MOODY'S ANALYTICS

CREDIT RISK REPORT
FEBURARY 11, 2021

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EDF Report January 2021 for APAC Corporate Firms

APAC corporates experienced a very steep credit quality decline following the global outbreak of the COVID-19 pandemic. By the end of January 2021, the median EDF™ (Expected Default Frequency) value of APAC corporate firms was 0.64%, retreating from a high of 0.97% at the end of March 2020.

The elevated credit risk during the first half of 2020 is mostly attributable to substantially increased market leverage and asset volatility, following the severe drop in equity markets during the pandemic outbreak. The stock market has experienced a substantial recovery since, which helped bring the market leverage to a level comparable to the historical norm. Asset volatility remains elevated relative to the historical benchmark.

We observed varied year-over-year changes in the EDF measure across APAC countries, but we do not see any case where the change is significant one way or the other.

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1. Overview

APAC corporates experienced a very steep credit quality decline during the first half of 2020 following the global outbreak of COVID-19. By the end of January 2021, the median EDF value of APAC corporate firms was 0.64%. The current level is noticeably lower compared to the 0.97% observed at the end of March 2020, which marked the first time the median EDF value has doubled year-over-year since September 2008. The decline in EDF from its high is attributed to the remarkable equity market recovery, while balancing out the fact that volatility remains heightened. The median EDF credit measure increased by 6% compared to the beginning of 2020.

We observed varied year-over-year changes in EDF measures across APAC countries, but we do not see any case where the change is significant one way or the other.

Observed corporate defaults of non-financial public firms still remain low compared with historical standards, but they are higher than what we saw during the previous years. The onset of the coronavirus outbreak was sudden and still relatively recent. It will take time for impacts to trickle down and become default events.

EDF levels for a number of risky industry sectors increased significantly during the last 12 months. Specifically, oil- and consumer-related industries made up the top of the list when ranking industries by liability-weighted EDF measures. These sectors were also among the industries that experienced the largest increases in risk during the prior year.

This report first shows overall credit trends, reflected through realized default counts, the EDF credit measure and its drivers, and credit spreads for APAC non-financial firms. Subsequently, we analyze the riskiest industry sectors using a variety of metrics. We also report credit migration patterns using EDF metrics.

During the last financial crisis, we published periodic EDF reports that many clients found helpful. This report follows our previous reports[1] for North American and European corporates regarding COVID-19's impact on EDF credit risk measures. These reports are available at www.moodysanalytics.com.

[1] https://www.moodysanalytics.com/articles/2020/edf-report-march-2020-for-north-american-corporate-firms
https://www.moodysanalytics.com/articles/2020/edf-report-may-2020-for-north-american-corporate-firms
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2. Credit measure trends

This section shows EDF credit measure movements and key drivers for APAC non-financial companies between January 2000 and January 2021. We report these trends in conjunction with realized default counts and credit spreads.

2.1 Realized defaults

Figure 1 shows quarterly default counts for APAC public corporates, classified by whether the firm is rated at the time of default. Figure 2 presents the quarterly number of defaults, highlighting bankruptcy defaults. Default occurrences reaffirm that the most recent benign credit environment continued at least until the end of 2019. So far, we have seen a handful of defaults in the sample in 2020. However, given that the onset of the pandemic has been sudden, and we are still in the middle of it, we might still see a significant increase in defaults in the near future if the credit environment deteriorates due to uncertainties in the path of economic recovery. Figures 1 and 2 detail default counts by rating status and default type, respectively. Figure 3 reports monthly default counts occurring the previous year, during which period the default counts remained low. The 12-month default count rolling average currently stands at 17.83, down from 24.67 one year ago. As a benchmark, during the past 10 years, the average monthly default count is around 24.68.

Figure 1 Quarterly default counts by rating status

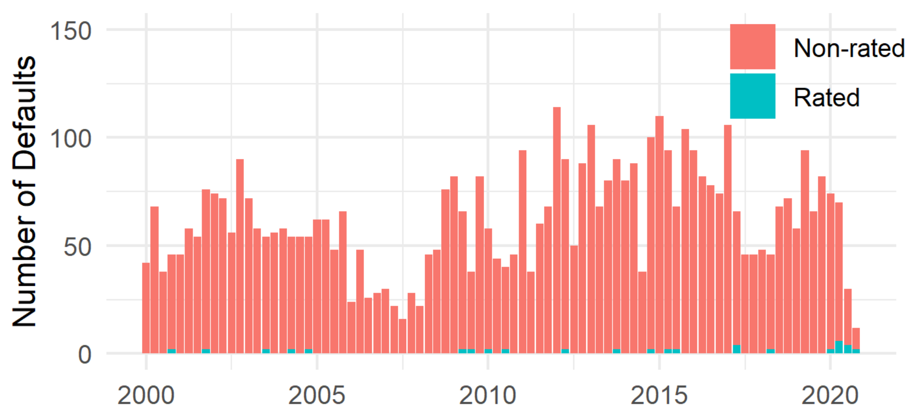


Figure 2 Quarterly default counts by default type

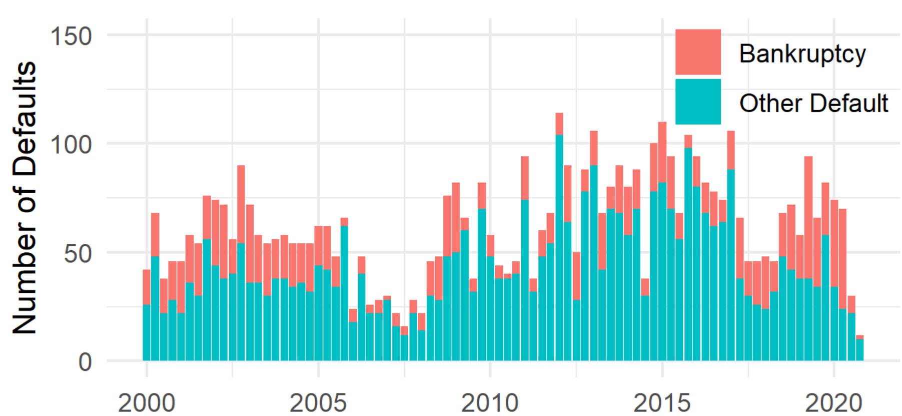
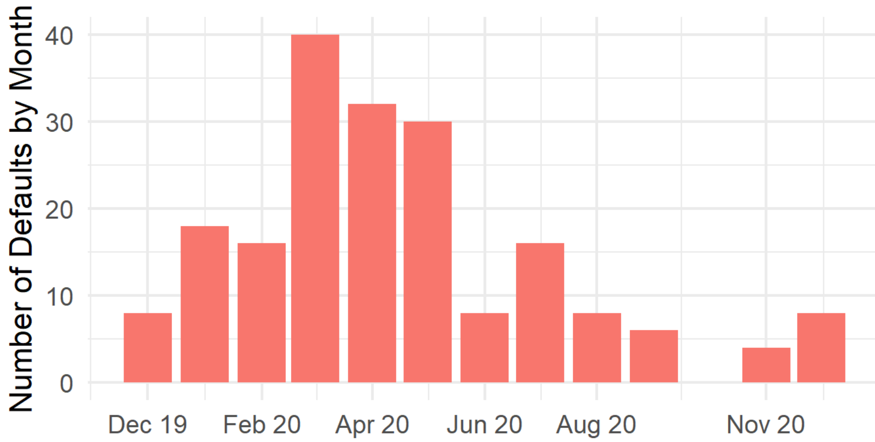


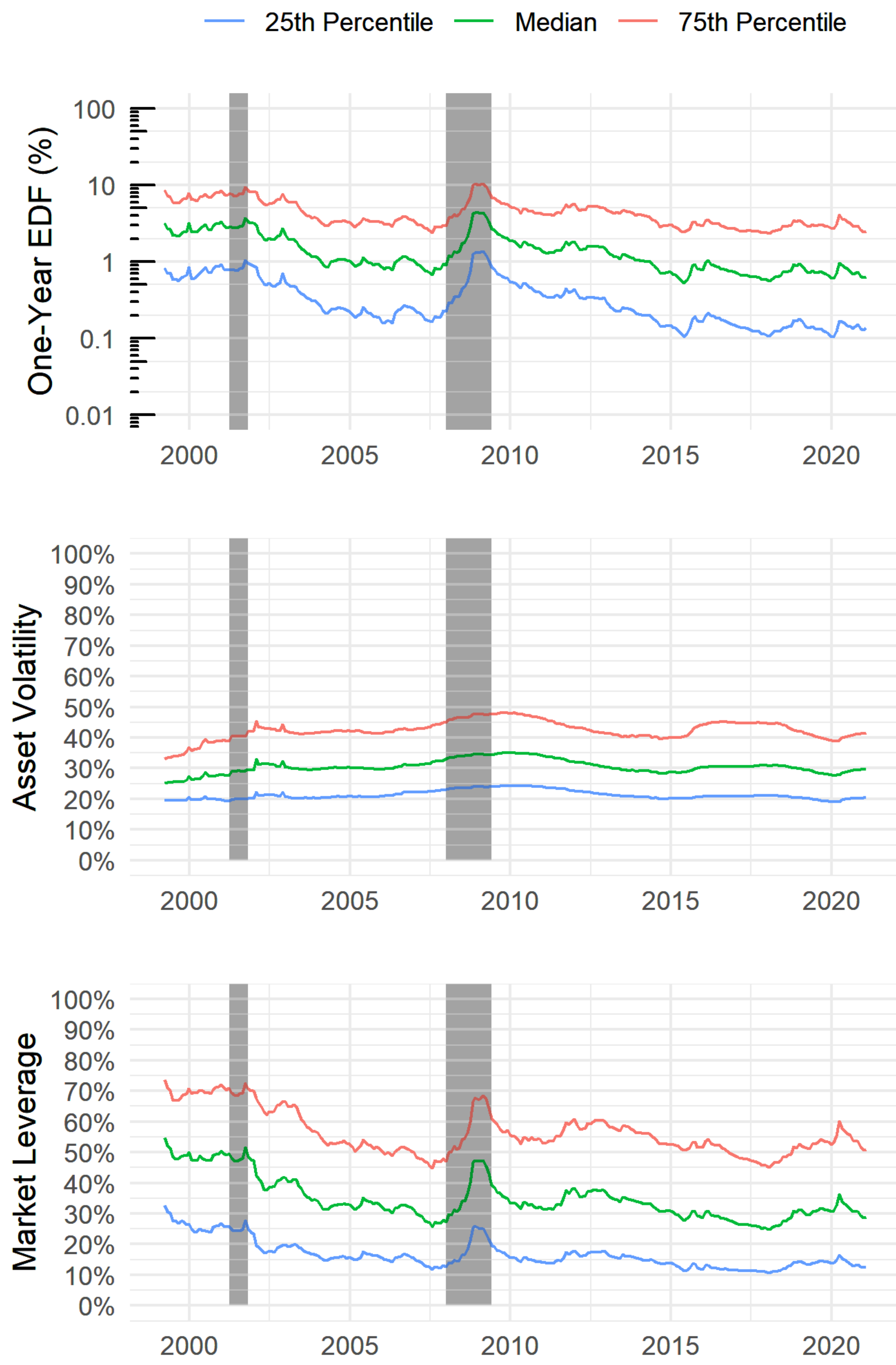
Figure 3 Monthly default counts during the past year



2.2 EDF credit measures and drivers

Figure 4 reports quartiles of the EDF credit measure and its drivers, including underlying asset volatility and market leverage, from January 2000 through January 2021. For a significant part of 2020, we have seen a substantial rise in EDF values as a result of significant market leverage increases. The level of EDF has retreated from its high in March. Still, compared to a year ago, the median EDF value rose about 7%, from 0.60% to 0.64%. At the same time, median leverage decreased from 31.01% to 28.99%, potentially due to the recent equity market recovery. Median asset volatility increased from 27.65% to 29.76%.

Figure 4 Trends of one-year EDF credit measures and drivers



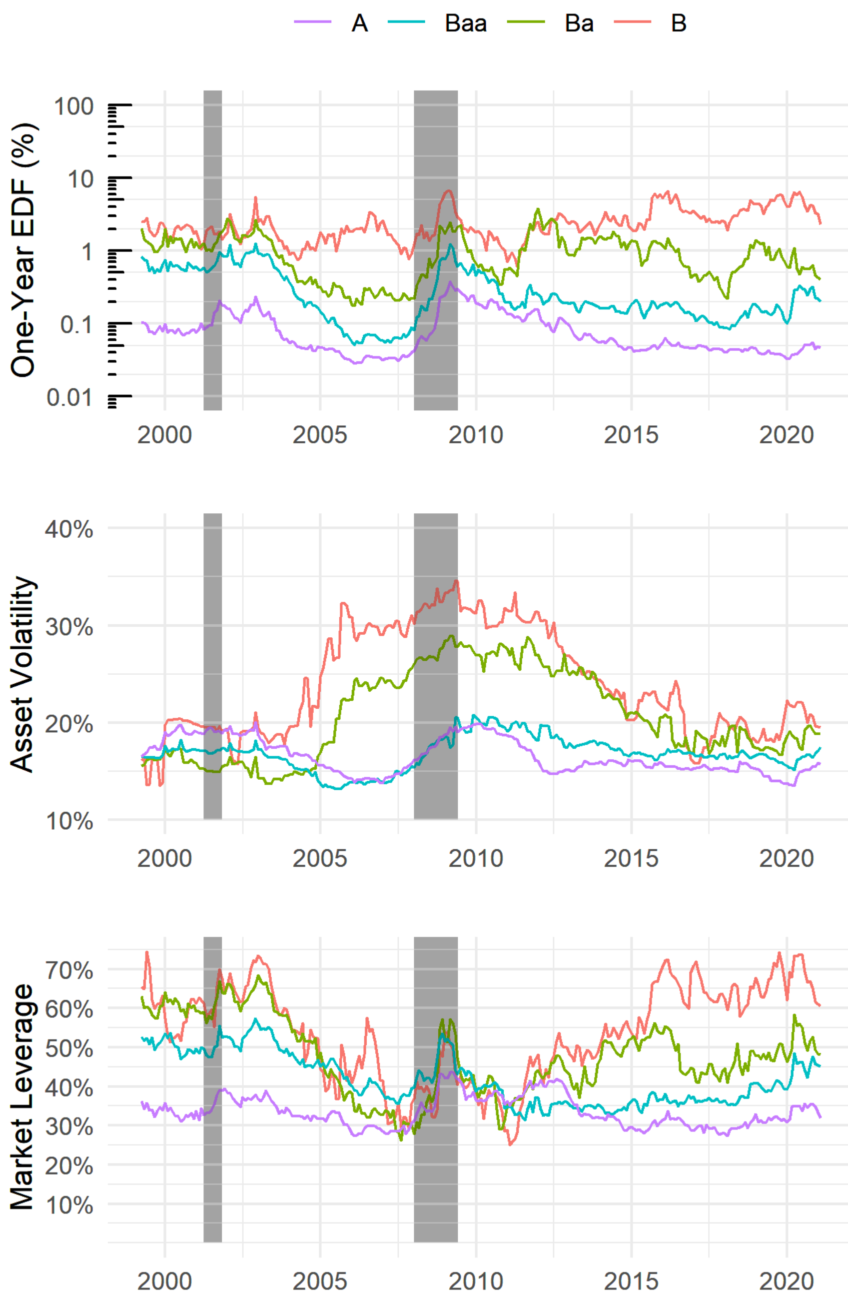
2.3 EDF credit measures and drivers: rated firms

Figure 5 presents EDF measures and drivers for firms holding an agency rating assignment by Moody's Investors Service. To ensure each rating group has a sufficiently large number of firms, we analyze only groups rated A through B. In the cross-section, the median EDF values for these rating groups are consistent with the risk order indicated by agency ratings. For EDF value drivers, B-rated firms are riskiest in terms of both business risk (that is, asset volatility) and financial risk (that is, leverage). The EDF value difference between Baa-rated and Ba-rated firms is primarily driven by asset volatilities, while leverage is the main driver for the EDF value difference between Baa-rated and A-rated firms.

Currently, Ba and B-rated firm EDF credit measures are still at levels close to the historical highs seen during 2008–2009. These levels show a stark contrast with the much more benign credit environment observed during the past few years. For example, a Ba-rated firm is now almost as risky as a B-rated firm in early 2019. However, despite the recent volatility, the EDF credit measures for investment-grade firms still remain relatively moderate.

We observed a moderate increase in median asset volatilities across all rating groups, up from historic lows in the second half of 2019. The bottom panel of Figure 5 shows that the market leverage—the ratio of the default point over the market value of assets—presented a sharp increase from their historic lows and a recent pullback. The magnitude of the increase in leverage from the first half of 2020 is almost as steep as the one observed during October and November 2008. The pullback afterward in market leverage reflected the recovery of market capitalization for APAC corporates across all rating groups. Yet a heightened level in market leverage, especially for the speculative-grade firms, still points to the deteriorated debt service capacity of APAC corporates in 2020.

Figure 5 Trends of one-year EDF credit measures and drivers: rated firms



2.4 EDF credit measures by country

Figure 6 presents the summary of EDF credit measures by country as of the end of January 2021 and a year before. The difference between the mean and median indicates the skewness in the distribution of EDF measures. Although the EDF change year-over-year varies by country, we do not observe significant changes in any country one way or the other despite the turbulence in the market caused by COVID-19.

Figure 6 EDF credit measures by country

COUNTRY	2020-01			2021-01		
	EDF MEAN	EDF MEDIAN	# OF FIRMS	EDF MEAN	EDF MEDIAN	# OF FIRMS
CHN	1.94%	0.58%	4,016	2.02%	0.71%	4,235
JPN	0.61%	0.13%	3,427	0.79%	0.22%	3,442
IND	6.54%	2.25%	2,657	4.85%	1.66%	2,602
KOR	1.96%	0.76%	1,986	1.67%	0.70%	2,023
TWN	0.66%	0.15%	1,837	0.62%	0.16%	1,830
AUS	4.73%	1.63%	1,427	3.26%	1.25%	1,359
HKG	5.40%	2.72%	1,376	6.18%	3.28%	1,184
MYS	2.44%	0.65%	832	2.48%	0.69%	815
VNM	4.22%	1.47%	688	3.67%	1.04%	693
THA	1.57%	0.32%	587	1.36%	0.39%	582
IDN	4.65%	1.73%	473	4.48%	1.74%	500
SGP	5.18%	1.55%	467	4.89%	2.16%	426
PAK	3.25%	1.49%	224	2.25%	0.64%	231
LKA	2.02%	0.50%	174	1.56%	0.34%	173
PHL	1.44%	0.40%	165	1.39%	0.49%	159
NZL	2.09%	0.10%	102	2.13%	0.14%	100

3. Industry analysis

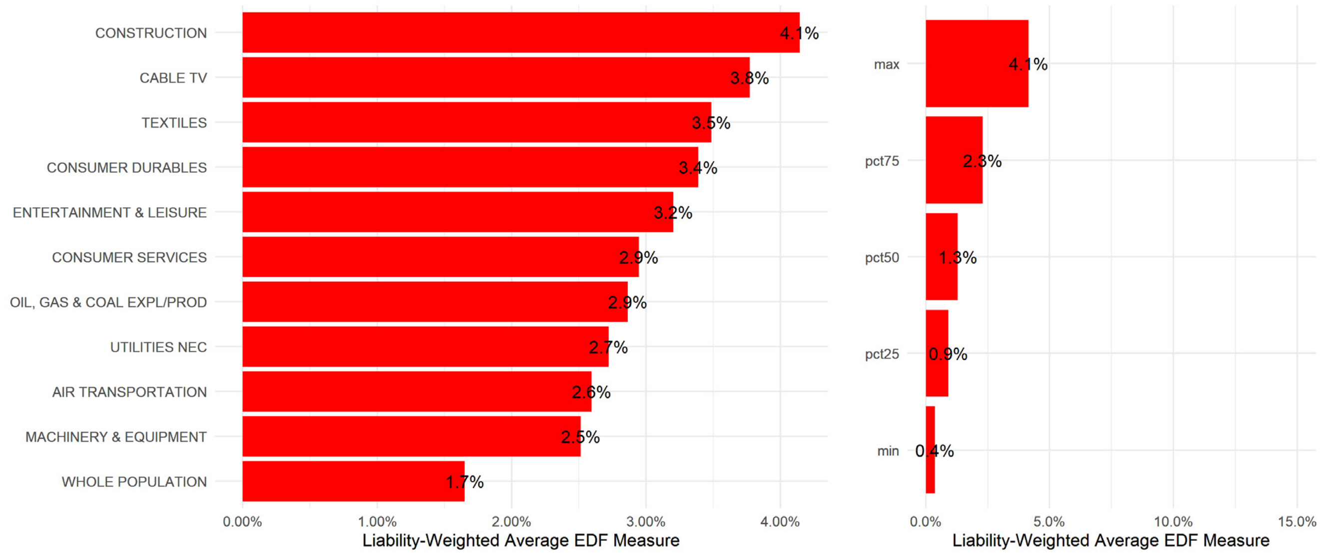
This section applies two measures that capture different aspects of industry risk. The first measure is based on the average EDF value weighted by total liabilities of each company in a given industry. Therefore, this measure is dominated by the risks of firms with large liability amounts. The second measure is the percentage of firms with EDF values greater than the 90th percentile of the entire population of APAC non-financial companies. Consequently, this measure tends to be more represented by the risks of smaller companies, which are more likely riskier in most industries. With both measures, the analysis in this section helps paint a relatively complete picture of industry-level credit risk for APAC corporates. To avoid small sample bias, we examine only industries with more than 20 firms as of January 31, 2021.

3.1 Riskiest industries

The entire APAC corporate population has a 1.65% liability-weighted EDF credit measure, up from 1.59% last year. Figure 7 shows the riskiest industries and the distribution of liability-weighted EDF credit measures across all industries. The chart on the left side displays the top-ten riskiest industries and their EDF measures; the chart on the right side displays the EDF measure distribution of all industries.

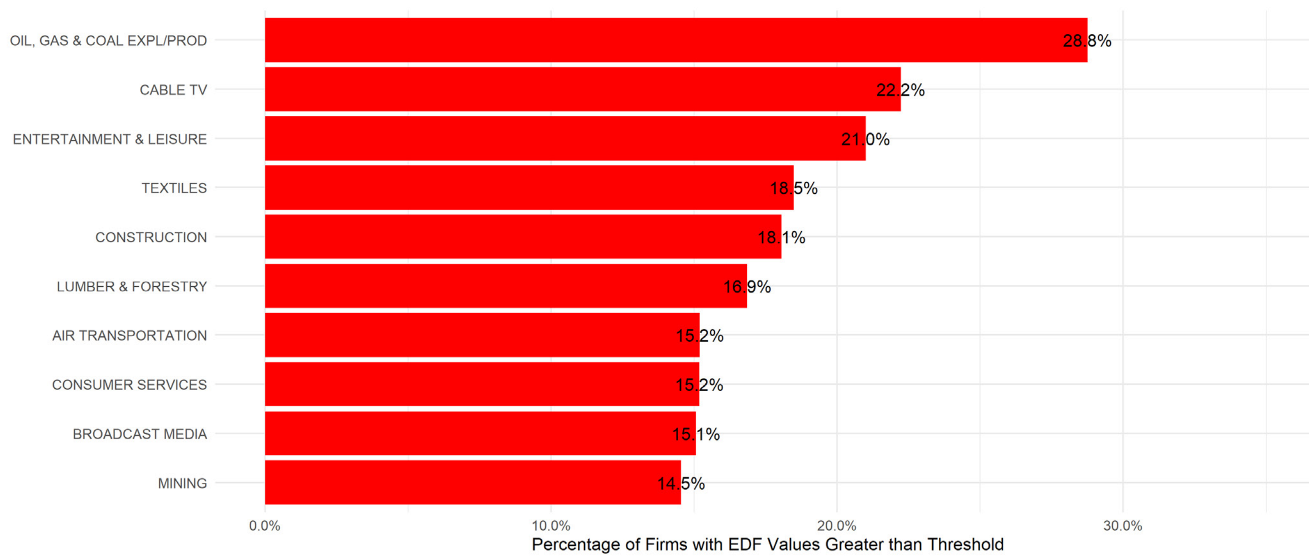
The riskiest industries measured by liability-weighted average EDF credit measure are Construction, Cable TV, and Textiles. This portrays a quite different industry risk profile than observed in North American corporates, where oil- and consumer-related industries are topping the list in credit risk. The industry rankings shown in the list are also quite consistent with that observed in the pre-COVID-19 era, indicating the status of recovery in the APAC region.

Figure 7 Riskiest industries by liability-weighted average EDF credit measures



Examining an alternative measure of industry risk, we compile the percentage of firms within an industry that have EDF values greater than the 90th percentile of the EDF value distribution for the entire population. At the end of January 2021, for the population of APAC non-financial firms, this threshold value was 19.17%. Figure 8 lists the riskiest industries using this measure. The list is largely consistent with the list obtained using the other measure. The Oil, Gas & Coal Exploration/Production industry is ranked as the riskiest, with 25% of firms above the threshold.

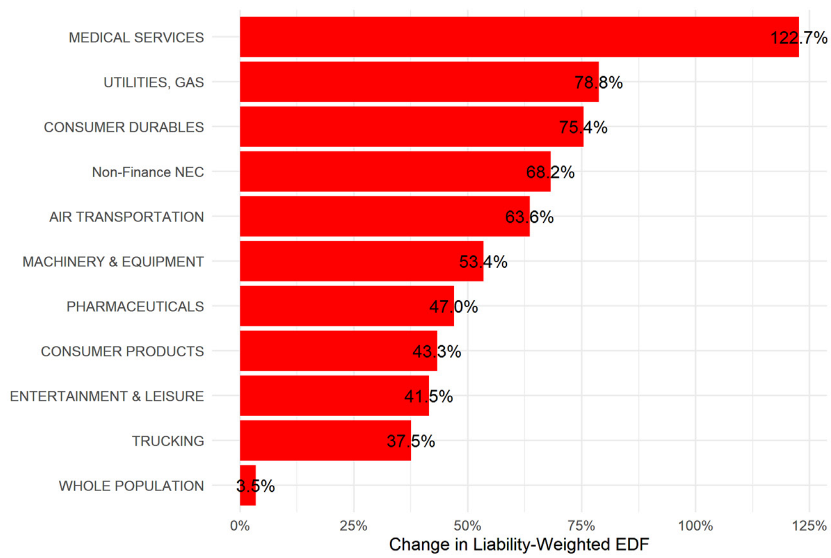
Figure 8 Riskiest industries by percentage of firms with EDF values greater than threshold

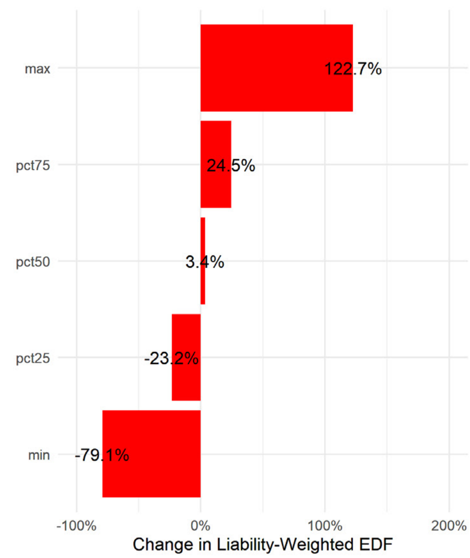


3.2 Industries with the largest credit risk increase

The sharp elevation in credit risk is more apparent when we look at year-over-year increases in EDF values within each industry. From January 2020 through January 2021, many industries in the APAC corporate space experienced substantial increases in credit risk. The industries with the largest percentage increases are reported on the chart on the left side of Figure 9, where we find industries related to oil refining, as well as industries that heavily engaged in travel and leisure, such as Transportation and Hotels & Restaurants. The chart on the right side of Figure 9 presents the distribution of changes across all industries, which is quite skewed. Yet the magnitude of the EDF increase shown below is much smaller compared to what was observed in North America.

Figure 9 Industries with the largest increases in liability-weighted EDF credit measures





4. Credit migration

This section analyzes credit quality shift from both the change in agency rating and the change in EDF-implied rating (EIR). The agency rating is more latent, reflecting the credit risk ranking of a firm over a long period of time, and is thus more stable. On the other hand, the EIR is calibrated monthly and is, therefore, more point-in-time but also more volatile.

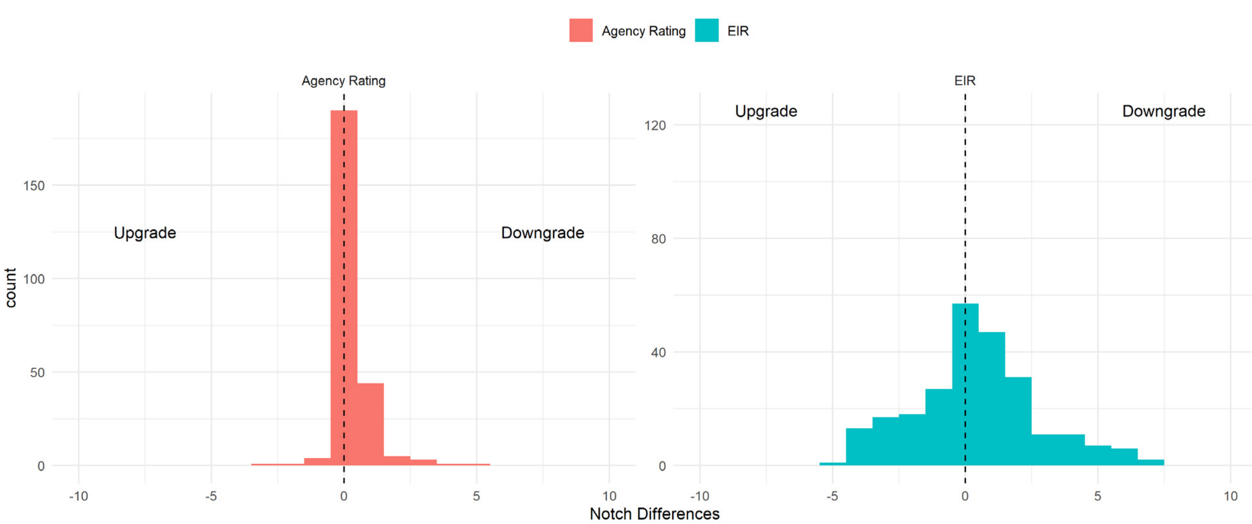
Figure 10 shows the mapping between EDF values and the corresponding implied ratings for APAC non-financials as of January 2021. EDF values within the lower bound and upper bound are mapped to the corresponding rating class. The resulting EIRs are then compared to their counterparts in January 2020. Figure 11 shows the differences, along with the differences in agency ratings.

Figure 10 EDF-implied rating mapping for APAC non-financials

INVESTMENT-GRADE				HIGH-YIELD			
RATING	MEDIAN	LOWER BOUND	UPPER BOUND	RATING	MEDIAN	LOWER BOUND	UPPER BOUND
Aaa	0.0100%	0.0100%	0.0126%	Ba1	0.1451%	0.1122%	0.1875%
Aa1	0.0159%	0.0126%	0.0178%	Ba2	0.2423%	0.1875%	0.2830%
Aa2	0.0200%	0.0178%	0.0214%	Ba3	0.3306%	0.2830%	0.3861%
Aa3	0.0229%	0.0214%	0.0245%	B1	0.4510%	0.3861%	0.5267%
A1	0.0262%	0.0245%	0.0280%	B2	0.6152%	0.5267%	0.7657%
A2	0.0300%	0.0280%	0.0329%	B3	0.9529%	0.7657%	1.1860%
A3	0.0360%	0.0329%	0.0395%	Caa1	1.4760%	1.1860%	1.8369%
Baa1	0.0433%	0.0395%	0.0474%	Caa2	2.2860%	1.8369%	2.9563%
Baa2	0.0520%	0.0474%	0.0672%	Caa3	3.8230%	2.9563%	6.3931%
Baa3	0.0868%	0.0672%	0.1122%	Ca	10.6912%	6.3931%	23.1206%

Looking at the histogram of differences in ratings between January 2020 and January 2021 (Figure 11), even though the agency ratings suggest that the longer-term credit risk for the majority of the firms has changed little, we see a positive skewness for the EIR, suggesting clear, immediate credit deterioration, in line with other credit metrics.

Figure 11 Change in agency rating and EDF-implied rating (EIR): January 2021 vs. January 2020



5. Summary

The EDF levels for APAC corporates have shown a significant retreat from their recent multi-year high in 2020. This retreat coincided with the remarkable recovery in the equity markets. Nevertheless, with volatility still relatively heightened, EDF levels remained elevated compared to the norm in recent years. Substantial risk is still apparent in a number of industries.

As the impact from the pandemic continues to unfold and the path to recovery takes shape, the EDF remains an accurate and responsive measure of credit risk. We will continue to monitor the changes in credit risk profiles for APAC corporate firms and industries and publish relevant reports accordingly.

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