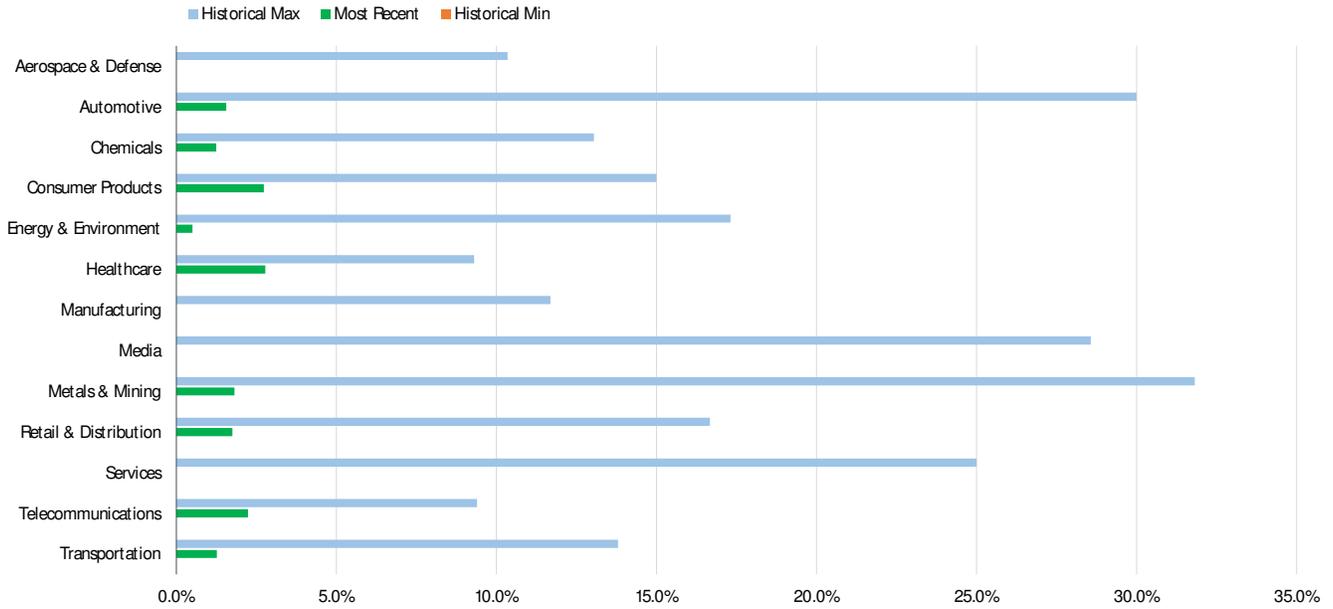
Exhibit 14
12 Months Rising Stars Rates: Historical, Most Recent, and One Year Before



Source: Moody's Investors Service

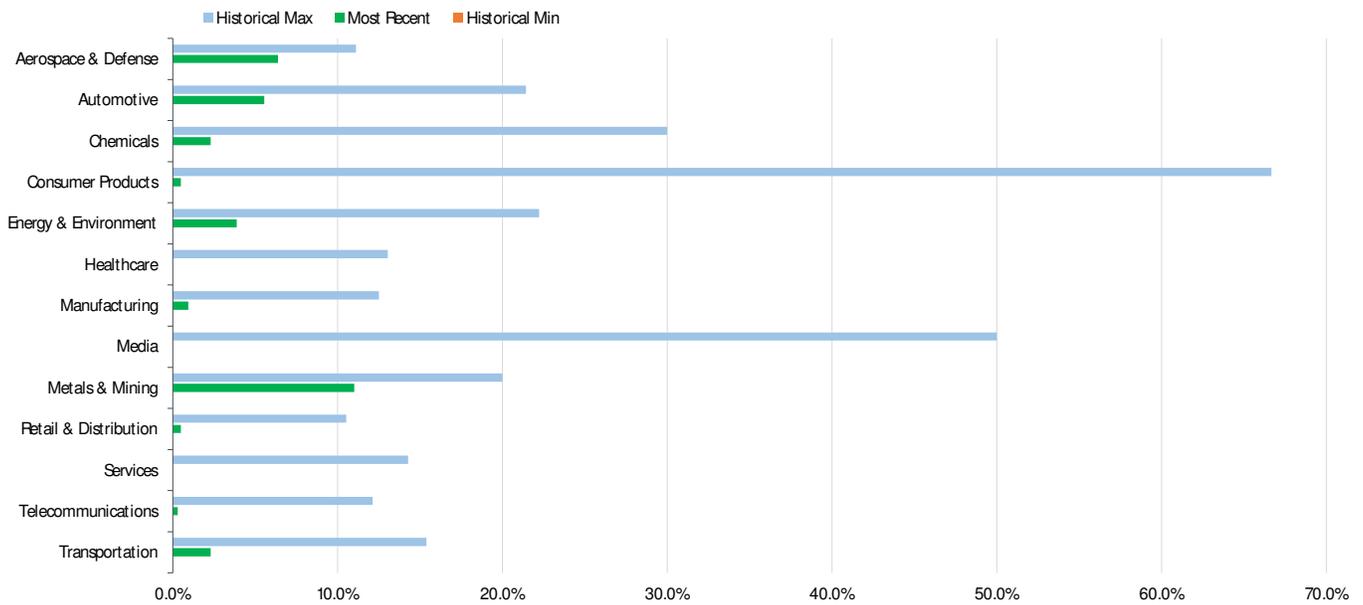
Exhibits 15 and 16 present the historical maximum and minimum of the fallen angel and rising star rates across industries and compare them with the current rates.

Exhibit 15
 12 Months Fallen Angels Rates: Historical Minimum, Most Recent, and Historical Maximum



Source: Moody's Investors Service

Exhibit 16
 12 Months Rising Stars Rates: Historical Minimum, Most Recent, and Historical Maximum



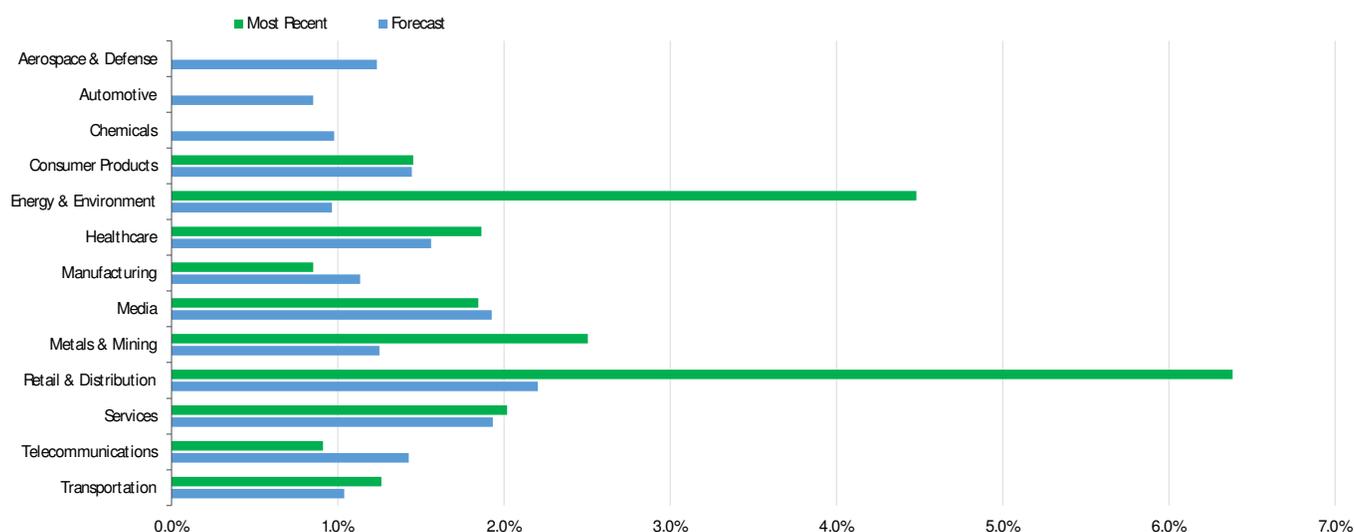
Source: Moody's Investors Service

Current Indicators

In Exhibit 17 we compare forecasted default rates (from CTM) over the next 12 months against the realized default rates of the cohort formed as of October 1, 2017. As shown in the chart, default rates are expected to fall in 7 out of 13 industries over the next 12 months. The default rate for Retail & Distribution is expected to retreat from the current level of 6.4% to 2.2%. However, Retail & Distribution is still projected to have the greatest risk of defaults along with Services and Media industries. In contrast, default rates are anticipated to be lowest for Automotive, Energy & Environment, and Chemicals industries.

Exhibit 17

12 Months Default Rates: Most Recent and Forecast

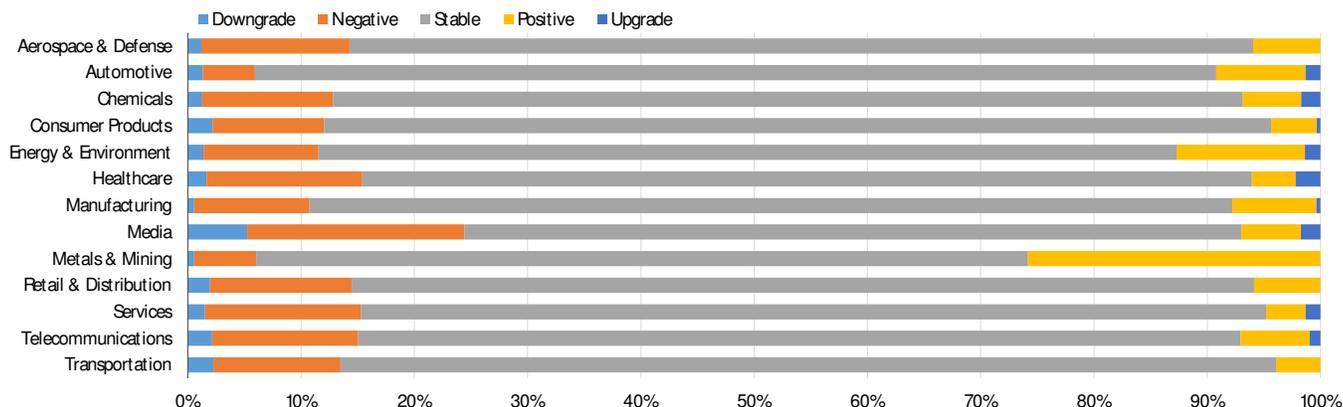


Source: Moody's Investors Service

Apart from the risk of outright default, investors are also interested in the risk of deterioration in the credit quality of issuers in their portfolio. In addition to upgrades and downgrades, Moody's also assigns Watch/Outlook designations to issuers to convey forward looking information about the likely direction of an issuer's rating change in the near to medium term.⁸ In Exhibit 18, we present the share of issuers currently on various Watch/Outlook designations by industry.

Exhibit 18

Watch/Outlook Distribution

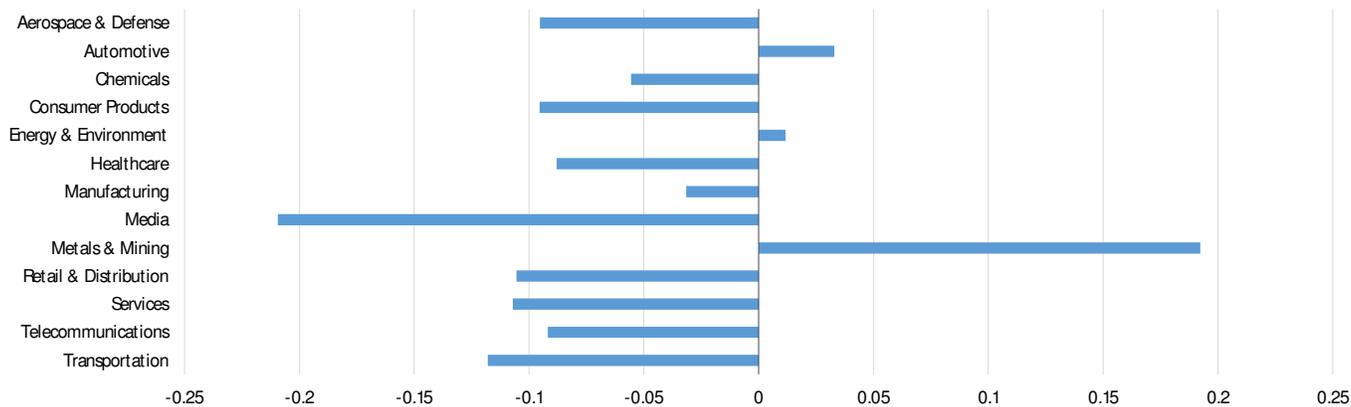


Source: Moody's Investors Service

In Exhibit 19, we summarize the distribution presented in Exhibit 18 with the Watch/Outlook Index.⁹ A negative (positive) value of this index indicates that Watch/Outlook distribution is predicting relatively more negative (positive) rating actions. As a comparison, we present the forecasted rating drift from CTM over the next 12 months in Exhibit 20. While Exhibit 19 presents the forward-looking industry risk solely based on Watch/Outlook information, Exhibit 20 also incorporates other factors such as rating momentum and rating duration.

Exhibit 19

Watch/Outlook Index

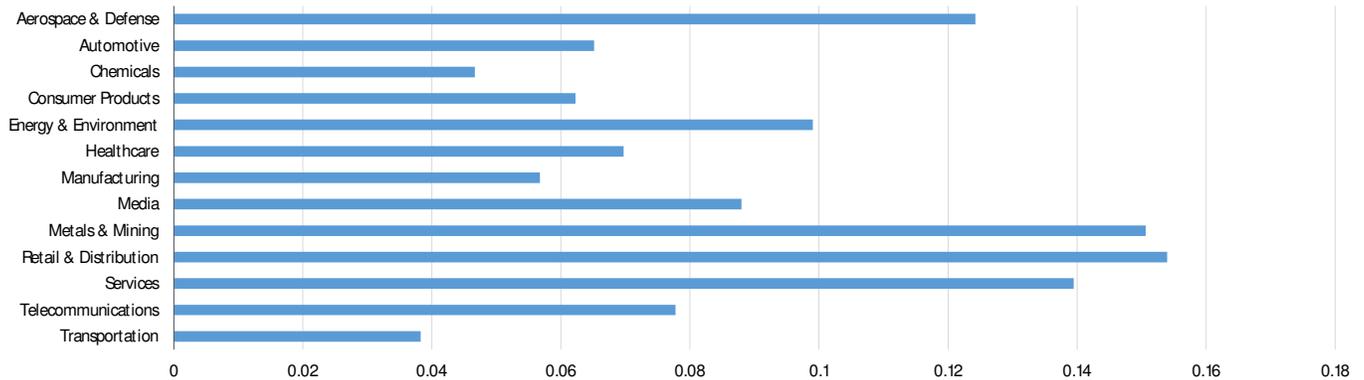


Source: Moody's Investors Service

As shown in Exhibit 19, all industries are expected to see some degree of credit deterioration in the next 12 months except for three industries: Metals & Mining, Energy & Environment, and Automotive. Of the remaining ten industries, Media, Transportation, Services, and Retail & Distribution sectors are at the highest risk of credit deterioration whereas Manufacturing and Chemicals sectors carry the lowest risk. On the other hand, Exhibit 20 shows that all industries are forecasted to have positive drifts over the next 12 months. We also notice that the rank ordering of the two exhibits differ in many of the industries. The differences are not surprising as CTM incorporated additional rating information other than Watch/Outlook.

Exhibit 20

Forecasted 12 Months Drift

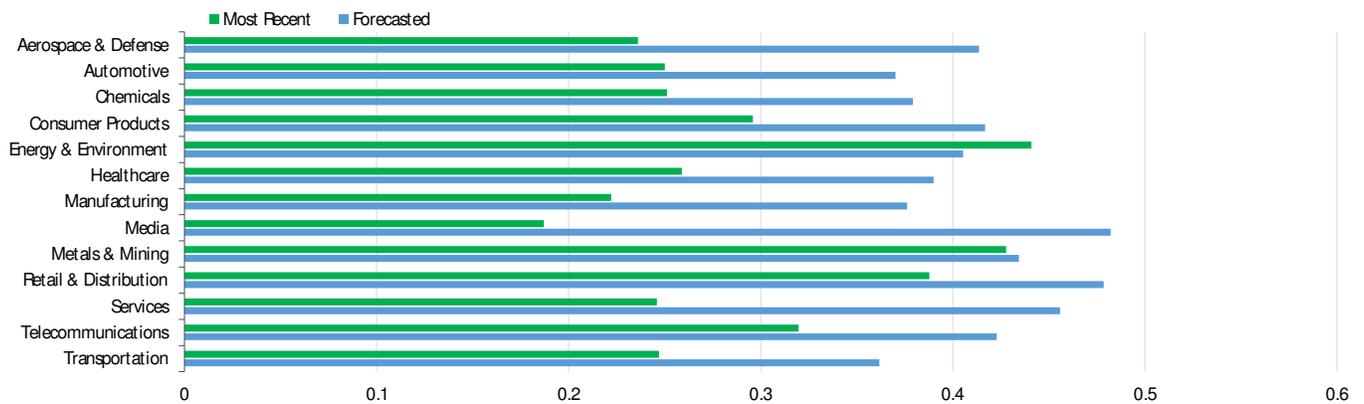


Source: Moody's Investors Service

In Exhibit 21, we present the forecasted ratings volatilities in different sectors along with their recent volatilities. The Media, Retail & Distribution, and Services industries are expected to experience the greatest ratings volatility in the coming year.

Exhibit 21

Forecasted 12 Months Volatility

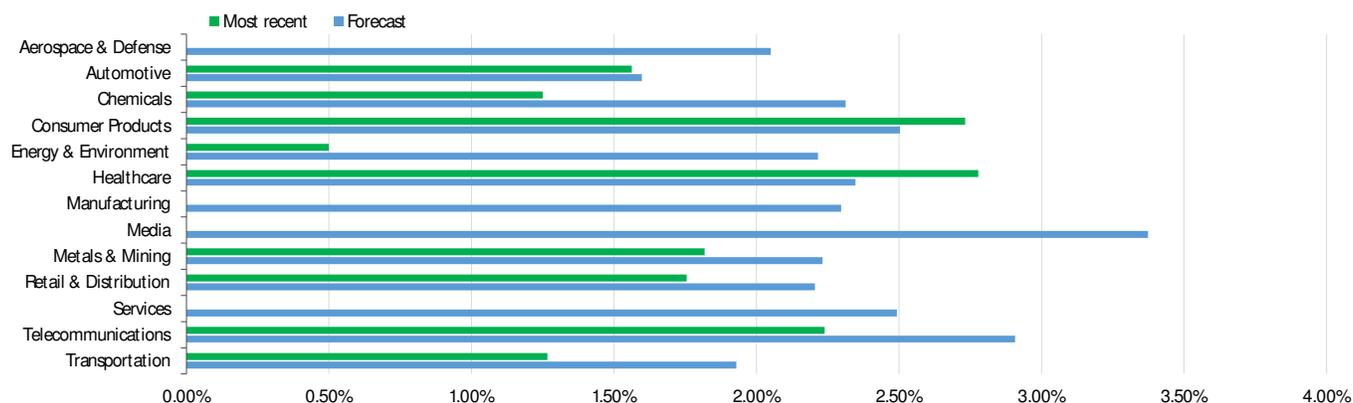


Source: Moody's Investors Service

Exhibits 22 and 23 present the forecasted fallen angel and rising star rates, respectively.

Exhibit 22

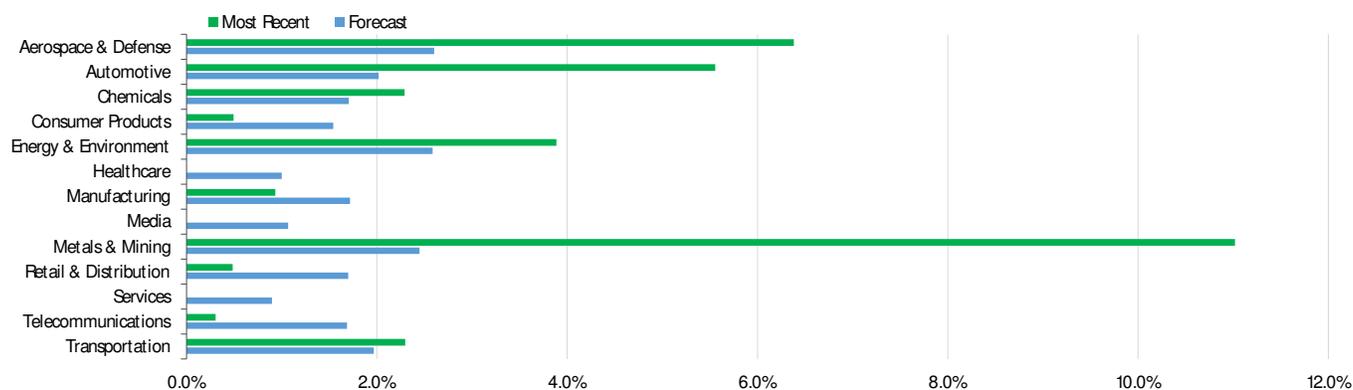
Forecasted Fallen Angels Rates



Source: Moody's Investors Service

Exhibit 23

Forecasted Rising Stars Rates



Source: Moody's Investors Service

Market-Implied Ratings

In Exhibit 25 we present a comparison of relative default risk derived from Moody's ratings to relative default risk derived from the market prices of bonds, specifically measured through bond-implied ratings.¹⁰ Each issuer in a rating category (whether that is the Moody's credit rating or the market-implied rating) is weighted by that category's three-year idealized default rate.¹¹ The result is a ratings-implied idealized default rate for each industry, where that default rate summarizes the distribution of credit ratings (Moody's or Bond) in the industry.

In Exhibit 25, we present a comparison of the relative default risk obtained first from Moody's and second from bond-implied ratings. The data set for these exhibits consists of only those issuers for which both Moody's and bond-implied ratings exist and, therefore, the number of issuers in these exhibits is smaller than what is reported in Exhibit 2 (see Exhibit 24 for a count of issuers in Exhibits 25-27). Since we are only interested in comparing the relative orderings of industries (and not in the actual value of our metric), we standardize the relative default rates to a mean of 100 and standard deviation of 1 for easier visual comparison.

We note that, the Moody's ratings and market-based ratings imply a similar rank ordering of these industries. For example, both Moody's ratings and bond-implied ratings indicate high risk of default in Services, Energy & Environment, Metals & Mining, and Retail & Distribution industries and low risk in Aerospace & Defense, Automotive, Transportation, Chemicals, and Healthcare industries. The

rank order correlation between Moody's and bond-implied ratings is a relatively high 75% indicating that the market and Moody's are in broad agreement with respect to the relative rank ordering of the default risk of industries.

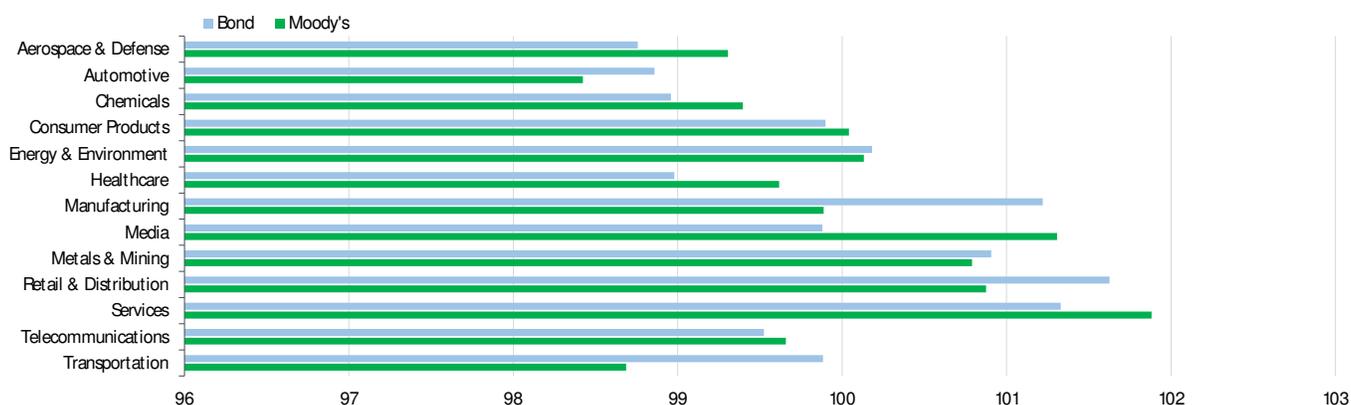
Exhibit 24

Number of Issuers in Exhibits 25-27

Industry	# of issuers in Exhibit 25	# of issuers in Exhibit 26	# of issuers in Exhibit 27
Aerospace & Defense	37	7	20
Automotive	83	12	55
Chemicals	118	24	70
Consumer Products	284	86	147
Energy & Environment	325	100	166
Healthcare	89	16	61
Manufacturing	294	87	154
Media	74	35	29
Metals & Mining	128	46	61
Retail & Distribution	107	37	49
Services	132	60	47
Telecommunications	203	50	114
Transportation	95	15	63

Source: Moody's Investors Service

Exhibit 25

Comparison of Relative Default Risk between Moody's and Bond-implied Ratings

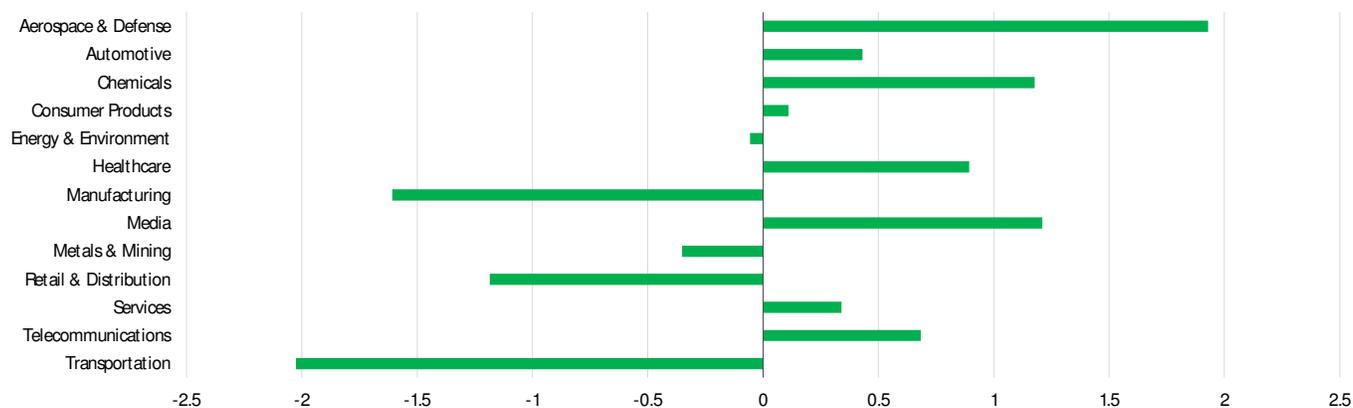
Source: Moody's Investors Service

In Exhibit 26, we present the mean ratings gap between Moody's and bond-implied ratings for issuers rated single-B or lower by Moody's. We choose these issuers because most of the default risk in an industry is concentrated in these categories. A negative gap means that the market-implied rating is lower (more pessimistic) than the Moody's rating. In Exhibit 26, we observe that for 8 of the 13 industries, the bond market has a more positive view of these already distressed issuers. On the other hand, 4 other industries have significantly more negative rating gaps indicating that bond market has more pessimistic outlooks for those industries than does Moody's. There are modest ratings gaps between Moody's and bond-implied ratings for issuers rated single-B or lower in Transportation, Manufacturing, Aerospace & Defense, Chemicals, and Media industries.

As an added comparison, we provide mean ratings gap for investment-grade issuers in Exhibit 27. We note that the bond-implied ratings have more favorable views than Moody's on all industries except Automotive, Energy & Environment, Manufacturing, Metals & Mining, Services, and Transportation industries in the investment-grade universe. In particular, the bond-implied ratings have more favorable views on Retail & Distribution industry (positive gap) in the investment grade universe but more pessimistic views in the single B or lower rated universe (negative gap).

Exhibit 26

Mean Gap between Moody's and Bond-implied Ratings for Issuers Rated B or Lower*

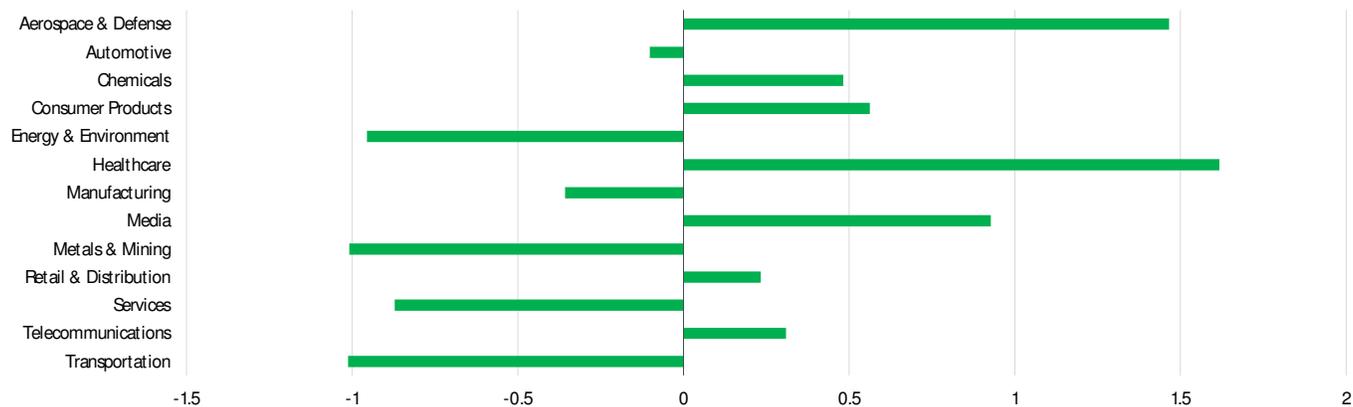


* A negative (positive) gap means that bond-implied rating is lower/more pessimistic (higher/more optimistic) than Moody's rating

Source: Moody's Investors Service

Exhibit 27

Mean Gap between Moody's and Bond-implied Ratings for Investment-Grade Issuers*



* A negative (positive) gap means that bond-implied rating is lower/more pessimistic (higher/more optimistic) than Moody's rating

Source: Moody's Investors Service

Conclusions

In this report we presented recent and forward-looking indicators of default risk and rating transition risk for 13 global non-financial industries. We found that the recent 12 months saw lower default rates and higher net rating upgrade rates for most industries compared to their historical averages. In fact, three of the 13 industries had no rated defaults in the past 12 months and six of the 13 industries experienced net rating upgrades in the same period.

Looking forward, we expect that the Retail & Distribution, Services, and Media sectors to have the greatest risk of default over the next 12 months based on our default forecast. Currently there is a relatively close correspondence between the ordering of relative default risk for these industries given by Moody's ratings on the one hand and market-implied ratings on the other.

Appendix

An industry, in this report, is considered to be a group of businesses that have common supply or demand drivers and have, therefore, a high degree of correlation with respect to broader economic conditions. A description of the 13 industries considered in this special comment is as follows:

Aerospace & Defense

Includes aircraft manufactures, aircraft parts manufactures and companies related to defense industry manufacturing and services.

Automotive

Includes passenger and commercial vehicle manufactures, farm equipment manufacturers, auto parts suppliers, auto retailers and wholesale distributors of auto parts.

Chemicals

Includes makers of agricultural chemicals, specialty chemicals, and commodity chemicals.

Consumer Products

Includes a broad swath of companies: consumer apparel, consumer durables, household and personal care, packaged alcoholic and non-alcoholic beverages, packaged food, textiles, and tobacco companies. It also includes companies related to paper packaging, paper and pulp products, wood products, glass, plastics and metal packaging. Leisure and entertainment industries such as hotels, gaming, movie theaters, movie studios, cruise lines, and restaurants are included. Natural products processors are also included.

Energy & Environment

Includes companies in electricity production (excluding regulated utilities); companies related to all aspects of oil and gas exploration, refining, and production; environmental services companies; and waste management companies.

Healthcare

Includes hospitals, long-term care facilities, outpatient facilities, medical device manufacturers, medical services companies, and pharmaceutical companies.

Manufacturing

Includes industrial manufacturing companies, and construction and building companies.

Media

Includes books, newspapers, magazines publishers; broadcast TV, cable TV, and satellite TV companies; and diversified media companies.

Metals & Mining

Includes mining companies and steel makers.

Retail & Distribution

Includes department store retailers, specialty retailers, food and grocery retailers. Also includes wholesalers in food and grocery, healthcare, industrial products, and metals.

Services

Includes business services, consumer services, and rental services.

Telecommunications

Includes telecommunication companies related to phone and wireless. Also includes technology companies in IT, software, hardware, consumer electronics, and semiconductor companies.

Transportation

Includes airline carriers, commuter services, airline cargo companies, trucking companies, railroad passenger and freight companies, and maritime companies.

Moody's Related Research

- » [Effects of Watches, Outlooks, and Previous Rating Actions on Ratings Transitions and Default Rates, August 2011 \(134938\)](#)
- » [Industry Credit Risk: Recent Trends for Global Non-Financial Corporations, 2017, November 2017 \(1097186\)](#)
- » [The Effectiveness Of Credit Ratings As Indicators Of Relative Industry Default Risk, September 2004 \(88868\)](#)
- » [Corporate Default and Recovery Rates 1920-2015, February 2016 \(1018455\)](#)
- » [Moody's Financial Metrics Key Ratios by Rating and Industry for Global Non-Financial Corporations: December 2017, October 2018 \(1145685\)](#)
- » [Introducing Moody's Credit Transition Model, August 2007 \(104290\)](#)
- » [A Cyclical Model of Multiple-Horizon Credit Rating Transitions and Default, August 2007 \(103869\)](#)
- » [Moody's Credit Transition Model: A Summary of the Watchlist/Outlook Extension, June 2008 \(109301\)](#)
- » [Updating Moody's Credit Transition Model: The Default Risk of Loans and Bonds, September 2010 \(127600\)](#)
- » [Glossary of Moody's Ratings Performance Metrics, July 2015 \(1006619\)](#)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Endnotes

- [1](#) The industry classification in this report follow Moody's annual publication titled "[Moody's Financial Metrics Key Ratios by Rating and Industry for Global Non-Financial Corporations: December 2017](#)", October 2018. This report is intended as a companion to the Financial Metrics publication.
- [2](#) For an introduction to CTM, please see "[Introducing Moody's Credit Transition Model](#)", August 2007.
- [3](#) Financial conditions by industry are discussed in detail in "[Moody's Financial Metrics Key Ratios by Rating and Industry for Global Non-Financial Corporations: December 2017](#)", October 2018 and additional references cited therein.
- [4](#) Companies with only issuer-level Moody's ratings (such as Corporate Family ratings) but no outstanding debt are not included in this study. In addition, we made three enhancements to our default metrics in this report: 1) expand the universe to include issuers that only have deposit ratings, 2) update the cohort re-entry rule post default, and 3) adopt an improved senior ratings algorithm which produces entity-level senior unsecured rating histories for the purpose of default research. The first enhancement enables us to have a more thorough performance evaluation by including banks which may not have rated debt obligations. The second enhancement allows us evaluate the performance of ratings following limited or targeted default events, such as distressed exchanges, by allowing such issuers to re-enter the analysis sample more quickly. The third enhancement improves the accuracy of our estimated issuer-level ratings. These updates have resulted in some revisions in default and rating performance metrics relative to those reported in prior publications. Some key impacts include a modest increase in cohort sizes over time, a better coverage in terms of the rated universe and defaults, a noticeable rise in the share of Caa-C ratings and lower default rates among Caa-C issuers. The data contained in the most recent report(s) supersede the data published in previous reports. Further details can be found in the [Corporate Default and Recovery Rates 1920-2015](#), February 2016.
- [5](#) The details of this algorithm can be found in the appendix of the [Corporate Default and Recovery Rates 1920-2015](#), February 2016.
- [6](#) There is no expectation that industries should have similar default rates, just as there is no expectation that industries should have identical ratings distributions. While the historical averages are presented in Exhibit 4 for reference, there is no particular reason to expect the past to be prologue. Credit conditions in industries change over time; what was once a "safe" industry can become risky and vice versa. Indeed, there is little correlation between the recent and historical relative default risk ordering of different industries.
- [7](#) For detailed descriptions of this and other performance metrics, please see "[Glossary of Moody's Ratings Performance Metrics](#)", July 2015.
- [8](#) See "[Effects of Watches, Outlooks, and Previous Rating Actions on Ratings Transitions and Default Rates](#)", August 2011 for a detailed analysis of the efficacy of Watch/Outlook designations in predicting rating transitions and defaults.
- [9](#) See "[Glossary of Moody's Ratings Performance Metrics](#)", July 2015 for details on calculating the Watch/Outlook Index.
- [10](#) Bond-implied ratings model is Moody's proprietary model used to map market prices of bonds of issuers to an issuer rating on Moody's 21-point scale.
- [11](#) These weights are Aaa = 1, Aa1 = 14, Aa2 = 37, Aa3 = 84, A1 = 167, A2 = 317, A3 = 514, Baa1 = 800, Baa2 = 1186, Baa3 = 2443, Ba1 = 4471, Ba2 = 7400, Ba3 = 11243, B1 = 16543, B2 = 22214, B3 = 30043, Caa1 = 40912, Caa2 = 55714, Caa3 = 89214, Ca = 142857, C = 142857.

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