

Fixed Income Research

KDN PP 16084/10/2012 (030859)

2020 Annual Corporate Default and Rating Transitions Study



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MARC

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Glossary:

AUM	Assets under Management
BNM	Bank Negara Malaysia
CAP	Cumulative Accuracy Profile
EPF	Employees Provident Fund
GDP	Gross Domestic Product
MCO	Movement Control Order
MGS	Malaysian Government Security
NR	Withdrawn Ratings
SRI	Socially Responsible Investment

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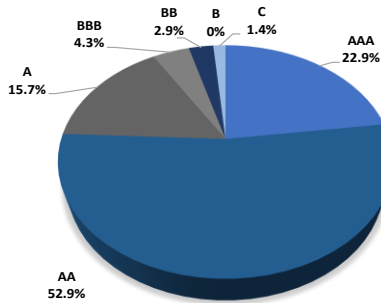
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Executive Summary

This report presents default statistics in MARC’s rating universe and the rating transition experience of corporate bond issuers in 2020. The key findings of our study include:

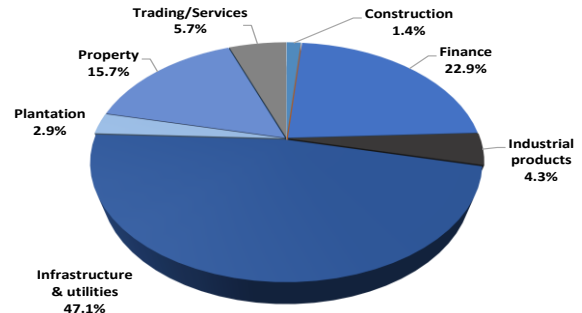
- **Ratings stability remains steady.** In 2020, MARC’s portfolio of rated issuers recorded a rating stability ratio of about 95.7%, similar to the previous year despite the COVID-19 pandemic. MARC’s annual rating stability is higher than the long-term average (2000-2020 period) of 87.2% and has been consistently above the 90% level since 2013. This is attributed to the high concentration of high-grade issuers at 91.4% in 2020 (2019: 91.3%).
- **Negative rating actions continue to dominate with three downgrades recorded.** The pace of downgrades in 2020 was similar to 2019, causing the downgrade rate of MARC’s rated issuers to remain at 4.3%. The downgrades were mostly concentrated on issuers from the infrastructure & utilities sector. There were no upgrades nor defaults being recorded in 2020. As such, MARC’s rating drift remained in negative territory at -4.3%.
- **Notwithstanding this, the long-term default rate remained low for the period of 2000-2020.** MARC’s rated issuers experienced no defaults in 2020 despite the pandemic crisis. No defaults have been recorded for three years in a row since 2017. The long-term default rate for MARC’s overall rated issuers eased to 1.8% (2000-2019 period: 1.9%). By category, the high-grade and high-yield default rates stood at 0.7% and 7.7% (2000-2019 period: 0.7% and 8.1%).
- **Rating accuracy remains sturdy.** MARC’s ability to predict defaults and be consistently effective in rank ordering credit risk through its ratings showed improvement. For the period of 1998-2020, MARC’s one-year rating accuracy ratio improved to 70.1% (1998-2019 period: 69.4%). This was due to lower concentration of issuer defaults from the high-grade category.

Figure 1: Distribution of issuers in the MARC universe by rating band, 2020



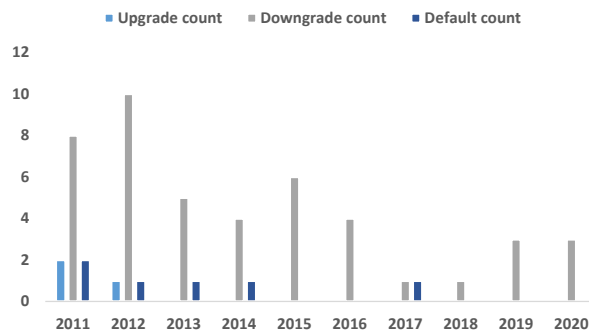
Source: MARC Research

Figure 2: Distribution of issuers in the MARC universe by sector, 2020



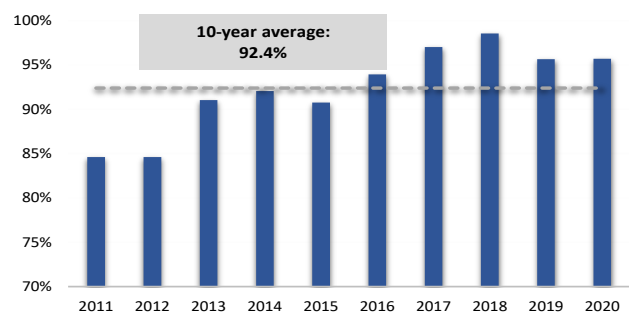
Source: MARC Research

Figure 3: Historical rating migration trend since 2011



Source: MARC Research

Figure 4: Historical ratings stability rate since 2011



Source: MARC Research

Ringgit Corporate Bond Market

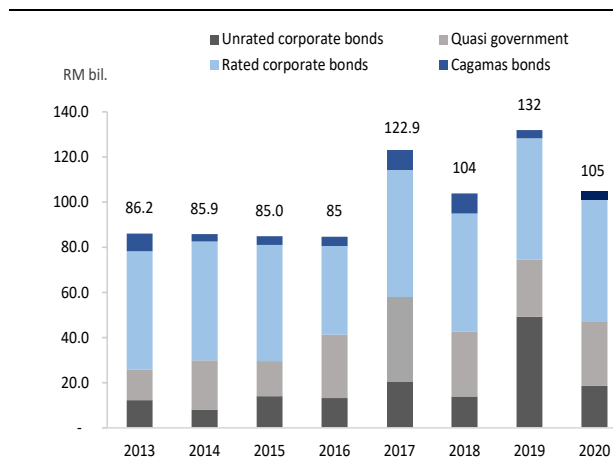
In 2020, the gross issuance of long-term corporate bonds exceeded expectations, amounting to RM104.6 billion, above our forecast of between RM80.0 billion to RM90.0 billion. Gross issuance in 2H2020 surged to RM65.7 billion after recording a dismal RM38.9 billion in 1H2020 as the economy contracted significantly during the first Movement Control Order (MCO) period. Issuers rushed to issue bonds in 2H2020 as the government began to ease restrictions, raising the prospects of a gradual economic recovery in 2021. Issuers from the financial services sector dominated primary market activities with a total gross issuance of RM41.2 billion.

We foresee the gross issuance of corporate bonds to rebound to between RM100.0 billion and RM110.0 billion in 2021, similar to 2018. This assumes that the current economic recovery momentum would continue, leading to an improvement in private investments as business confidence increases. The current low-rate financing landscape would also persuade issuers to raise their issuances to secure financing costs. We also expect a steady growth of quasi-government corporate bonds in 2021 amid the resumption of large infrastructure projects.

Healthy asset growth to underpin demand for corporate bonds in 2021. Given that corporate bond maturity in 2021 is estimated to be around RM51.4 billion, the net issuance of corporate bonds is slated to be in the range of RM48.6 billion to RM58.6 billion. We opine that this excess supply of corporate bonds could be easily absorbed by the market in 2021 as the economy recovers. Based on the latest data available, total assets held by major fixed-income investors in Malaysia grew in 2020 despite the COVID-19 pandemic. The assets under management (AUM) of local fixed-income funds expanded by RM28.4 billion in January-November 2020 (end-2019: RM19.0 billion), total investments held by the Employees Provident Fund (EPF) expanded by RM38.3 billion in January-July 2020 (end-2019: RM70.9 billion) and total assets held by Malaysian-incorporated insurers expanded by RM0.6 billion in 1H2020 (end-2019: RM14.5 billion).

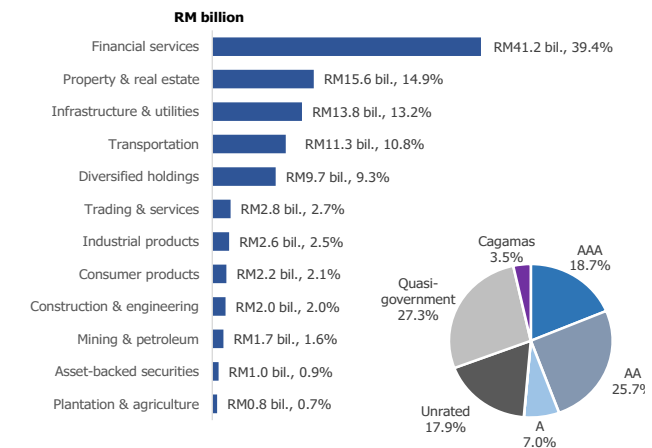
Gross issuance of SRI sukuk to grow in 2021 due to government incentives. The government had introduced measures in Budget 2021 to boost issuances within the Sustainable and Responsible Investment (SRI) sukuk space. Measures include the extension of the green SRI sukuk grant scheme until 2025 and the RM2.0 billion Green Technology Financing Scheme 3.0 with a Danajamin guarantee until 2022. YTD, total outstanding SRI sukuk stood at RM6.1 billion with RM0.9 billion issued in 2020.

Figure 5: Corporate bond issuance trends (RM billion)



Sources: BPAM, MARC Research

Figure 6: Rated corporate bond issuances in 2020: by industry and rating distribution



Sources: BPAM, MARC Research

In 2020, a double-digit bps dip in yields was seen among investment-grade corporate bonds. The decline in yields has effectively extended the gains of the previous year. Yields on AAA, AA and A-rated corporate bonds shed 37bps to 95bps along the 3y15y curve, compared with 2019's fall of between 71bps and 222bps. Most of the gains were concentrated along the front end to the belly of the curve. Corporate bonds garnered support mainly from the reduction in OPR and a benign inflation environment.

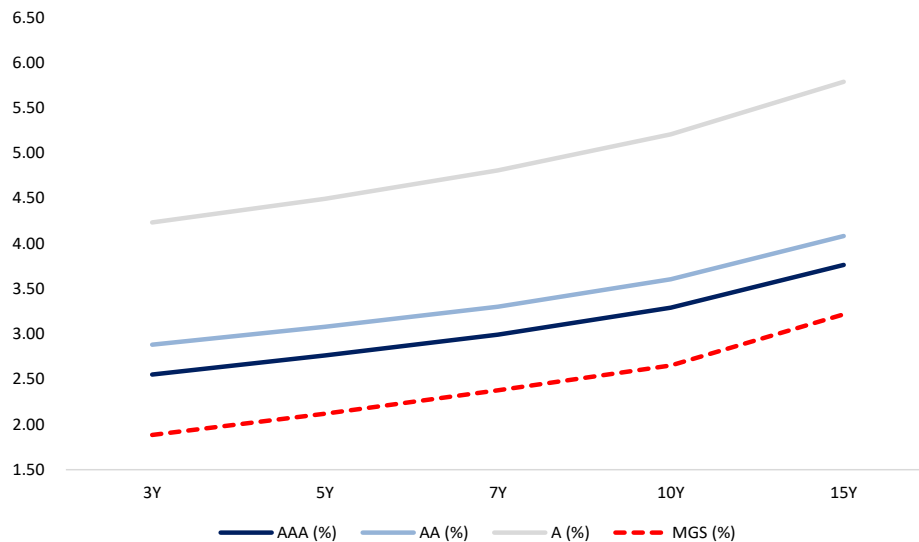
However, credit spreads along the 3y7y curve widened as the yield decline in similar tenured govies was more pronounced. Credit spreads along the 3y7y curve for AAA, AA, A-rated corporate bonds widened by 13bps to 41bps. Meanwhile, the credit spreads along the 10y15y curve rose by just 2bps to 7bps except for A-rated corporate bonds which declined by 15bps to 41bps. This was mostly due to a correction in MGS yields at the long end that took place in the final quarter of the year amid expectations of a heavier supply in 2021.

Trading momentum of corporate bonds softened in 2020 with the volume moderating to RM154.2 billion (2019: RM162.9 billion). Most of the trading interest was on quasi-government bonds with 38.0% of total trades, followed by AA-rated corporate bonds with 27.2% of total trades. Meanwhile, AAA-rated corporate bonds constituted about 23.1% of total trades. By tenure, trades were mostly skewed towards corporate bonds at the belly of the curve at 48.2%.

Upward bias for corporate bond yields in 1H2021 on the back of a steepening MGS yield curve. Nonetheless, we expect the magnitude of yield increases in corporate bonds to be at a smaller scale compared to MGS, further narrowing the credit spread. Corporate bonds tend to be less sensitive to external shocks amid low foreign holdings. Thus, they are more susceptible to domestic factors such as the direction of fiscal and monetary policies.

Credit spreads to remain broadly stable at least in early 2021. Malaysia's macroeconomic indicators suggests that the economy is on the recovery path from the rock-bottom level in 2Q2020. An improved risk appetite could reignite demand for corporate bonds, narrowing the credit spreads.

Figure 7: Yield curve comparison (conventional) as at end-December 2020



Sources: BNM, MARC Research

Figure 8: AAA corporate bond yields

AAA (%)	2019	2020	Y-o-y change
3-year	3.50	2.55	-95 bps
5-year	3.63	2.76	-86 bps
7-year	3.76	2.99	-77 bps
10-year	3.88	3.29	-59 bps
15-year	4.13	3.76	-37 bps

Sources: BNM, MARC Research

Figure 9: AA corporate bonds yield spread (bps)

AA (%)	2019	2020	Y-o-y change
3-year	3.78	2.88	-90 bps
5-year	3.95	3.08	-87 bps
7-year	4.07	3.30	-77 bps
10-year	4.21	3.61	-61 bps
15-year	4.45	4.08	-37 bps

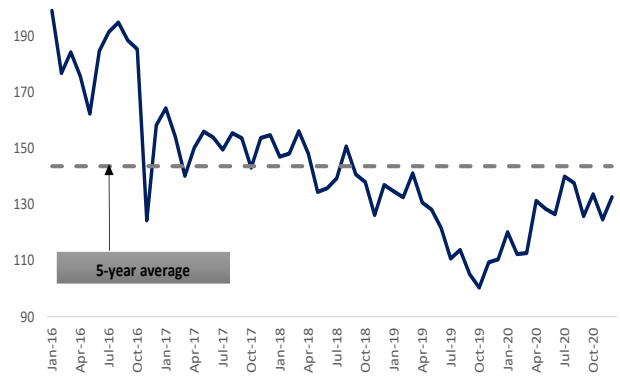
Sources: BNM, MARC Research

Figure 10: A corporate bond yields

A (%)	2019	2020	Y-o-y change
3-year	4.95	4.23	-72 bps
5-year	5.27	4.49	-78 bps
7-year	5.60	4.81	-79 bps
10-year	6.02	5.21	-81 bps
15-year	6.59	5.79	-80 bps

Sources: BNM, MARC Research

Figure 11: 5y corporate bond yield spread (bps)



Sources: BNM, MARC Research

Introduction to MARC’s Corporate Default and Rating Transitions Study

This report is the 16th annual update of MARC’s corporate default and rating transitions study. It presents the latest updates on default statistics and the rating transition experience of corporate bond issuers within MARC’s universe as at end-2020, as well as for the historical period since 1998. The database used for our study was constructed using long-term standalone ratings of those issuers. Similar to our previous studies, issuers which are domiciled in foreign countries were not included in our study due to the constraints of using a local rating scale. Moreover, all structured finance issuers were also excluded from this study. However, due to the problem of a shrinking sample size, our study also covers the implied senior unsecured debt ratings of corporates, credit enhancement providers and financial institutions rated by MARC (See Appendix I for details of the methodology).

An entity’s credit rating captures its corporate credit risk and relative default probability, and higher credit ratings stability is expected at higher rating bands. Similarly, default rates are expected to be lower for higher-rated debt and should increase as we move down the credit rating scale.

Notwithstanding this, an element of statistical bias may occur due to sample size limitations owing to the small number of issuers in our corporate bond ratings universe. As a result, some of the reported statistics may be inconclusive. Furthermore, data enhancement efforts which are being continuously carried out to ensure increased transparency and integrity may limit comparability with earlier default and rating transitions studies. As such, this study is self-contained and supersedes previous studies.

At the beginning of 2020, there were 70 issuers in MARC’s corporate rating universe. Most issuers are concentrated in the high-grade rating category, with 64 rated “A” or above while the remaining six were categorised as high-yield issuers or rated “BBB” or below. Based on the distribution of issuers by sector, the infrastructure & utilities sector remained the largest contributor to MARC’s rating universe at 47.1% of total outstanding, followed by the finance sector at 22.9% and property sector at 15.7%.

Figure 12: Distribution of outstanding issuers by rating band - majority of outstanding issuers are in the high-grade rating category in MARC’s corporate rating universe

Year	AAA	AA	A	BBB	BB	B	C	High grade	High yield
1998	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
1999	33.3%	16.7%	16.7%	33.3%	0.0%	0.0%	0.0%	66.7%	33.3%
2000	30.0%	30.0%	10.0%	30.0%	0.0%	0.0%	0.0%	70.0%	30.0%
2001	18.2%	18.2%	50.0%	9.1%	4.5%	0.0%	0.0%	86.4%	13.6%
2002	12.2%	14.6%	63.4%	7.3%	2.4%	0.0%	0.0%	90.2%	9.8%
2003	12.2%	16.3%	63.3%	6.1%	2.0%	0.0%	0.0%	91.8%	8.2%
2004	8.9%	16.1%	60.7%	10.7%	1.8%	1.8%	0.0%	85.7%	14.3%
2005	9.1%	18.2%	64.9%	6.5%	0.0%	1.3%	0.0%	92.2%	7.8%
2006	10.1%	18.0%	66.3%	3.4%	1.1%	1.1%	0.0%	94.4%	5.6%
2007	10.3%	20.6%	62.9%	3.1%	1.0%	2.1%	0.0%	93.8%	6.2%
2008	12.4%	20.6%	58.8%	4.1%	3.1%	1.0%	0.0%	91.8%	8.2%
2009	15.3%	27.6%	48.0%	3.1%	4.1%	2.0%	0.0%	90.8%	9.2%
2010	19.3%	28.9%	41.0%	3.6%	3.6%	3.6%	0.0%	89.2%	10.8%
2011	23.1%	29.5%	37.2%	5.1%	1.3%	3.8%	0.0%	89.7%	10.3%
2012	28.2%	26.9%	26.9%	11.5%	3.8%	2.6%	0.0%	82.1%	17.9%
2013	32.8%	31.3%	22.4%	6.0%	3.0%	4.5%	0.0%	86.6%	13.4%
2014	27.0%	41.3%	17.5%	6.3%	4.8%	1.6%	1.6%	85.7%	14.3%
2015	27.7%	40.0%	16.9%	9.2%	4.6%	1.5%	0.0%	84.6%	15.4%
2016	25.8%	45.5%	13.6%	9.1%	4.5%	1.5%	0.0%	84.8%	15.2%
2017	26.9%	44.8%	11.9%	10.4%	3.0%	3.0%	0.0%	83.6%	16.4%
2018	24.6%	53.6%	10.1%	5.8%	2.9%	2.9%	0.0%	88.4%	11.6%
2019	24.6%	55.1%	11.6%	4.3%	2.9%	0.0%	1.4%	91.3%	8.7%
2020	22.9%	52.9%	15.7%	4.3%	2.9%	0.0%	1.4%	91.4%	8.6%

Source: MARC Research

Summary of 2020 Experience

Ratings stability remains steady

Ratings in MARC's portfolio remained largely steady in 2020 despite the pandemic crisis. The stability ratio stood at 95.7%, at the same level as the previous year and higher than the long-term average of 87.2%. MARC's annual rating stability has been consistently above 90% since 2013. This was attributed to the high concentration of high-grade issuers at 91.4% in 2020 (2019: 91.3%). Issuers belonging in the high-grade category experienced higher stability compared to high-yield issuers to maintain their ratings over the period. Although there has been a weakening credit profile, they retained sufficient headroom in their respective ratings. After adjusting for withdrawn ratings, 93.5% of issuers in the high-grade category had maintained their ratings from the beginning to the end of the year since inception in 1998.

Figure 13: Summary of annual rating actions

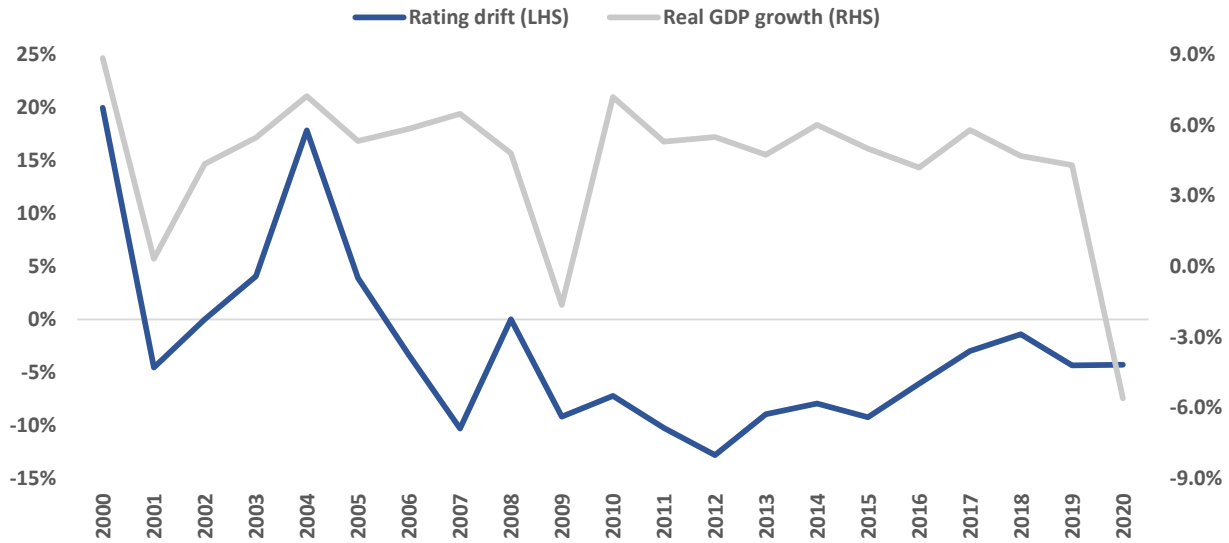
Year	Upgrades	Downgrades	Default	Withdrawn	Migrating	Stable	Margin of downgrade to upgrade
2000	30.0%	0.0%	10.0%	0.0%	40.0%	60.0%	0 : 3
2001	0.0%	0.0%	4.5%	4.5%	4.5%	95.5%	0 : 0
2002	7.3%	7.3%	0.0%	0.0%	14.6%	85.4%	3 : 3
2003	8.2%	4.1%	0.0%	10.2%	12.2%	87.8%	2 : 4
2004	17.9%	0.0%	0.0%	8.9%	17.9%	82.1%	0 : 11
2005	9.1%	2.6%	2.6%	6.5%	14.3%	85.7%	2 : 7
2006	9.0%	11.2%	1.1%	9.0%	21.3%	78.7%	10 : 8
2007	5.2%	11.3%	4.1%	9.3%	20.6%	79.4%	11 : 5
2008	8.2%	7.2%	1.0%	5.2%	16.5%	83.5%	7 : 8
2009	1.0%	5.1%	5.1%	18.4%	11.2%	88.8%	5 : 1
2010	6.0%	12.0%	1.2%	22.9%	19.3%	80.7%	10 : 5
2011	2.6%	10.3%	2.6%	14.1%	15.4%	84.6%	8 : 2
2012	1.3%	12.8%	1.3%	20.5%	15.4%	84.6%	10 : 1
2013	0.0%	7.5%	1.5%	13.4%	9.0%	91.0%	5 : 0
2014	0.0%	6.3%	1.6%	4.8%	7.9%	92.1%	4 : 0
2015	0.0%	9.2%	0.0%	6.2%	9.2%	90.8%	6 : 0
2016	0.0%	6.1%	0.0%	6.1%	6.1%	93.9%	4 : 0
2017	0.0%	1.5%	1.5%	9.0%	3.0%	97.0%	1 : 0
2018	0.0%	1.4%	0.0%	5.8%	1.4%	98.6%	1 : 0
2019	0.0%	4.3%	0.0%	1.4%	4.3%	95.7%	3 : 0
2020	0.0%	4.3%	0.0%	2.9%	4.3%	95.7%	3 : 0
Arithmetic mean	5.0%	5.9%	1.8%	8.5%	12.8%	87.2%	n.a.

Source: MARC Research

Negative rating actions continue to dominate

MARC's corporate portfolio experienced three downgrades and no upgrades in 2020, similar to 2019. The downgrade rate of MARC's portfolio remained at 4.3%, below the long-term average of 5.9%. Of the three issuer downgrades, two were not published. The downgrades were mainly due to pre-existing industry-specific overcapacity issues and project delays being exacerbated by the COVID-19 pandemic and subsequent lockdown measures. One of the issuers had already been experiencing deterioration in its rating prior to the pandemic. The downgrades were mostly concentrated on issuers from the infrastructure & utilities sector. Amid the constant pace of negative rating actions, MARC's rating drift remained in negative territory at -4.3%.

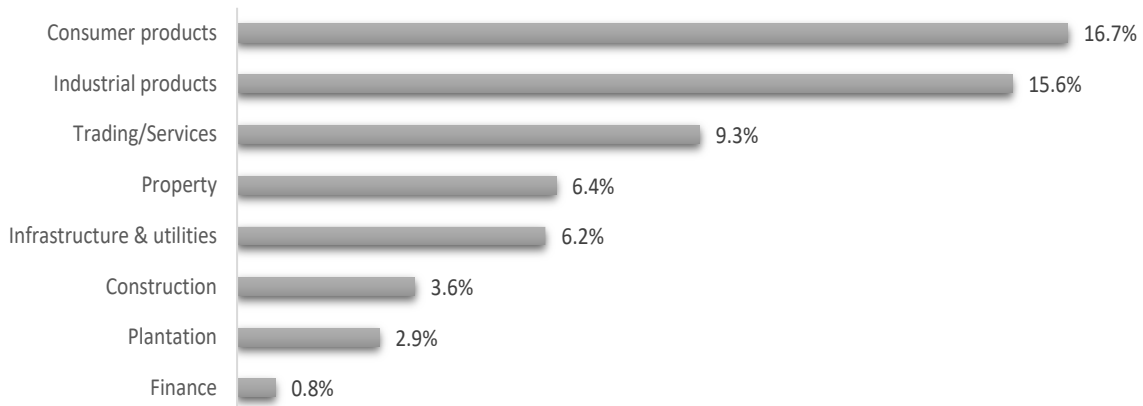
Figure 14: Rating drift* versus real GDP growth in Malaysia



Source: MARC Research

* Rating drift is calculated by the total number of upgrades subtracted by the number of defaults as well as downgrades and divided by the number of issuers operating at the beginning of the year

Figure 15: Corporate downgrade rates by industry: long-term average



Source: MARC Research

Figure 16: Annual corporate downgrade rates by rating band

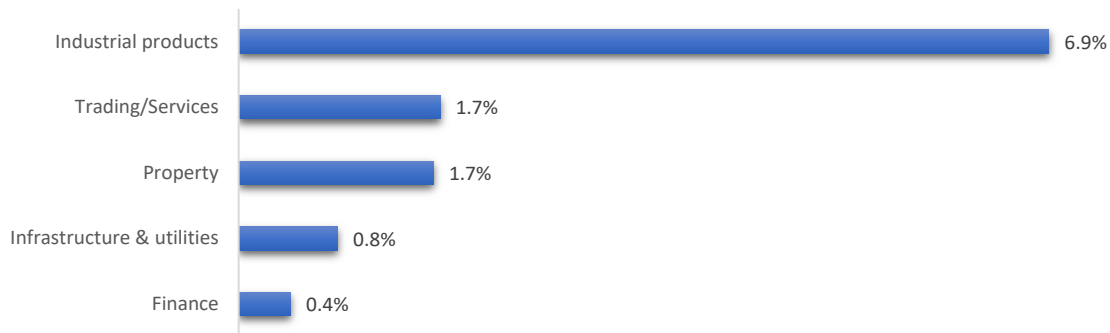
Year	AAA	AA	A	BBB	BB	B	High grade	High yield	All corporate
2000	0.0%	0.0%	0.0%	0.0%	n.a.	n.a.	0.0%	0.0%	0.0%
2001	0.0%	0.0%	0.0%	0.0%	0.0%	n.a.	0.0%	0.0%	0.0%
2002	0.0%	16.7%	3.8%	0.0%	100.0%	n.a.	5.4%	25.0%	7.3%
2003	0.0%	0.0%	6.5%	0.0%	0.0%	n.a.	4.4%	0.0%	4.1%
2004	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2005	0.0%	0.0%	4.0%	0.0%	n.a.	0.0%	2.8%	0.0%	2.6%
2006	0.0%	6.3%	11.9%	33.3%	100.0%	0.0%	9.5%	40.0%	11.2%
2007	0.0%	10.0%	13.1%	33.3%	0.0%	0.0%	11.0%	16.7%	11.3%
2008	0.0%	0.0%	5.3%	100.0%	0.0%	0.0%	3.4%	50.0%	7.2%
2009	0.0%	3.7%	4.3%	33.3%	25.0%	0.0%	3.4%	22.2%	5.1%
2010	0.0%	12.5%	14.7%	0.0%	33.3%	33.3%	10.8%	22.2%	12.0%
2011	0.0%	13.0%	17.2%	0.0%	0.0%	0.0%	11.4%	0.0%	10.3%
2012	0.0%	9.5%	19.0%	22.2%	33.3%	50.0%	9.4%	28.6%	12.8%
2013	4.5%	4.8%	20.0%	0.0%	0.0%	0.0%	8.6%	0.0%	7.5%
2014	0.0%	3.8%	18.2%	25.0%	0.0%	0.0%	5.6%	11.1%	6.3%
2015	5.6%	3.8%	18.2%	33.3%	0.0%	0.0%	7.3%	20.0%	9.2%
2016	0.0%	3.3%	11.1%	16.7%	33.3%	0.0%	3.6%	20.0%	6.1%
2017	0.0%	0.0%	12.5%	0.0%	0.0%	0.0%	1.8%	0.0%	1.5%
2018	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	12.5%	1.4%
2019	0.0%	7.9%	0.0%	0.0%	0.0%	n.a.	4.8%	0.0%	4.3%
2020	0.0%	0.0%	18.2%	33.3%	0.0%	n.a.	3.1%	16.7%	4.3%
Arithmetic mean	0.5%	4.5%	9.4%	15.7%	17.1%	8.9%	5.1%	13.6%	5.9%
Standard deviation	1.5%	5.2%	7.5%	24.2%	32.0%	18.8%	3.8%	14.7%	4.1%
Coefficient of variation	317.6%	114.4%	79.1%	154.0%	186.9%	211.0%	76.1%	108.0%	69.8%

Source: MARC Research

No default in 2020

For three years in a row since 2017, there were no defaults recorded in MARC’s rating universe despite the pandemic crisis in 2020. The long-term annual corporate default rate for the period of 2000-2020 fell to 1.8% (2000-2019 period: 1.9%). A further breakdown shows high-grade and high-yield long-term default rates easing to 0.7% (2000-2019 period: 0.8%) and 7.7% (2000-2019 period: 8.1%).

Figure 17: Corporate default rates by industry: long-term average



Source: MARC Research

Figure 18: Annual corporate default rates by rating band

Year	AAA	AA	A	BBB	BB	B	C	High grade	High yield	All corporate
2000	0.0%	0.0%	0.0%	33.3%	n.a	n.a	n.a	0.0%	33.3%	10.0%
2001	0.0%	0.0%	0.0%	50.0%	0.0%	n.a	n.a	0.0%	33.3%	4.5%
2002	0.0%	0.0%	0.0%	0.0%	0.0%	n.a	n.a	0.0%	0.0%	0.0%
2003	0.0%	0.0%	0.0%	0.0%	0.0%	n.a	n.a	0.0%	0.0%	0.0%
2004	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	n.a	0.0%	0.0%	0.0%
2005	0.0%	0.0%	4.0%	0.0%	n.a	0.0%	n.a	2.8%	0.0%	2.6%
2006	0.0%	0.0%	1.7%	0.0%	0.0%	0.0%	n.a	1.2%	0.0%	1.1%
2007	0.0%	0.0%	3.3%	33.3%	0.0%	50.0%	n.a	2.2%	33.3%	4.1%
2008	0.0%	0.0%	1.8%	0.0%	0.0%	0.0%	n.a	1.1%	0.0%	1.0%
2009	0.0%	0.0%	6.4%	33.3%	0.0%	50.0%	n.a	3.3%	22.2%	5.1%
2010	0.0%	0.0%	2.9%	0.0%	0.0%	0.0%	n.a	1.3%	0.0%	1.2%
2011	0.0%	0.0%	3.4%	0.0%	0.0%	33.3%	n.a	1.4%	12.5%	2.6%
2012	0.0%	0.0%	0.0%	11.1%	0.0%	0.0%	n.a	0.0%	7.1%	1.3%
2013	0.0%	0.0%	6.7%	0.0%	0.0%	0.0%	n.a	1.7%	0.0%	1.5%
2014	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	11.1%	1.6%
2015	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	n.a	0.0%	0.0%	0.0%
2016	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	n.a	0.0%	0.0%	0.0%
2017	0.0%	0.0%	0.0%	14.3%	0.0%	0.0%	n.a	0.0%	9.1%	1.5%
2018	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	n.a	0.0%	0.0%	0.0%
2019	0.0%	0.0%	0.0%	0.0%	0.0%	n.a	0.0%	0.0%	0.0%	0.0%
2020	0.0%	0.0%	0.0%	0.0%	0.0%	n.a	0.0%	0.0%	0.0%	0.0%
Arithmetic mean	0.0%	0.0%	1.4%	8.4%	0.0%	8.9%	33.3%	0.7%	7.7%	1.8%
Standard deviation	0.0%	0.0%	2.2%	15.3%	0.0%	18.8%	57.7%	1.1%	12.2%	2.5%
Coefficient of variation	0.0%	0.0%	151.8%	183.5%	0.0%	211.0%	173.2%	146.5%	158.4%	134.9%

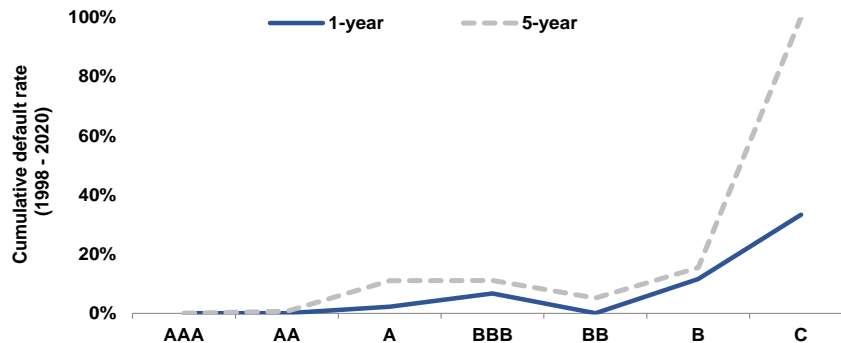
Source: MARC Research

Figure 19: Cumulative default rates by rating band: 1998 – 2020

Rating band	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
AAA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AA	0.0%	0.0%	0.0%	0.2%	0.7%	1.1%	1.6%	1.8%	2.0%	2.3%
A	2.2%	5.0%	7.7%	9.6%	11.0%	11.8%	12.1%	12.3%	12.3%	12.3%
BBB	6.7%	8.9%	8.9%	10.0%	11.1%	13.3%	14.4%	14.4%	14.4%	14.4%
BB	0.0%	2.6%	5.1%	5.1%	5.1%	5.1%	5.1%	5.1%	5.1%	5.1%
B & lower	13.8%	17.2%	17.2%	17.2%	17.2%	17.2%	17.2%	17.2%	17.2%	17.2%
High grade	1.0%	2.1%	3.3%	4.2%	5.0%	5.5%	5.8%	5.9%	6.0%	6.1%
High yield	6.3%	8.9%	9.5%	10.1%	10.8%	12.0%	12.7%	12.7%	12.7%	12.7%
All corporate	1.5%	2.9%	4.0%	4.9%	5.6%	6.2%	6.5%	6.7%	6.8%	6.8%

Source: MARC Research

Figure 20: Effectiveness of MARC’s corporate ratings as default predictor: 1998–2020



Source: MARC Research

Figure 21: List of defaulted issuers since inception in 1998

Year announced	Issuers	Initial rating	Rating 1-year prior to default	Last rating prior to default
2000	MOCCIS Trading Sdn Bhd	BBB	BBB	BBB
2001	Johor City Development Sdn Bhd	AA-	AA-	AA-
2005	ABI Malaysia Sdn Bhd	A	A	A-
2005	Pesaka Astana (M) Sdn Bhd	A+	A+	A+
2006	Maxisegar Sdn Bhd	A	A	BB
2007	Paradym Resources Industries Sdn Bhd	A-	A	BB
2007	Sistem-Lingkaran Lebuhraya Kajang Sdn Bhd	A	B-	B-
2007	ACE Polymers (M) Sdn Bhd	A	A-	BBB-
2007	Peremba Jaya Holdings Sdn Bhd	A	BBB-	C
2008	Evermaster Group Bhd	A	A-	BB-
2009	Tracoma Holdings Bhd	A	B	C
2009	Englotechs Holdings Bhd	A	BBB-	BB
2009	Ingress Sukuk Bhd	A+	A	C
2009	Oilcorp Bhd	A	A-	C
2009	Malaysia International Tuna Port Sdn Bhd	A+	A	C
2010	Malaysia Merchant Marine Bhd	A+	A+	BB+
2011	Dawama Sdn Bhd	A	A-	C
2011	Mithrill Bhd	BBB	B+	B
2012	Maxtral Industry Bhd	A	BBB-	BB
2013	Perwaja Steel Sdn Bhd	A	A-	C
2014	Kinsteel Bhd	A	A-	C
2017	Alam Maritim Resources Bhd	AA-	BBB+	BB+

Source: MARC Research

Rating Transition

MARC’s rating transition matrices summarise the empirical behaviour of its ratings by illustrating the default risk and migration volatility of each rating band. The calculation of rating transition rates compares the ratings of issuers at the beginning of the year with ratings at the end of the year (See Appendix I for details of the methodology).

Over the long term, 94.6% of MARC’s AAA-rated credits maintained their ratings at the end of one year, whereas the comparable share for BBB-rated credits was only 61.1% (see Figure 17). This is not surprising as the incidence of rating changes tends to be lower in higher ratings compared to lower ratings.

The same relationship holds even after adjusting for withdrawn issuers (see Figure 18). Rating stability rates for the “AAA”, “AA” and “A” bands stood at 99.6%, 95.2% and 88.7%, a reflection of the strong positive relationship between the ratings of high-grade credits and long-run ratings stability. In the case of the high-yield group, the small sample size has contributed to counter-intuitive ratings stability measures, with no specific correlation between ratings stability and credit rating. The long-term ratings stability rates for the “BBB”, “BB”, “B”, and “C” bands came in at 78.6%, 84.8%, 81.0%, and 66.7%.

Figure 22: One-year cumulative rating transition matrix: 1998-2020

From / To	AAA	AA	A	BBB	BB	B	C	NR	Default
AAA	94.6%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	0.0%
AA	0.7%	90.5%	3.6%	0.2%	0.0%	0.0%	0.0%	5.0%	0.0%
A	0.0%	2.6%	78.1%	4.4%	0.4%	0.2%	0.2%	11.9%	2.2%
BBB	0.0%	0.0%	4.4%	61.1%	4.4%	1.1%	0.0%	22.2%	6.7%
BB	0.0%	0.0%	0.0%	0.0%	71.8%	12.8%	0.0%	15.4%	0.0%
B	0.0%	0.0%	0.0%	0.0%	0.0%	65.4%	3.8%	19.2%	11.5%
C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	66.7%	0.0%	33.3%

Source: MARC Research

Figure 23: One-year cumulative rating transition matrix: 1998–2020 (NR adjusted)

From / To	AAA	AA	A	BBB	BB	B	C	Default
AAA	99.6%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AA	0.7%	95.2%	3.8%	0.2%	0.0%	0.0%	0.0%	0.0%
A	0.0%	2.9%	88.7%	5.0%	0.4%	0.2%	0.2%	2.5%
BBB	0.0%	0.0%	5.7%	78.6%	5.7%	1.4%	0.0%	8.6%
BB	0.0%	0.0%	0.0%	0.0%	84.8%	15.2%	0.0%	0.0%
B	0.0%	0.0%	0.0%	0.0%	0.0%	81.0%	4.8%	14.3%
C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	66.7%	33.3%

Source: MARC Research

Figure 24: Two-year cumulative rating transition matrix: 1998–2020 (NR adjusted)

From / To	AAA	AA	A	BBB	BB	B	C	Default
AAA	99.2%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AA	1.4%	90.8%	7.0%	0.6%	0.0%	0.0%	0.0%	0.1%
A	0.0%	5.4%	79.1%	8.4%	1.0%	0.5%	0.3%	5.3%
BBB	0.0%	0.2%	9.6%	62.0%	9.4%	3.2%	0.1%	15.7%
BB	0.0%	0.0%	0.0%	0.0%	72.0%	25.1%	0.7%	2.2%
B	0.0%	0.0%	0.0%	0.0%	0.0%	65.5%	7.0%	27.4%
C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	44.4%	55.6%

Source: MARC Research

Figure 25: Three-year cumulative rating transition matrix: 1998–2020 (NR adjusted)

From / To	AAA	AA	A	BBB	BB	B	C	Default
AAA	98.9%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AA	2.0%	86.7%	9.7%	1.0%	0.1%	0.0%	0.0%	0.3%
A	0.1%	7.4%	70.9%	10.6%	1.7%	0.8%	0.4%	8.1%
BBB	0.0%	0.4%	12.0%	49.2%	11.5%	4.9%	0.2%	21.7%
BB	0.0%	0.0%	0.0%	0.0%	61.1%	31.2%	1.7%	6.0%
B	0.0%	0.0%	0.0%	0.0%	0.0%	53.1%	7.8%	39.1%
C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	29.6%	70.4%

Source: MARC Research

Figure 26: Four-year cumulative rating transition matrix: 1998–2020 (NR adjusted)

From / To	AAA	AA	A	BBB	BB	B	C	Default
AAA	98.5%	1.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
AA	2.7%	82.8%	12.0%	1.5%	0.2%	0.1%	0.0%	0.7%
A	0.1%	9.1%	63.8%	11.9%	2.3%	1.2%	0.5%	11.1%
BBB	0.0%	0.8%	13.5%	39.3%	12.6%	6.4%	0.4%	27.0%
BB	0.0%	0.0%	0.0%	0.0%	51.8%	34.5%	2.6%	11.0%
B	0.0%	0.0%	0.0%	0.0%	0.0%	42.9%	7.7%	49.3%
C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	19.8%	80.2%

Source: MARC Research

Figure 27: Five-year cumulative rating transition matrix: 1998–2020 (NR adjusted)

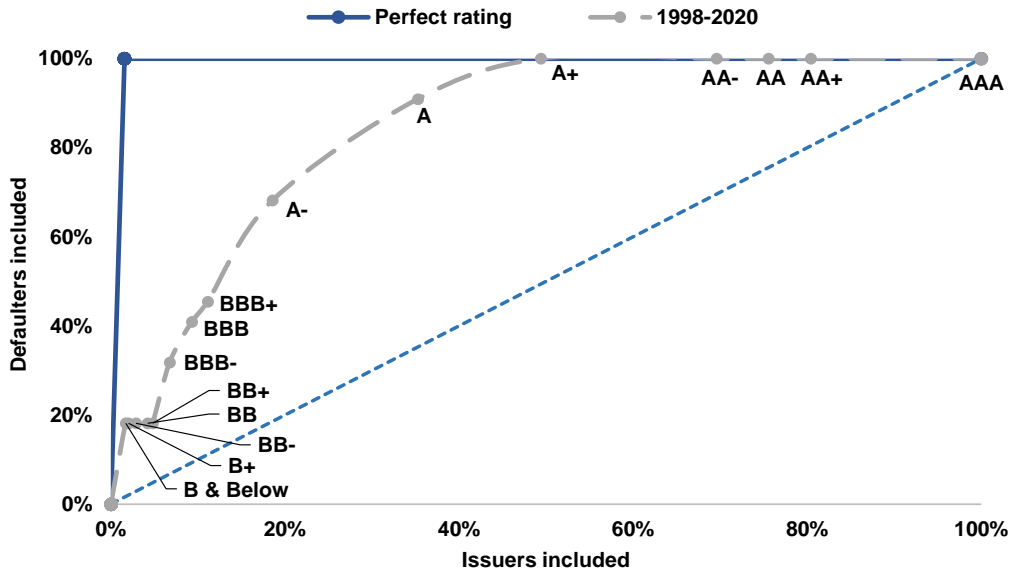
From / To	AAA	AA	A	BBB	BB	B	C	Default
AAA	98.1%	1.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
AA	3.2%	79.2%	13.9%	2.0%	0.3%	0.1%	0.1%	1.1%
A	0.2%	10.6%	57.6%	12.5%	2.9%	1.6%	0.5%	14.0%
BBB	0.0%	1.1%	14.3%	31.5%	13.0%	7.7%	0.6%	31.7%
BB	0.0%	0.0%	0.0%	0.0%	44.0%	35.8%	3.4%	16.8%
B	0.0%	0.0%	0.0%	0.0%	0.0%	34.8%	7.2%	58.0%
C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.2%	86.8%

Source: MARC Research

Rating Accuracy

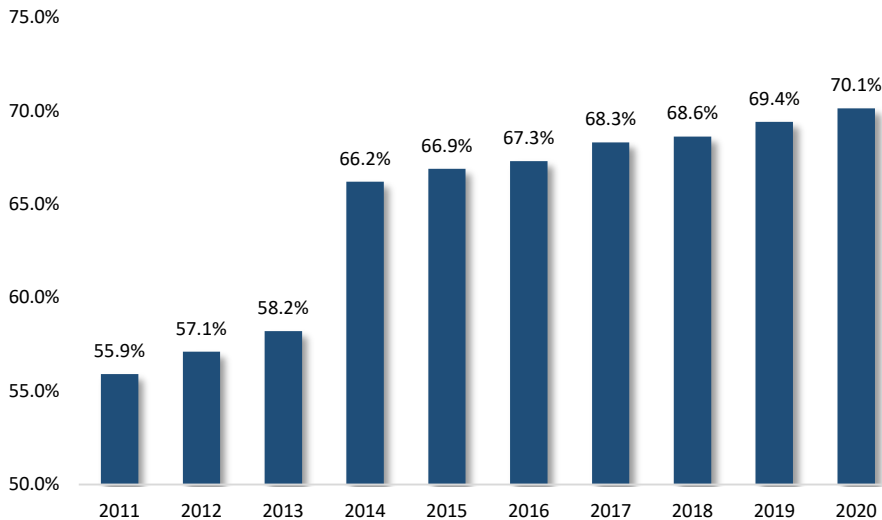
The CAP demonstrates that MARC's ratings have been consistently effective in rank ordering credit risk in predicting defaults across several time horizons. For the period of 1998-2020, MARC's one-year ratings accuracy ratio rose to 70.1% (1998-2019 period: 69.4%) due to absence of high-grade defaults since 2014 and higher concentration of high-grade issuers in MARC's rated portfolio. This increased the concentration of issuer defaults from the high-yield category compared to issuers with stronger ratings. Meanwhile, MARC's one-year ratings accuracy ratio over the period of three and five years until 2020 stood at 81.6% and 98.2% (2019: 77.0% and 98.2%). MARC's ratings continue to correlate with default risk across shorter periods of observation.

Figure 28: One-year CAP curve: 1998-2020



Source: MARC Research

Figure 29: Long-term one-year accuracy ratio



Source: MARC Research

Path to Default from Original Rating and Last Rating

From our observation, initial ratings of issuers within MARC’s rating universe exhibited a negative correlation with their time to default. The average time to default for issuers in the high-grade category is longer compared to issuers from the high-yield category. For the entire pool of defaulters from 2000 to 2020, the average time to default for high-grade issuers was 55 months (4.6 years) with a median of 49 months (4.1 years). In comparison, high-yield issuers took an average time of default of only 40 months (3.3 years) with a median of 18 months (1.5 years). For all issuers, the average time to default was 53 months (4.4 years) with a median of 45 months (3.8 years).

The same is also true when examining the average time to default from prior rating bands. High-grade issuers took an average of 22 months (1.8 years) to default while high-yield issuers took an average of 5 months (0.4 year) to default. This demonstrates that most issuers had been downgraded by MARC to the high-yield category before the default event. As such, issuers from the high-yield category are more vulnerable to default.

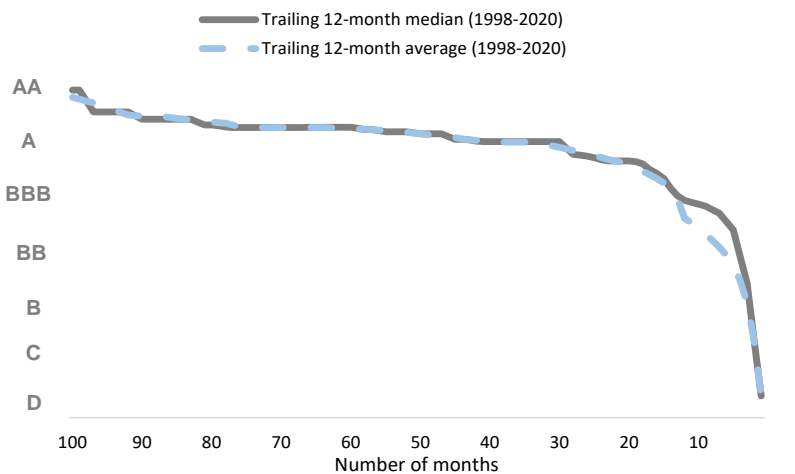
Figure 30: Average time to default and default rating path (number of months)

Original band	Defaulted issuers	Average months from original rating	Median months from original rating
AAA	0	n.a.	n.a.
AA	2	100	100
A	17	50	43
BBB	3	40	18
BB	0	n.a.	n.a.
B	0	n.a.	n.a.
C	0	n.a.	n.a.
High grade	19	55	49
High yield	3	40	18
All corporate	22	53	45

Band prior to default	Defaulted issuers	Average months from last rating	Median months from last rating
AAA	0	n.a.	n.a.
AA	0	n.a.	n.a.
A	2	22	22
BBB	4	10	10
BB	6	1	1
B	2	16	16
C	8	2	1
High grade	2	22	22
High yield	20	5	4
All corporate	22	6	6

Source: MARC Research

Figure 31: Number of months prior to default



Source: MARC Research

Appendix I: Data and Methodologies

This long-term corporate default and rating transitions study uses MARC's database of national scale issuer credit ratings which reflect MARC's independent opinion of an issuer's ability to meet its debt obligations. The relative likelihood of default is indicated by the rating level assigned to the affected issuers, the rating outlook attached as well as the watchlist assigned. MARC's long-term rating scale has a single "C" rating level between "B-" and "D", compared to global rating agencies which typically have three intermediate categories i.e. "CCC", "CC" and "C". Also, within the three categories, the practice is to append modifiers (+/-) or 1, 2, and 3 to each generic rating.

Data enhancement efforts which are being continuously carried out to ensure a certain degree of transparency and integrity may lead to different outcomes from one report to another. This study is self-contained and should supersede previous ones. A major challenge to this study is the extremely small sample size, particularly in high-yield ratings; as a result, some of the statistics could not be divided for investment grade and high-yield analysis as the small number of observations would be statistically insignificant.

Issuers included in this study

This study analyses the rating histories of 227 corporate issuers that were rated by MARC between 1996 and 2020. MARC conducts its analysis of rating transitions and defaults at the issuer level in line with international practice. Each study captures the history of corporate ratings from December 1997 onwards through December 31 of the year indicated for the default study, thus ensuring consistency in the statistical reporting.

To truly reflect an issuer's standalone credit rating, issuing subsidiaries and affiliates were removed where their ratings have a direct relation to their parent company ratings and are being rated on par with the parent's. Credit enhancements such as bank guarantees, corporate guarantees and financial guarantees have been disregarded when assessing the issuer's standalone credit rating. Only issuers with implicit long-term ratings are included in this study, whereas issuers with only short-term ratings are removed for this study. Issuers that only issued structured finance instruments are also excluded. Furthermore, issuers domiciled in foreign countries were also not included in this study due to constraints of using a local rating scale.

Default Definition

Issuers will be rated "D" upon default. Distressed obligations are typically rated along the continuum of "B" to "C" rating categories. In situations where analysis indicates that an instrument is irrevocably impaired where the issuer is not expected to meet payments of interest and/or principal in full in accordance with the terms of the obligation's documentation during the life of the transaction, but where no payment default in accordance with the terms of the documentation is imminent, the obligation may be rated in the "B" or "C" categories.

MARC will assign default ratings where it has reasonably determined that payment has not been made on a material obligation in accordance with the requirements of the obligation's documentation, or where it believes that a default rating consistent with MARC's published definition of default is the most appropriate rating to assign.

Default is defined as one of the following:

- Failure of an issuer/obligor to make timely payment of principal and/or interest under the contractual terms of the rated financial obligation (first dollar missed payment basis);
- Bankruptcy filings, administration, receivership, liquidation, winding-up or cessation of business of an issuer/obligor; or
- Distressed or other coercive exchange of a rated financial obligation, where creditors were offered securities with diminished structural or economic terms compared with the existing financial obligation of the issuer/obligor.

Default Rate Calculation

The default rate used in MARC's Corporate Default Study is defined as the number of defaulters among rated corporates in year t, expressed as a percentage of the total number of outstanding ratings at the beginning of year t.

Rating withdrawals are removed from the default rate calculation as corporates who have their ratings withdrawn are no longer at risk of default over the measurement period. Hence, there are three possible scenarios that need to be modelled to predict the default rate under the scope of MARC's Corporate Default Study: survival to the next time period, rating withdrawal and defaulted issuer.

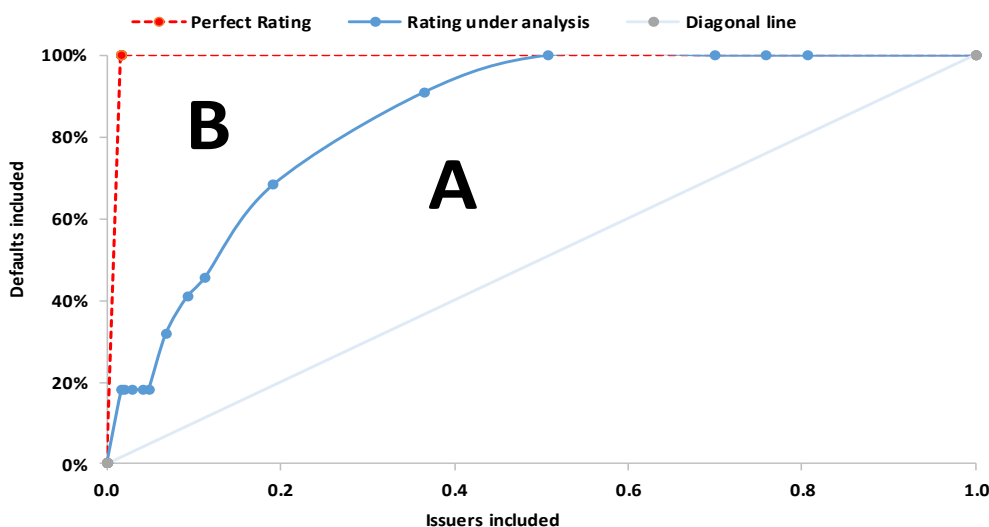
This study is conducted based on actual historical default experience of issuers rated by MARC. It is important to note that the ratings indicated in this study do not imply a specific probability of default.

CAP and Accuracy Ratio

MARC uses CAP to evaluate ordinal accuracy of its ratings. A greater CAP indicates that MARC's rating system is more discriminatory, indicating that defaulters are generally found in the high-yield category rather than the high-grade category. To construct the CAP graph, rating and default data are arranged from the lowest rating category (rated "B" & below here because of sample size constraints) to the highest category (rated "AAA"). The cumulative share of defaulters is then plotted against the cumulative share of issuers by rating until all issuers and defaulters are included to visually render the accuracy of its rank ordering. Rating accuracy ratios reported in this study measure MARC's ability to predict defaults one year ahead.

If MARC's rating methodology does not differentiate credit risk profile at all, then the CAP curve would lie along the diagonal line (45-degree straight line). In this case, its accuracy ratio, which summarises the statistical information in the CAP curve, would be 0%. In contrast, if MARC's rating methodology perfectly ranks issuers according to default risk, all default cases would only occur in the worst rating category. In this case, the CAP would capture all areas above the diagonal line and the accuracy ratio would be equal to 100%. We compute the accuracy ratios by dividing area A (MARC's rating under analysis) over area A + B (perfect rating model).

Figure 32: CAP curve



Source: MARC Research

Transition Analysis

Similar to the methodology used to calculate annual default rates, MARC's rating transition analysis calculates rating transition rates by comparing issuer ratings at the beginning of the time period (January 1) with ratings at the end of the period (December 31). As such, rating migrations that occur in between are not taken into consideration. Multiple counts of an issuer, however, are possible. That is, an issuer that stays in the rating universe for more than one year will continue to be captured year-in, year-out as long as it has not been withdrawn from the rating universe.

For example, if MARC began rating one issuer in 1997 and if its issue had not been withdrawn from the universe until 2020, then this issuer would appear in 23 consecutive 1-year transition tables from 1998 to 2020. If the rating of the issuer was withdrawn in 2015, it would be categorised as "NR" in the 1-year transition table for 2015 and excluded from the 1-year transition tables from 2016 onwards. Similarly, if the issuer defaulted in 2015, it would be included in the "Default" column in the 1-year transition table for 2015 and excluded from the 1-year transition tables from 2016 onwards.

Appendix II: Published downgrades in 2020

Issuer name	Main sector	Date announced	Rating (Before)	Rating (After)	Reasons
MEX II Sdn Bhd	Infrastructure & Utilities	18-Nov-20	A	BBB	MEX II Sdn Bhd's (MEX II) ratings have been on MARCWatch Negative since May 2020 following insufficient progress with respect to MEX II's 16.8-km Lebuhraya Putrajaya-KLIA highway project (MEX Extension) since the ratings were downgraded in October 2019. The current downgrade reflects MARC's increased concerns on MEX II's timely ability to obtain additional financing to meet its debt service in 2021 and complete a debt structuring process.

Source: MARC Research

Appendix III: One-year Rating Migrations at Modifier Level

From / To	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	C	NR	Default
AAA	94.6%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	0.0%
AA+	4.3%	89.9%	1.4%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.9%	0.0%
AA	0.0%	2.4%	83.5%	2.4%	1.2%	1.2%	0.0%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.2%	0.0%
AA-	0.0%	0.0%	2.4%	88.2%	3.8%	0.3%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.5%	0.0%
A+	0.0%	0.0%	0.5%	6.0%	71.6%	6.0%	2.0%	0.5%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	10.9%	1.0%
A	0.0%	0.0%	0.0%	0.4%	6.8%	69.2%	5.5%	1.7%	0.4%	1.7%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	11.8%	2.1%
A-	0.0%	0.0%	0.0%	0.0%	0.0%	7.5%	60.4%	6.6%	2.8%	1.9%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	14.2%	4.7%
BBB+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	15.4%	34.6%	15.4%	3.8%	0.0%	0.0%	0.0%	0.0%	3.8%	0.0%	0.0%	23.1%	3.8%
BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.8%	52.8%	11.1%	0.0%	0.0%	2.8%	0.0%	0.0%	0.0%	0.0%	25.0%	5.6%
BBB-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.6%	3.6%	53.6%	7.1%	3.6%	0.0%	0.0%	0.0%	0.0%	0.0%	17.9%	10.7%
BB+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%
BB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	84.2%	5.3%	5.3%	0.0%	0.0%	0.0%	5.3%	0.0%
BB-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	58.3%	8.3%	16.7%	8.3%	0.0%	0.0%	8.3%	0.0%
B+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	20.0%	40.0%	0.0%	0.0%	20.0%	0.0%
B	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.3%	0.0%	0.0%	44.4%	22.2%
B-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.3%	75.0%	8.3%	0.0%	8.3%	0.0%
C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	66.7%	0.0%	33.3%

Source: MARC Research

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