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MALAYSIAN RATING CORPORATION BERHAD (364803 V)

Fixed Income Research

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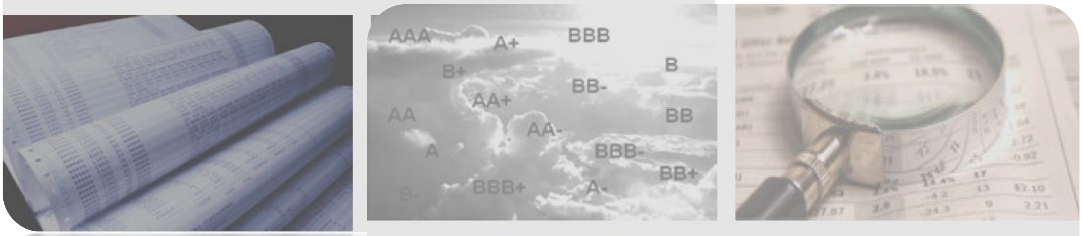
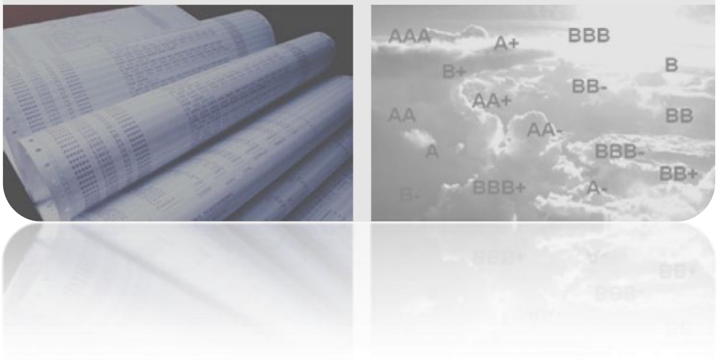
2012 Annual Corporate Default And Rating Transitions Study



Update on Long-term Corporate Rating Migrations from 1996 – 2012



Ratings Department

Milly Leong
Chief Rating Officer
milly@marc.com.my

Economic and Fixed Income Research Department

Nor Zahidi Alias
Chief Economist
zahidi@marc.com.my

Nurhisham Hussein
Economist
nurhisham@marc.com.my

Afiq Akmal Mohamad
Economic Analyst
afiq@marc.com.my

Nick Lee Chin Fah
Fixed Income Analyst
nick@marc.com.my

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- ***Narrowing budget deficit to be govvie supportive.*** The government expects the budget deficit to shrink further to MYR40 billion in 2013 from MYR45 billion in 2012, bringing the total gross issuance size to MYR90-95 billion. Demand for govvies should not be a major problem as the domestic market is flush with liquidity. Pension funds, insurance funds and excess deposits are growing rapidly and this should help sustain demand for government bonds.
- ***Sticky offshore ownership to ease disorderly unwinding concerns.*** Malaysian Government Securities (MGS) offshore ownership will be rather sticky as we estimate the bulk of foreign holdings are by real-money investors, foreign central banks and sovereign wealth funds. However, short-term government bills are much more vulnerable to swings in external factors, especially during rising MYR volatility as offshore funds are driven by the prospects of currency appreciation.
- ***Bumper issuance year for Private Debt Securities (PDS).*** *2012 was a* bumper year for corporate bond issuances with total gross corporate issuance standing at MYR124.6 billion compared to MYR55 billion issued in 2011. We expect the gross issuance level for 2013 to be in the range of MYR75-90 billion, while net issuance is expected to be around MYR43-58 billion, a more normalised level.
- ***Massive liquidity to pull down already low bond yields.*** The impact of the massive amount of liquidity injected globally has somewhat changed investors' perception towards credit risk. In particular, judging by credit risk premiums and economic data, it seems that investors are willing to forgo some risk premium in a bid to chase higher corporate yields.
- ***Increasingly challenging return performance on low yields and tight spreads.*** The spread compression in AAA has almost grounded to a halt and may cap the room for significant AA spread tightening. Even barring any Bank Negara Malaysia (BNM) rate cut, return for credit will be significantly more challenging going forward.

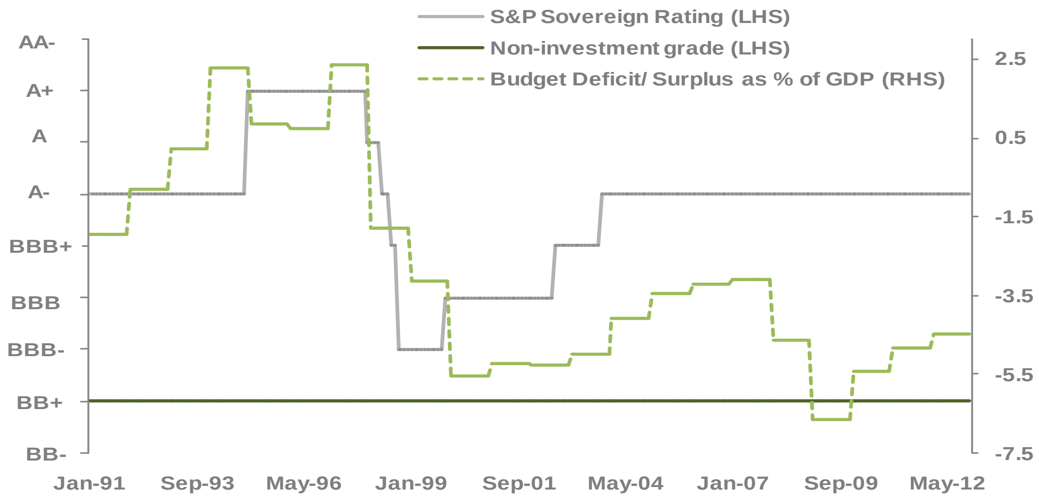
MARC's Corporate Default and Rating Transitions Study 2012

- ***Fine-tuning the methodology to be more representative of issuers' standalone credit strength.*** The ratings of subsidiaries and affiliates which are directly linked to the parent company are removed from the study. In terms of debt seniority, the senior unsecured long-term rating or the highest-rated security line is used. To account for rating scale limitations, issuers domiciled in foreign countries are also excluded from our sample.
- ***Only one corporate default in 2012.*** The overall corporate default rate in 2012 continued to drift lower as only one issuer defaulted for the year. The issuer was first rated at A in 2006 and started to reveal signs of credit deterioration in 2011. It took almost six years from the initiation of the rating to ultimately default.
- ***Rating stability remains strong at 84.0%.*** On issuer count, a total of 63 issuers held on to their existing ratings from 2011 to 2012 while 10 issuers experienced rating downgrades. It is worth noting that all but one issuer went through a single-notch rating cut.
- ***The industrial sector is most susceptible to rating downgrades and default.*** Right through MARC's rating of corporate issuers over the last 10 years, the tendency for rating downgrades has overshadowed rating upgrades at a ratio of 1.2x. Corresponding to our long-run default study, the highest default sector, industrial products, also exhibited the highest downgrade to upgrade ratio.
- ***Time to default is longer for high-grade issuers.*** The average time for a default to occur (the time elapsed between first rating and date of default) for an AA-rated issuer from initiation was 6.4 years, while the average time to default among entities that received an initial rating of BBB was 3.8 years.

Ringgit Bond Market Review

The government expects the budget deficit to shrink further to MYR40 billion in 2013 from MYR45 billion in 2012. Given the deficit target and with an expected MYR50.5 billion maturing in 2013, we foresee the issuance of government bonds to be in the range of MYR90-95 billion. Demand for govvies should not be a major problem as the domestic market is flush with liquidity. Pension funds, insurance funds and excess deposits are growing rapidly and this should help sustain demand for government bonds. In addition, the Government Guaranteed (GG) segment will see another year of robust issuance considering that the current public debt-to-gross domestic product (GDP) ratio of 53% is close to the self-imposed debt ceiling of 55%. As such, we think the GG primary market will continue to be active in 2013.

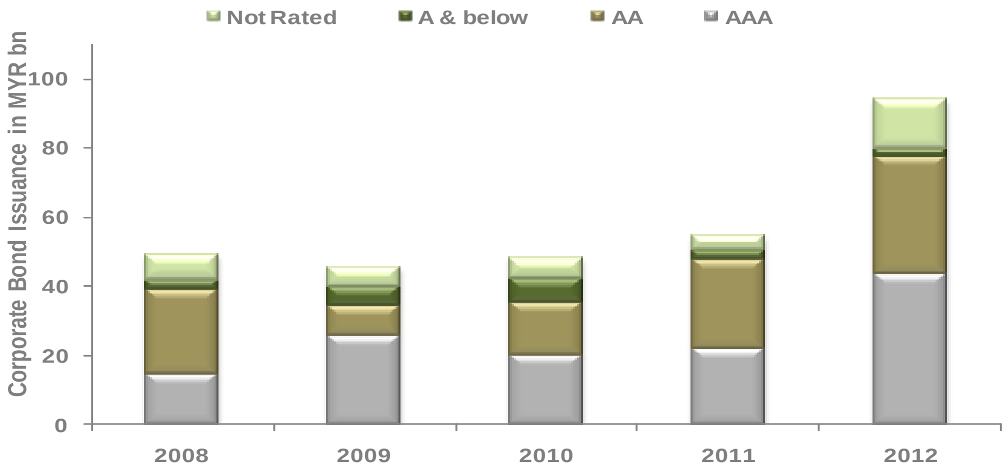
Exhibit 1: Lower budget deficit to be supportive of the sovereign credit rating



Source: Bloomberg, MARC Fixed Income Research

2012 was a bumper year for corporate bond issuances, with total rated primary market issuance of MYR94 billion compared to MYR55 billion issued in 2011, while total gross corporate issuance stood at MYR124.6 billion. The issuance in 2012 was also well above the average annual issuance size of MYR49 billion from 2008 to 2011. However, it is worth noting here that PLUS Berhad (AAA) alone issued MYR19.6 billion from its sukuk programme amounting to MYR23.4 billion. Other significant bond issuances were in the GG non-rated segment by Johor Corp of MYR1.8 billion and Perbadanan Tabung Pendidikan Tinggi Nasional of MYR2.5 billion. Meanwhile, the proportion of GG non-rated bonds issuance increased significantly from MYR15.0 billion in 2011 to MYR30.4 billion in 2012 with Syarikat Prasarana, DanaInfra, Turus Pesawat and SME Bank as the major issuers.

Exhibit 2: New corporate bond issuance by rating band (including Cagamas, ex-NR Government-Guaranteed)

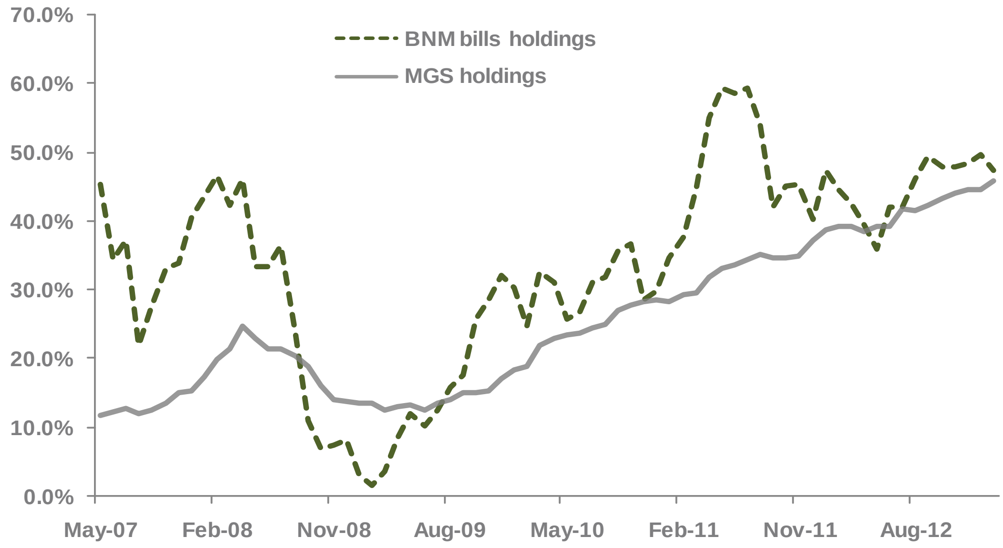


Source: Bank Negara Malaysia, BPAM, MARC Fixed Income Research

Foreign holdings of MGS rose to a record high of MYR132.2 billion in January 2013, or about 44.6% of the outstanding MGS amount, before taking a breather in February, falling by RM1.6 billion to RM130.6 billion. At this juncture, foreign funds appear to be the biggest holders of MGS, holding amounts even higher than the Employees Provident Fund (EPF). Against the backdrop of Quantitative Easing (QE) 3 and other major central banks' asset purchase programmes, the MGS market will likely to be favoured by foreign investors in the near term.

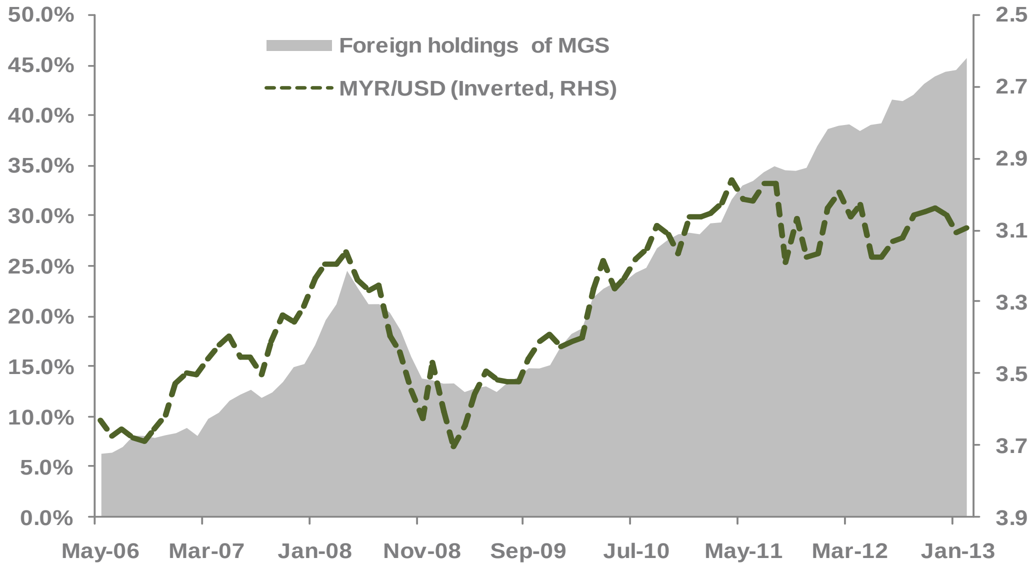
That said, a detailed analysis in Exhibit 3 shows that short-term government bills are much more vulnerable to swings in external factors, especially during periods of higher MYR volatility as offshore funds are driven by prospects of currency appreciation as well as hot money taking advantage of favourable interest rate differentials between bills and the MYR implied yield. However, MGS offshore ownership will be rather sticky as we estimate the bulk of foreign holdings are by real-money investors, foreign central banks and sovereign wealth funds. These funds are typically long term in nature and are also constrained by Malaysia's index weighting. On the other hand, foreign holdings of local PDS only stood at RM14.6 billion as at end-February 2013 and are unlikely to have much impact on the credit market, even in the event of a disorderly unwinding.

Exhibit 3: Percentage (%) of foreign ownership in domestic MGS and bills



Source: Bloomberg

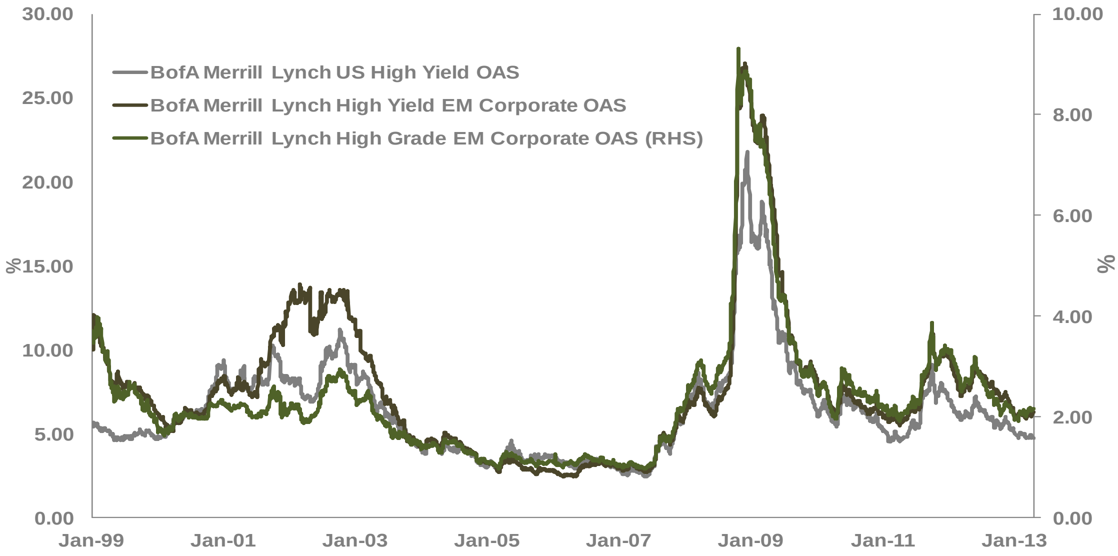
Exhibit 4: Foreign holdings of MGS (%) vs. MYR/USD



Source: Bloomberg, MARC Fixed Income Research

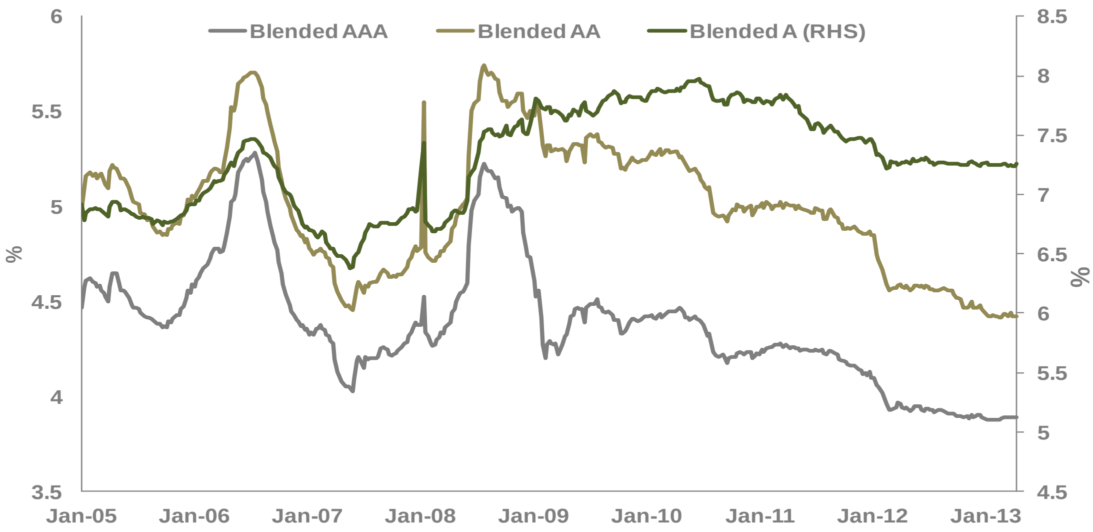
Meanwhile, the credit market has benefited from global loose monetary policies in 2012 as investors sought yields. Enhancing investment yields in the bond market has always been traditionally implementable via lengthening the duration and going down the credit curve, but this also means increasing interest rate and credit risks to the portfolio. Such strategies are not a unique feature to the ringgit credit market; in fact, this has been a prominent trend in the global credit markets.

Exhibit 5: Global market: Bank of America Merrill Lynch corporate option adjusted spreads (OAS)



Source: BoFA Merrill Lynch, Fed of St. Louis

Exhibit 6: 3-, 5- and 10-year blended PDS yields (%)



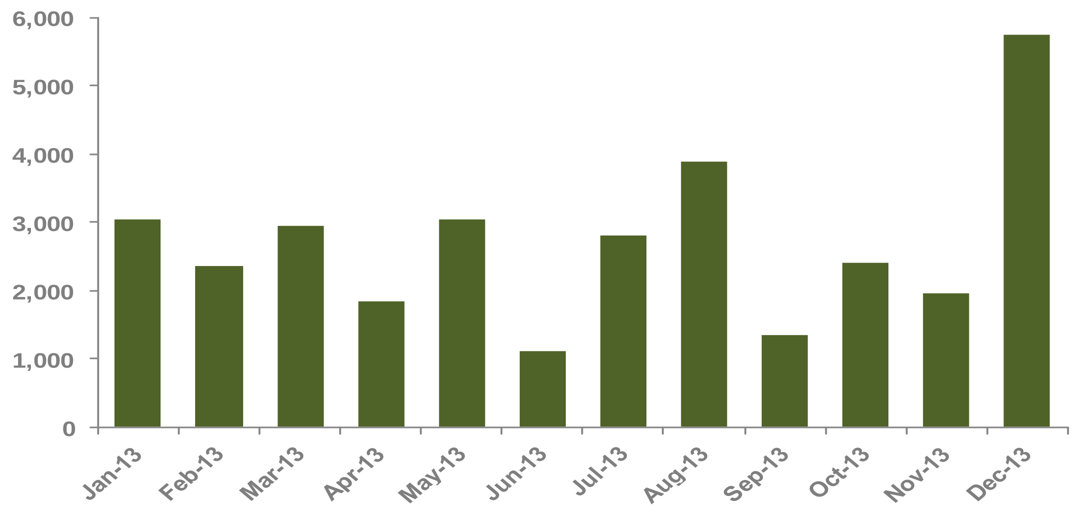
Source: Bloomberg, Bank Negara Malaysia

The Ringgit Credit Market in 2013

We expect gross corporate bond issuance to come in at MYR75-90 billion for the full year of 2013 with the implementation of projects under the Economic Transformation Programme (ETP) as the major catalyst. That said, a large amount of the financing for the ETP is likely to come in via unrated GG notes. That means bond yields coming in at circa 3.80% - 4.30%, assuming the benchmark 10-year MGS yields max out at 3.80% in 2013. The rest of the issuances are likely to be driven by AAA-rated bonds which currently have a spread of just 40-50 bps above govvies.

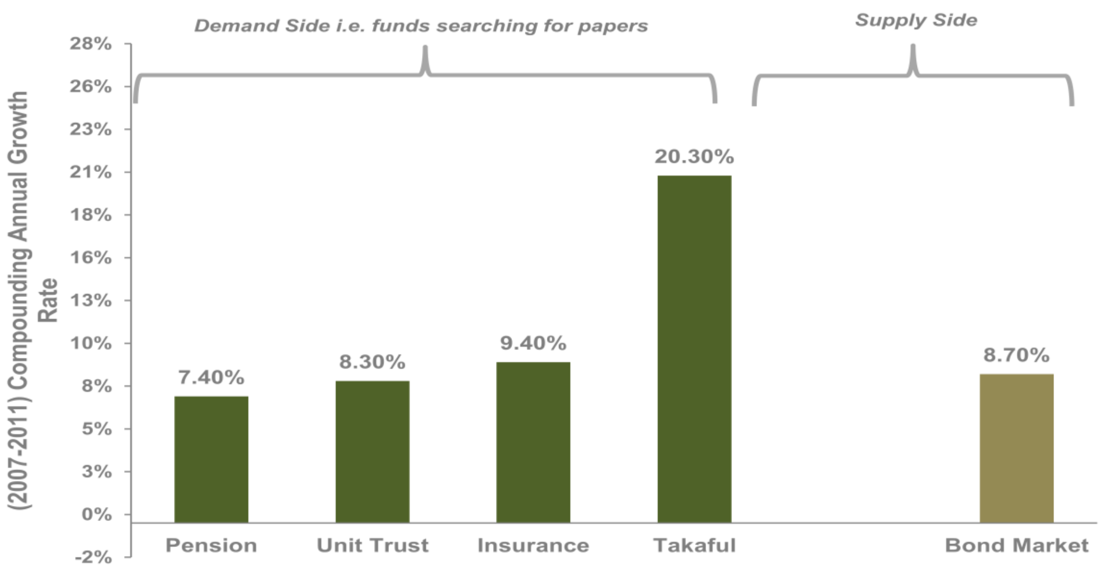
Corporate bond maturities in 2013 are estimated to be approximately MYR32.5 billion and given our gross issuance level of MYR75-90 billion, net issuance will be in the range of MYR43-58 billion. That kind of issuance size can be comfortably absorbed by domestic funds alone. The Employees Provident Fund (EPF) and Kumpulan Wang Persaraan (Diperbadankan), or KWAP, recorded a combined Compound Annual Growth Rate (CAGR) in total investible fund size of 7.4% from 2007 to 2011. Meanwhile, takaful and insurance funds recorded a CAGR of 20.3% and 9.4% respectively over the same period. The conclusion from this analysis is that corporate bond yield compression will likely persist into 2013.

Exhibit 7: Corporate bond maturity profile by month in 2013 (MYR m)



Source: Bloomberg, MARC Fixed Income Research

Exhibit 8: Growth of selected funds – 5-year CAGR (%) vs. bonds outstanding (%)



Source: Bloomberg, Bank Negara Malaysia

High global liquidity to suppress bond yields, boosting risk-taking activities

The impact of the massive amount of liquidity injected globally has somewhat changed investors' perception towards credit risk. In particular, judging by credit risk premiums and economic data, it seems that investors are willing to forgo what would be the "ideal compensation" with yields falling again and again, resulting in a steep narrowing of credit spreads.

While the liquidity injections by central banks in troubled developed nations to avert further economic contraction have been well received by financial markets, the price credit investors are paying are shrinking credit risk premiums. To make things even more complicated for bond investors, direct competition from bank loans are depressing bond yields further, although we expect corporate bond issuance to remain strong in 2013, helped by the lumpy issuance from government-guaranteed bonds.

Limited room for spread compression, returns from taking credit risk could be more challenging

Given the fact that bond yields have dropped significantly in the past few years, it is hard to imagine yields falling even further this year especially when economic fundamentals do not suggest any significant downside risk in the next one year. In our view, the bond bull-run we are seeing thus far is a function of fund flows and hence it may be time to monitor credit fundamentals more closely. This is especially true when bond yields are declining (shrinking risk premiums) at a time when negative rating actions outpace positive rating actions significantly, something which is rather unusual.

There is an increasing concentration towards the AAA rating band and to some extent along the AA1/AA+ rating cohort which is understandable as far as avoiding credit risk is concerned. Exhibit 9 shows that AAA and AA yields have fallen by 130 bps and are hovering at the lowest level since 2004. As such, we think that the massive liquidity that has been injected globally has to some extent heightened investors' credit risk tolerance.

Exhibit 9: AAA & AA bond yields (%) – 130 bps below the previous peak

Source: Bloomberg

Credit performance for 2012 had largely stemmed from taking duration risk as well as going down to AA cohorts for yield pickup and spread tightening. This trend has been well sustained into 1Q2013 and the AA credit segment remains the best performing segment thus far. Meanwhile, the spread compression in AAA has virtually paused and may cap the room for significant AA spread tightening. Even barring a rate cut by BNM, returns for credit will be more challenging going forward.

Exhibit 10: Indicative government and corporate bond yields (%): Yields fell across the board in 2012

Tenure	Govvie, Quasi & Credit	Dec-12	Dec-11	y/y Δ bps	March 2013 Spread	2012 Avg Spread	2011 Avg Spread	2010 Avg Spread
3 Years	*MGS*	*3.06*	*3.02*	*4*				
	Cagamas	*3.66*	*3.64*	*2*	*59*	*59*	*47*	*57*
	AAA	*3.53*	*3.65*	*-12*	*51*	*48*	*47*	*51*
	AA+	*3.78*	*3.92*	*-14*	*74*	*73*	*74*	*84*
	AA	*4.04*	*4.29*	*-25*	*99*	*100*	*110*	*125*
	AA-	*4.27*	*4.54*	*-27*	*122*	*125*	*141*	*166*
	A+	*5.33*	*5.49*	*-16*	*222*	*224*	*232*	*256*
	A	*6.34*	*6.57*	*-23*	*326*	*326*	*349*	*377*
	A-	*7.41*	*7.62*	*-21*	*435*	*431*	*458*	*475*
5 Years	*MGS*	*3.24*	*3.23*	*1*				
	Cagamas	*3.94*	*3.93*	*0*	*70*	*71*	*55*	*68*
	AAA	*3.80*	*3.99*	*-19*	*59*	*60*	*62*	*67*
	AA+	*4.02*	*4.25*	*-23*	*81*	*84*	*91*	*100*
	AA	*4.30*	*4.65*	*-35*	*108*	*116*	*127*	*138*
	AA-	*4.62*	*4.99*	*-37*	*138*	*149*	*168*	*184*
	A+	*5.88*	*6.05*	*-17*	*260*	*265*	*270*	*283*
	A	*6.98*	*7.11*	*-13*	*371*	*371*	*384*	*408*
	A-	*8.12*	*8.32*	*-20*	*488*	*486*	*505*	*511*
10 Years	*MGS*	*3.50*	*3.70*	*-20*				
	Cagamas	*4.44*	*4.60*	*-16*	*93*	*97*	*95*	*106*
	AAA	*4.29*	*4.66*	*-37*	*83*	*85*	*99*	*111*
	AA+	*4.59*	*5.07*	*-48*	*111*	*120*	*140*	*151*
	AA	*4.95*	*5.61*	*-66*	*145*	*163*	*190*	*202*
	AA-	*5.29*	*5.94*	*-65*	*180*	*196*	*229*	*243*
	A+	*7.13*	*7.50*	*-38*	*360*	*367*	*374*	*390*
	A	*8.49*	*8.73*	*-24*	*500*	*498*	*495*	*504*
	A-	*9.63*	*9.85*	*-22*	*614*	*614*	*608*	*605*

Source: Bloomberg, MARC Fixed Income Research

Introduction to MARC's Corporate Default Study

This report presents updates on default statistics and rating transition experience of corporate bond issuers in 2012 as well as historical findings since 1996. This study is the eighth annual update of the MARC corporate default study which was initially published in 2006. The report encapsulates the history of corporate ratings assigned from inception in 1996 to December 31, 2012. To address the problem of shrinking sample size which became more apparent post-global financial crisis due to the concentration of issuance in a smaller number of individual issues and issuers, we have included in our rating universe implied senior unsecured debt ratings or public information ratings of corporates and financial institutions acting in the capacity of credit enhancement provider, and stand-alone ratings of underlying issuers with a Danajamin Nasional Berhad (Danajamin) credit wrap. To dispel any doubts, MARC maintains full rating surveillance on all these unpublished issuers. The structured finance universe and short-term ratings, on the other hand, remain excluded.

The assessment of corporate credit risk and default probability is captured by an entity's individual credit rating. Default rates are expected to be lower for higher-rated debt, and should increase as we move lower down the credit rating scale. Similarly, higher credit ratings stability is expected at higher rating bands as well.

An element of statistical bias may occur as a result of sample size limitations owing to the small number of issuers studied in our corporate bond ratings universe. Therefore, some of the statistics reported may be inconclusive. Furthermore, data enhancement efforts which are being continuously carried out to ensure a certain degree of transparency and integrity, may limit comparability with earlier default and rating transition studies. The study is self-contained and the current study supersedes previous studies.

To summarise rating migrations for the year 2012, there were 10 rating downgrades, 1 upgrade and 1 default against the 8 downgrades, 2 upgrades and 2 defaults recorded in 2011. Among the downgrades, industrial products, infrastructure & utilities and property sectors each experienced 3 rating downgrades respectively. The remaining 1 downgrade was from trading/services. On the other hand, the only upgrade for 2012 stemmed from the property sector.

MARC has rated 161 domestic corporate issuers since 1996, of which 145 issuers, or 90.1%, were initially rated as high grade[1] (A & above) and 16 issuers, or 9.9%, were initially rated as high yield[2] (BBB & below).

Exhibit 11: Distribution of outstanding issuers by rating band - Majority of outstanding issuers belong in the high grade rating category in MARC's corporate rating universe

Rating Band	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
AAA	17.4%	11.9%	12.0%	10.5%	10.3%	11.0%	10.2%	12.2%	14.3%	18.3%	23.1%	26.7%
AA	26.1%	16.7%	18.0%	15.8%	17.9%	18.7%	21.4%	21.4%	28.6%	29.3%	29.5%	28.0%
A	47.8%	61.9%	62.0%	59.6%	64.1%	64.8%	62.2%	58.2%	48.0%	41.5%	37.2%	26.7%
BBB	4.3%	7.1%	6.0%	10.5%	6.4%	3.3%	3.1%	4.1%	3.1%	3.7%	5.1%	12.0%
BB	4.3%	2.4%	2.0%	1.8%	0.0%	1.1%	1.0%	3.1%	4.1%	3.7%	1.3%	4.0%
B	0.0%	0.0%	0.0%	1.8%	1.3%	1.1%	2.0%	1.0%	2.0%	3.7%	3.8%	2.7%
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%
High Grade	91.3%	90.5%	92.0%	86.0%	92.3%	94.5%	93.9%	91.8%	90.8%	89.0%	89.7%	81.3%
High Yield	8.7%	9.5%	8.0%	14.0%	7.7%	5.5%	6.1%	8.2%	9.2%	11.0%	10.3%	18.7%

Source: MARC Fixed Income Research

[1] *The definition here differs from that of market convention which categorises the rating BBB & above as investment grade.*
[2] *The definition here differs from that of market convention which categorises the rating BB & below as speculative grade.*

Summary of 2012 Experience

Only one credit default in 2012, but rising downgrades presage credit quality risks

The lingering effects of the global financial crisis continued to affect the business operating environment locally, especially for industrial products. Though the overall corporate default rate continued to drift lower in 2012, the downgrades-to-upgrades ratio has turned upwards to 10.0x in the context of a rather limited rating universe. This compares to 4.0x in 2011 and could portend a higher default rate in subsequent periods. In addition, the inclusion of stand-alone ratings of underlying issuers with a Danajamin credit wrap (the majority of which are in the BBB rating band) is expected to contribute to higher rating volatility going forward.

Fine-tuning methodology to better reflect issuer credit strength

The ratings of subsidiaries and affiliates which are directly linked to the parent company are removed from our study. In terms of debt seniority, the senior unsecured long-term rating or the highest-rated security line are used. To account for the limitations of the rating scale, issuers domiciled in foreign countries are also excluded from our sample.

Rating stability remains strong at 84.0%

Reflecting the higher downgrades-to-upgrades ratio, rating stability edged lower to 84.0% in 2012 from 84.6% in 2011. A total of 63 issuers maintained their ratings from 2011 while 10 issuers or 13.3% of the issuer rating universe saw their ratings downgraded. It is noteworthy that all but one issuer encountered only a single-notch rating downgrade. There was a single incidence of issuer corporate default in 2012 compared to two in 2011, which helped halve the default rate to 1.3% from 2.6% a year earlier. However, going by the list of negative rating migrations in 2012, it should be highlighted that at the end of 2012 there were two published ratings in the B rating band as well as issuers rated BBB and below on a stand-alone basis with Danajamin credit wrap. These could contribute to a higher default rate in 2013.

Industrial Products are more susceptible to rating downgrades and credit default historically

MARC's long-run corporate rating experience for the period 2003-2012 shows that rating downgrades have historically outnumbered upgrades, at a ratio of 1.2x. The industrial products sector suffered the highest incidence of defaults and the highest downgrade-to-upgrade ratio of 5.5x, followed by the infrastructure & utilities and property sectors. Of all the sectors, the finance sector showed the highest rating upside potential, with a downgrade to upgrade ratio of 1 in 10.

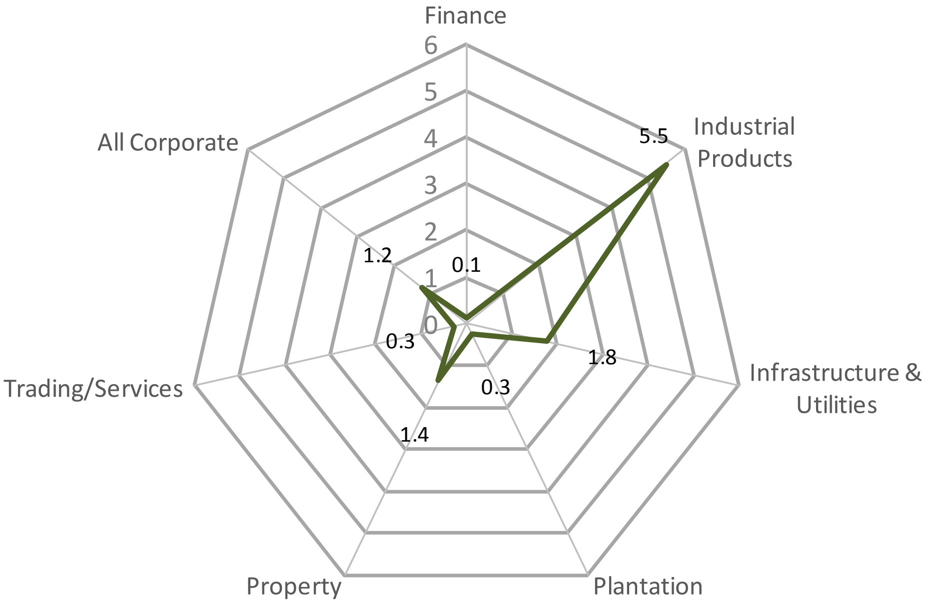
At the beginning of the year, 75 issuers were in MARC's corporate rating universe with 61 issuers rated in the high grade segment (A & above rating bands) while the remaining 14 issuers catergorised in the high yield spectrum (BBB & lower rating bands). At the end of December 2012, MARC's long-term annual corporate default rate stood at 1.9% with the high-grade and high-yield default rates coming in at 1.5% and 6.3% respectively. The annual default rate of 1.3% in 2012 was lower than the 2.6% reported in the previous year. In terms of industry sector, industrial products, and property exhibited the highest default rates of 6.3% and 2.6%.

Exhibit 12: Summary of annual rating actions

Year	Issuers as of 1st January	Upgrades	Downgrades	Default	Withdrawn	Migrating	Stable	Downgrade to Upgrade (x)
2001	23	0.0%	0.0%	4.3%	4.3%	4.3%	95.7%	n.a
2002	42	7.1%	7.1%	0.0%	2.4%	14.3%	85.7%	1.0
2003	50	8.0%	4.0%	0.0%	10.0%	12.0%	88.0%	0.5
2004	57	19.3%	0.0%	0.0%	10.5%	19.3%	80.7%	0.0
2005	78	9.0%	2.6%	2.6%	9.0%	14.1%	85.9%	0.3
2006	91	8.8%	11.0%	1.1%	9.9%	20.9%	79.1%	1.3
2007	98	5.1%	11.2%	4.1%	11.2%	20.4%	79.6%	2.2
2008	98	8.2%	7.1%	1.0%	8.2%	16.3%	83.7%	0.9
2009	98	1.0%	5.1%	5.1%	23.5%	11.2%	88.8%	5.0
2010	82	6.1%	12.2%	1.2%	24.4%	19.5%	80.5%	2.0
2011	78	2.6%	10.3%	2.6%	20.5%	15.4%	84.6%	4.0
2012	75	1.3%	13.3%	1.3%	21.3%	16.0%	84.0%	10.0
Arithmetic Mean	**n.a**	**6.4%**	**7.0%**	**1.9%**	**12.9%**	**15.3%**	**84.7%**	**1.2**

Source: MARC Fixed Income Research

Exhibit 13: Historical downgrade-to-upgrade ratios (x) across major industries (2001-2012)



Source: MARC Fixed Income Research

Exhibit 14: Corporate default summary by number of issuers

Year	Issuers as of 1st January	Default count (High Grade)	Default count (High Yield)	High Grade Default Rate	High Yield Default Rate	All Corporate Default Rate
2001	23	1	0	4.8%	0.0%	4.3%
2002	42	0	0	0.0%	0.0%	0.0%
2003	50	0	0	0.0%	0.0%	0.0%
2004	57	0	0	0.0%	0.0%	0.0%
2005	78	2	0	2.8%	0.0%	2.6%
2006	91	1	0	1.2%	0.0%	1.1%
2007	98	2	2	2.2%	33.3%	4.1%
2008	98	1	0	1.1%	0.0%	1.0%
2009	98	3	2	3.4%	22.2%	5.1%
2010	82	1	0	1.4%	0.0%	1.2%
2011	78	1	1	1.4%	12.5%	2.6%
2012	75	0	1	0.0%	7.1%	1.3%
Arithmetic Mean	**n.a.**	**n.a.**	**n.a.**	**1.5%**	**6.3%**	**1.9%**

Source: MARC Fixed Income Research

Exhibit 15: 2012 defaulting pool

Issuer	Industry	Amount Rated (MYR m)	Default Announced	Date of First Rating	Initial Rating	Date of Last Review	Rating 1-year Prior to default	Last Rating Prior to Default	Years to Default
Maxtral Industry Bhd	Industrial Products	100.0	Apr-12	Apr-06	A	Mar-12	BBB-	BB	6.0

Source: MARC Fixed Income Research

Exhibit 16: Annual corporate default rates by rating band

Year	AAA	AA	A	BBB	BB	B	C	High Grade	High Yield	All Corporate
2001	0.0%	16.7%	0.0%	0.0%	0.0%	0.0%	0.0%	4.8%	0.0%	4.3%
2002	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2003	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2004	0.0%	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%	0.0%	0.0%	0.0%	2.8%	0.0%	2.6%
2006	0.0%	0.0%	1.7%	0.0%	0.0%	0.0%	0.0%	1.2%	0.0%	1.1%
2007	0.0%	0.0%	3.3%	33.3%	0.0%	50.0%	0.0%	2.2%	33.3%	4.1%
2008	0.0%	0.0%	1.8%	0.0%	0.0%	0.0%	0.0%	1.1%	0.0%	1.0%
2009	0.0%	0.0%	6.4%	33.3%	0.0%	50.0%	0.0%	3.4%	22.2%	5.1%
2010	0.0%	0.0%	2.9%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	1.2%
2011	0.0%	0.0%	3.4%	0.0%	0.0%	33.3%	0.0%	1.4%	12.5%	2.6%
2012	0.0%	0.0%	0.0%	11.1%	0.0%	0.0%	0.0%	0.0%	7.1%	1.3%
Arithmetic Mean	0.0%	1.4%	2.0%	6.5%	0.0%	11.1%	0.0%	1.5%	6.3%	1.9%
Standard Deviation	0.0%	4.8%	2.1%	12.9%	0.0%	20.5%	0.0%	1.5%	11.0%	1.8%
Coefficient of Variation	0.0%	346.4%	106.6%	199.6%	0.0%	184.6%	0.0%	100.7%	176.2%	91.6%

Source: MARC Fixed Income Research

Exhibit 17: Annual corporate default rates by industry

Sector	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Wtd. Average
Construction	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%
Consumer Products	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%
Finance	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%
Hotels	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%
Industrial Products	0.0%	0.0%	0.0%	0.0%	10.5%	0.0%	8.0%	4.3%	14.3%	0.0%	7.7%	11.1%	6.3%
Infrastructure & Utilities	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.5%	0.0%	4.3%	0.0%	0.0%	0.0%	0.9%
Insurance Company	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%
Plantation	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%
Property	20.0%	0.0%	0.0%	0.0%	0.0%	8.3%	7.7%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%
Technology	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%
Trading/Services	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.6%	7.1%	8.3%	0.0%	2.3%
Quasi Sovereign	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%
All Corporate	**4.3%**	**0.0%**	**0.0%**	**0.0%**	**2.6%**	**1.1%**	**4.1%**	**1.0%**	**5.1%**	**1.2%**	**2.6%**	**1.3%**	**1.9%**

Source: MARC Fixed Income Research

Exhibit 18: History of issuers downgraded to D excluding bank-guaranteed issuers

Year Announced	Issuers	Initial Rating	Rating one 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

Source: MARC Fixed Income Research

Exhibit 19: Corporate upgrade rates by rating band

Year	AAA	AA	A	BBB	BB	B	C	High Grade	High Yield	All Corporate
2001	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2002	0.0%	0.0%	7.7%	33.3%	0.0%	0.0%	0.0%	5.3%	25.0%	7.1%
2003	0.0%	0.0%	12.9%	0.0%	0.0%	0.0%	0.0%	8.7%	0.0%	8.0%
2004	0.0%	22.2%	23.5%	16.7%	0.0%	0.0%	0.0%	20.4%	12.5%	19.3%
2005	0.0%	7.1%	10.0%	20.0%	0.0%	0.0%	0.0%	8.3%	16.7%	9.0%
2006	0.0%	11.8%	10.2%	0.0%	0.0%	0.0%	0.0%	9.3%	0.0%	8.8%
2007	0.0%	9.5%	4.9%	0.0%	0.0%	0.0%	0.0%	5.4%	0.0%	5.1%
2008	0.0%	9.5%	8.8%	0.0%	0.0%	100.0%	0.0%	7.8%	12.5%	8.2%
2009	0.0%	0.0%	2.1%	0.0%	0.0%	0.0%	0.0%	1.1%	0.0%	1.0%
2010	0.0%	12.5%	5.9%	0.0%	0.0%	0.0%	0.0%	6.8%	0.0%	6.1%
2011	0.0%	4.3%	0.0%	25.0%	0.0%	0.0%	0.0%	1.4%	12.5%	2.6%
2012	0.0%	0.0%	0.0%	11.1%	0.0%	0.0%	0.0%	0.0%	7.1%	1.3%
Arithmetic Mean	0.0%	6.4%	7.2%	8.8%	0.0%	8.3%	0.0%	6.2%	7.2%	6.4%
Standard Deviation	0.0%	7.0%	6.8%	12.1%	0.0%	28.9%	0.0%	5.7%	8.5%	5.2%
Coefficient of Variation	0.0%	109.7%	94.7%	136.3%	0.0%	346.4%	0.0%	91.0%	118.7%	81.5%

Source: MARC Fixed Income Research

Exhibit 20: Corporate upgrade rates by industry

Sector	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Wtd. Average
Construction	0.0%	0.0%	20.0%	40.0%	20.0%	0.0%	25.0%	33.3%	0.0%	0.0%	0.0%	0.0%	13.6%
Consumer Products	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%
Finance	0.0%	16.7%	28.6%	25.0%	12.5%	50.0%	12.5%	50.0%	0.0%	21.4%	0.0%	0.0%	16.1%
Hotels	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%
Industrial Products	0.0%	0.0%	0.0%	0.0%	5.3%	4.5%	0.0%	0.0%	0.0%	6.7%	7.7%	0.0%	2.5%
Infrastructure & Utilities	0.0%	0.0%	0.0%	15.4%	14.3%	11.1%	9.1%	0.0%	0.0%	0.0%	4.8%	0.0%	4.4%
Insurance Company	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	n.a
Plantation	0.0%	0.0%	0.0%	16.7%	16.7%	0.0%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%	7.4%
Property	0.0%	12.5%	11.1%	22.2%	0.0%	8.3%	7.7%	9.1%	0.0%	0.0%	0.0%	10.0%	7.1%
Technology	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%
Trading/Services	0.0%	33.3%	0.0%	14.3%	9.1%	0.0%	0.0%	0.0%	0.0%	7.1%	0.0%	0.0%	3.1%
Quasi Sovereign	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%	13.3%
All Corporate	0.0%	7.1%	8.0%	19.3%	9.0%	8.8%	5.1%	8.2%	1.0%	6.1%	2.6%	1.3%	6.3%

Source: MARC Fixed Income Research

Exhibit 21: Corporate downgrade rates by rating band

Year	AAA	AA	A	BBB	BB	B	C	High Grade	High Yield	All Corporate
2001	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2002	0.0%	14.3%	3.8%	0.0%	100.0%	0.0%	0.0%	5.3%	25.0%	7.1%
2003	0.0%	0.0%	6.5%	0.0%	0.0%	0.0%	0.0%	4.3%	0.0%	4.0%
2004	0.0%	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%	0.0%	0.0%	0.0%	2.8%	0.0%	2.6%
2006	0.0%	5.9%	11.9%	33.3%	100.0%	0.0%	0.0%	9.3%	40.0%	11.0%
2007	0.0%	9.5%	13.1%	33.3%	0.0%	0.0%	0.0%	10.9%	16.7%	11.2%
2008	0.0%	0.0%	5.3%	100.0%	0.0%	0.0%	0.0%	3.3%	50.0%	7.1%
2009	0.0%	3.6%	4.3%	33.3%	25.0%	0.0%	0.0%	3.4%	22.2%	5.1%
2010	0.0%	12.5%	14.7%	0.0%	33.3%	33.3%	0.0%	11.0%	22.2%	12.2%
2011	0.0%	13.0%	17.2%	0.0%	0.0%	0.0%	0.0%	11.4%	0.0%	10.3%
2012	0.0%	9.5%	20.0%	22.2%	33.3%	50.0%	0.0%	9.8%	28.6%	13.3%
Arithmetic Mean	0.0%	5.7%	8.4%	18.5%	24.3%	6.9%	0.0%	6.0%	17.1%	7.0%
Standard Deviation	0.0%	5.8%	6.7%	29.7%	37.8%	16.6%	0.0%	4.3%	17.4%	4.7%
Coefficient of Variation	0.0%	101.9%	80.2%	160.5%	155.7%	239.1%	0.0%	72.1%	101.8%	67.0%

Source: MARC Fixed Income Research

Exhibit 22: Corporate downgrade rates by industry

Sector	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Wtd. Average
Construction	0.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%
Consumer Products	0.0%	0.0%	0.0%	0.0%	0.0%	33.3%	33.3%	0.0%	33.3%	0.0%	0.0%	0.0%	13.0%
Finance	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.3%	0.0%	7.1%	0.0%	1.8%
Hotels	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%
Industrial Products	0.0%	50.0%	0.0%	0.0%	5.3%	18.2%	20.0%	17.4%	9.5%	6.7%	7.7%	33.3%	13.9%
Infrastructure & Utilities	0.0%	0.0%	7.7%	0.0%	7.1%	5.6%	0.0%	0.0%	0.0%	25.0%	23.8%	14.3%	7.8%
Insurance Company	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	n.a.
Plantation	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%	0.0%	1.9%
Property	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%	15.4%	18.2%	11.1%	0.0%	0.0%	30.0%	9.7%
Technology	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%
Trading/Services	0.0%	0.0%	20.0%	0.0%	0.0%	6.7%	20.0%	5.6%	0.0%	21.4%	8.3%	10.0%	8.5%
Quasi Sovereign	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%
All Corporate	0.0%	7.1%	4.0%	0.0%	2.6%	11.0%	11.2%	7.1%	5.1%	12.2%	10.3%	13.3%	7.8%

Source: MARC Fixed Income Research

Rating Transition: Strong inverse relationship between high-grade credits and their corresponding default probabilities

MARC assigns the ratings based on a default probability model which is a combination of both qualitative and quantitative assessments. The rating summarises the ability of issuers to meet the obligation, both in terms of interest payments and principal repayments. In addition, MARC also factors in the rating through a cyclical element in its rating when assessing the credit profile of issuers, and relevant industry risks are also analysed from both short-term and long-term perspectives. However, rating movement may also be impacted by other structural developments, which most of the time are due to idiosyncratic developments affecting a specific issuer.

Like the methodology used to calculate the annual default rates, the calculation of rating transition rates also compares the ratings of issuers at the beginning of the time period (1st January) with ratings at the end of the time period (31st December); therefore, multiple rating migrations within this period will not be taken into consideration. Multiple counts of an issuer, however, are possible, i.e. 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 2011, then this issuer would appear in the 14 consecutive 1-year transition tables from 1998 to 2011.

Rating transition rates are comparable to cumulative default rates. However, due to significant sample constraints in the MARC rating universe, caution should be exercised in interpreting the statistics. At the beginning of 2012, there were only 75 outstanding issuers in MARC's corporate universe, of which only 14 were in the high-yield segment.

An examination of the one-year rating migration as depicted in Exhibit 23 to 25 was done at the broad rating category, i.e. from AA to A, as opposed to the transitions at the modifier level, i.e. AA+ to AA. The vertical axis shows outstanding ratings at the beginning of the year and the horizontal axis summarises the 1-year migration behavior. Nevertheless, for transparency purposes, MARC has also computed the transition matrices at the modifier level which are attached in Appendix III.

The following outcomes are observed in MARC's corporate rating universe:

- There is a positive relationship between credit ratings and rating stability over time. In the high-grade category, the 1-year rating stability for AAA, AA and A stood at 99.2%, 91.0% and 89.6% respectively over the long run after adjusting for withdrawn issuers. In the high-yield category, a similar pattern was also observed with 1-year rating stability of 73.8%, 76.5% and 78.6% for BBB, BB and B respectively, but it is worth noting again that our sample size is fairly small.

- In terms of default probability, the transition tables also confirmed that MARC's corporate ratings correlate negatively with default rates where highly rated credits carry lower default probability. There are no corporate defaults in the AAA and AA+ rating cohorts in MARC's rating history. This attests to the strong credibility of top-notch credit ratings assigned by MARC.

Exhibit 23: 1-year cumulative rating transition matrix: 1998 – 2012

1998-2012	AAA	AA	A	BBB	BB	B	C	NR	Default
AAA	**94.9%**	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	4.4%	0.0%
AA	2.4%	**83.4%**	5.4%	0.0%	0.0%	0.0%	0.0%	8.3%	0.5%
A	0.0%	2.8%	**78.0%**	3.5%	0.4%	0.0%	0.0%	13.0%	2.4%
BBB	0.0%	0.0%	7.7%	**59.6%**	5.8%	1.9%	0.0%	17.3%	7.7%
BB	0.0%	0.0%	0.0%	0.0%	**65.0%**	20.0%	0.0%	15.0%	0.0%
B	0.0%	0.0%	0.0%	0.0%	0.0%	**68.8%**	0.0%	12.5%	18.8%
C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%

Source: MARC Fixed Income Research

Exhibit 24: 1-year cumulative rating transition matrix: 1998 – 2012 (NR Adjusted)

1998-2012	AAA	AA	A	BBB	BB	B	C	Default
AAA	**99.2%**	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AA	2.7%	**91.0%**	5.9%	0.0%	0.0%	0.0%	0.0%	0.5%
A	0.0%	3.2%	**89.6%**	4.0%	0.5%	0.0%	0.0%	2.7%
BBB	0.0%	0.0%	9.5%	**73.8%**	7.1%	2.4%	0.0%	7.1%
BB	0.0%	0.0%	0.0%	0.0%	**76.5%**	23.5%	0.0%	0.0%
B	0.0%	0.0%	0.0%	0.0%	0.0%	**78.6%**	0.0%	21.4%
C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%

Source: MARC Fixed Income Research

Exhibit 25: 1-year rating transition matrix: 2008 – 2012

2008	AAA	AA	A	BBB	BB	B	C	NR	Default
AAA	**100.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AA	0.0%	**95.2%**	0.0%	0.0%	0.0%	0.0%	0.0%	4.8%	0.0%
A	0.0%	8.8%	**80.7%**	1.8%	0.0%	0.0%	0.0%	7.0%	1.8%
BBB	0.0%	0.0%	0.0%	**50.0%**	25.0%	25.0%	0.0%	0.0%	0.0%
BB	0.0%	0.0%	0.0%	0.0%	**100.0%**	0.0%	0.0%	0.0%	0.0%
B	0.0%	0.0%	0.0%	0.0%	0.0%	**100.0%**	0.0%	0.0%	0.0%
C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%

2009	AAA	AA	A	BBB	BB	B	C	NR	Default
AAA	**85.7%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	14.3%	0.0%
AA	0.0%	**82.1%**	0.0%	0.0%	0.0%	0.0%	0.0%	17.9%	0.0%
A	0.0%	0.0%	**70.2%**	4.3%	0.0%	0.0%	0.0%	19.1%	6.4%
BBB	0.0%	0.0%	0.0%	**33.3%**	0.0%	0.0%	0.0%	33.3%	33.3%
BB	0.0%	0.0%	0.0%	0.0%	**75.0%**	25.0%	0.0%	0.0%	0.0%
B	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	50.0%	50.0%
C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%

2010	AAA	AA	A	BBB	BB	B	C	NR	Default
AAA	**100.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AA	8.3%	**70.8%**	12.5%	0.0%	0.0%	0.0%	0.0%	8.3%	0.0%
A	0.0%	2.9%	**70.6%**	0.0%	0.0%	0.0%	0.0%	23.5%	2.9%
BBB	0.0%	0.0%	0.0%	**66.7%**	0.0%	0.0%	0.0%	33.3%	0.0%
BB	0.0%	0.0%	0.0%	0.0%	**33.3%**	33.3%	0.0%	33.3%	0.0%
B	0.0%	0.0%	0.0%	0.0%	0.0%	**66.7%**	0.0%	33.3%	0.0%
C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%

2011	AAA	AA	A	BBB	BB	B	C	NR	Default
AAA	**94.4%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.6%	0.0%
AA	4.3%	**73.9%**	13.0%	0.0%	0.0%	0.0%	0.0%	8.7%	0.0%
A	0.0%	0.0%	**48.3%**	13.8%	3.4%	0.0%	0.0%	31.0%	3.4%
BBB	0.0%	0.0%	0.0%	**100.0%**	0.0%	0.0%	0.0%	0.0%	0.0%
BB	0.0%	0.0%	0.0%	0.0%	**100.0%**	0.0%	0.0%	0.0%	0.0%
B	0.0%	0.0%	0.0%	0.0%	0.0%	**66.7%**	0.0%	0.0%	33.3%
C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%

2012	AAA	AA	A	BBB	BB	B	C	NR	Default
AAA	**95.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	0.0%
AA	0.0%	**85.7%**	9.5%	0.0%	0.0%	0.0%	0.0%	4.8%	0.0%
A	0.0%	0.0%	**55.0%**	5.0%	0.0%	0.0%	0.0%	40.0%	0.0%
BBB	0.0%	0.0%	0.0%	**22.2%**	11.1%	0.0%	0.0%	55.6%	11.1%
BB	0.0%	0.0%	0.0%	0.0%	**33.3%**	33.3%	0.0%	33.3%	0.0%
B	0.0%	0.0%	0.0%	0.0%	0.0%	**100.0%**	0.0%	0.0%	0.0%
C	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	0.0%	0.0%

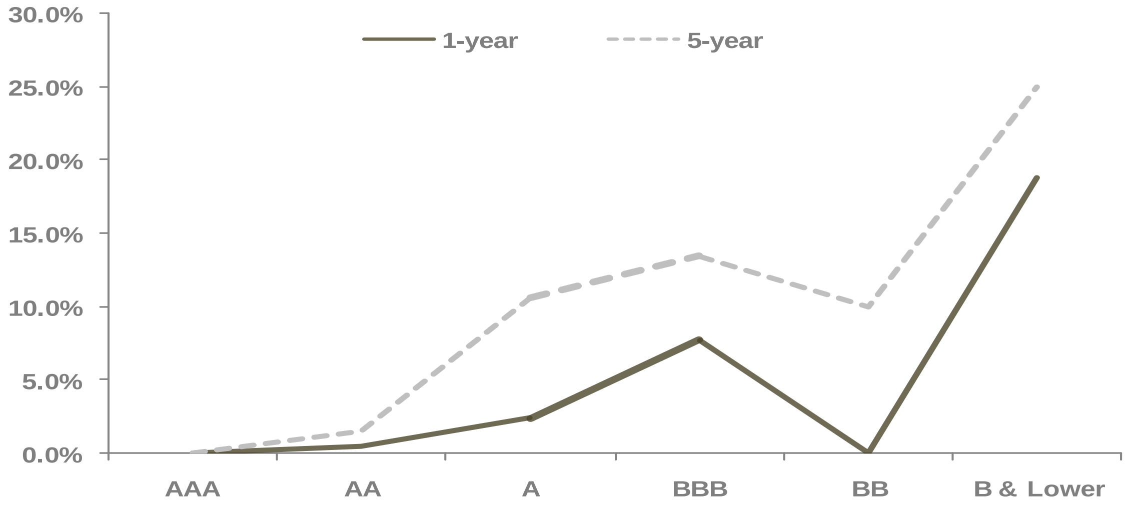
Source: MARC Fixed Income Research

Exhibit 26: Cumulative default rate by rating band

Rating band	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
AAA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AA	0.5%	0.5%	0.5%	1.0%	1.5%	2.0%	2.5%	2.5%
A	2.4%	5.0%	7.6%	9.1%	10.6%	11.0%	11.0%	11.0%
BBB	7.7%	11.5%	11.5%	13.5%	13.5%	17.3%	19.2%	19.2%
BB	0.0%	5.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
B & Lower	18.8%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
High Grade	1.6%	3.2%	4.9%	5.9%	7.0%	7.4%	7.6%	7.6%
High Yield	9.5%	14.9%	16.2%	17.6%	17.6%	20.3%	21.6%	21.6%
All Corporate	2.1%	3.9%	5.4%	6.4%	7.3%	7.9%	8.1%	8.1%

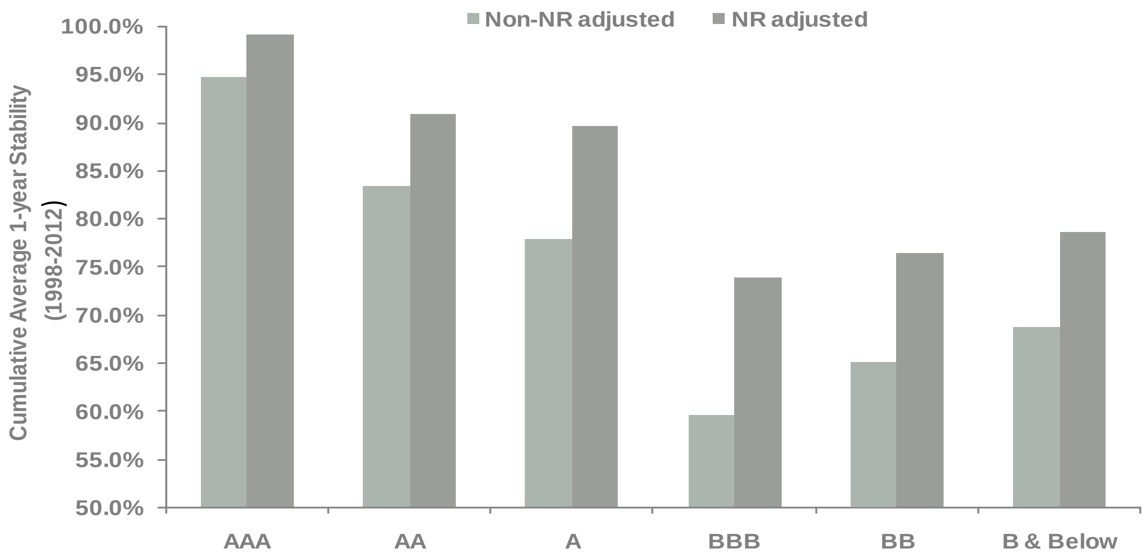
Source: MARC Fixed Income Research

Exhibit 27: Effectiveness of MARC's corporate ratings as default predictor (1998 – 2012)



Source: MARC Fixed Income Research

Exhibit 28: 1-year rating stability by rating band (1998 – 2012)



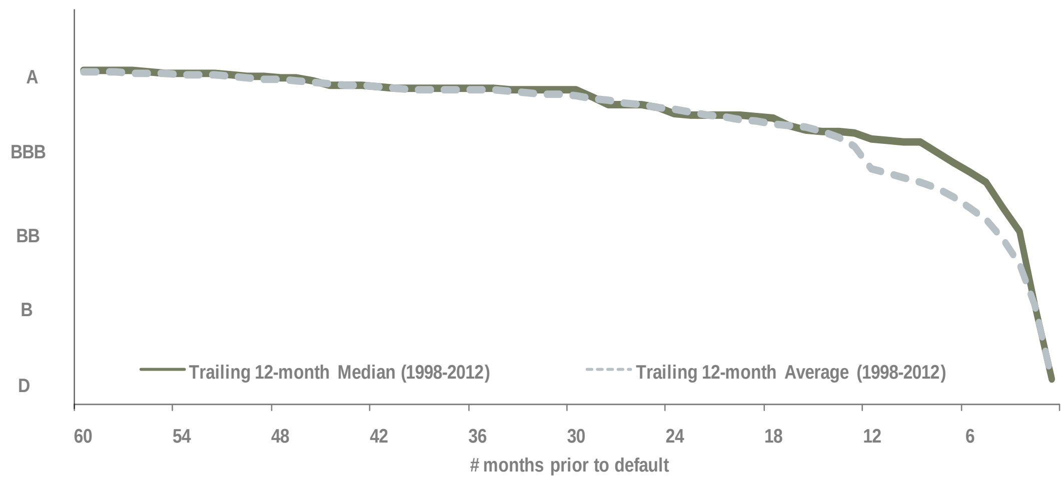
Source: MARC Fixed Income Research

Path to default aligns with rating migration

In line with the outcome of our study of rating migration, highly rated credits tend to exhibit stronger rating stability. Hence, the average time to default for higher rated credits is longer than for high-yield issuers in general. The average time for a default to occur (the time elapsed between the first rating and date of default) for AA-rated issuers from initiation was 6.4 years, while the average time to default among entities that received an initial rating of BBB was 3.8 years. However, the reader should exercise caution in interpreting the figures due to the rather small default pool in our study. For issuers with high-grade ratings prior to default, it took an average of 1.8 years to default, while high-yield issuers took an average of 0.4 years to default.

Exhibit 29: 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	1	77	77
A	15	40	36
BBB	3	45	46
BB	0	n.a	n.a
B	0	n.a.	n.a.
C	0	n.a	n.a
High Grade	**16**	**43**	**38**
High Yield	**3**	**45**	**46**
All Corporate	**19**	**43**	**39**
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	5	8	8
BB	5	1	1
B	3	12	10
C	4	1	1
High Grade	**2**	**22**	**22**
High Yield	**17**	**5**	**5**
All Corporate	**19**	**7**	**6**

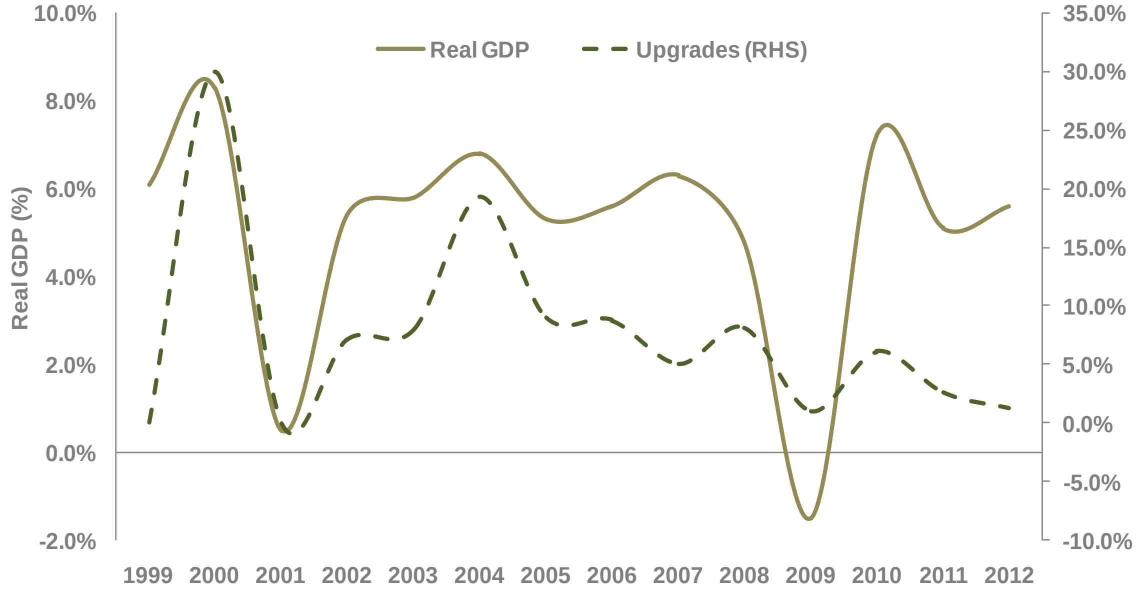


Source: MARC Fixed Income Research

Credit conditions are a reflection of general real economic activity

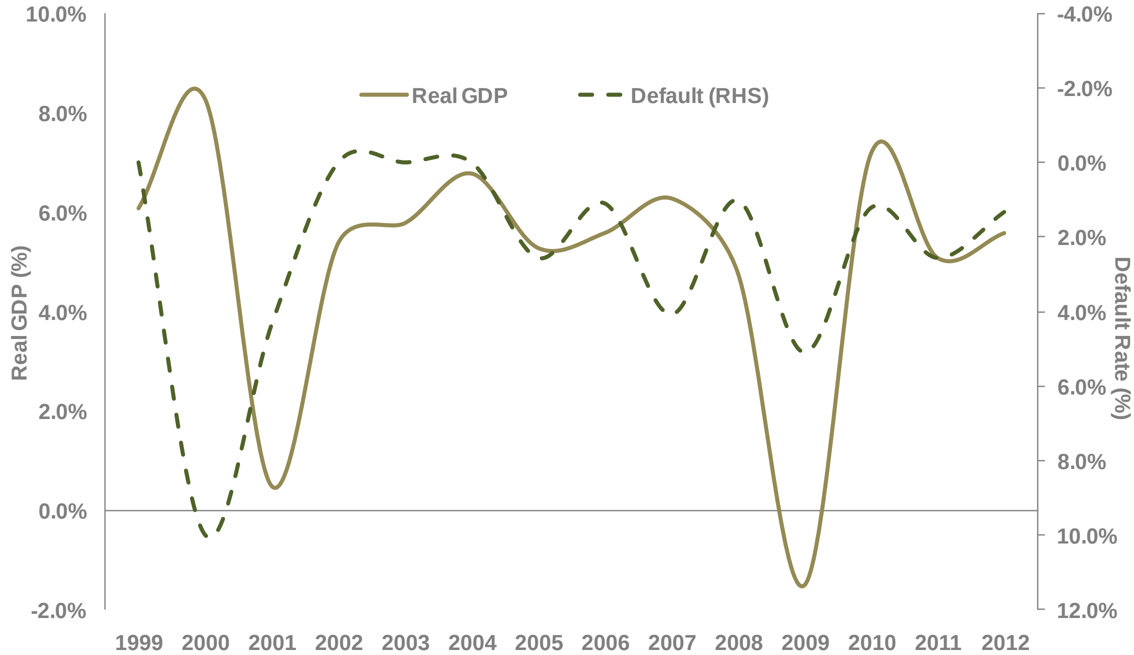
The correlation between the real economy and credit outlook is illustrated by Exhibits 30 and 31. As shown in the following exhibits, a weaker economy performance would generally increase the incidence of default. The relationship is particularly strong when the magnitude of the economic swing is greater. Meanwhile, when the economy returns to trend growth, the default rate would be more random and subject to significant individual idiosyncratic patterns. In a similar vein, a strong economic showing also produces more upgrades than downgrades. The correlation coefficient between real economic growth and rating upgrades is more than 50%. Although not shown in the exhibits, the correlation coefficient between real economic growth and rating downgrades is even higher at close to 75%.

Exhibit 30: Corporate rating upgrades (%) vs. real GDP growth (%)



Source: MARC Fixed Income Research

Exhibit 31: MARC credit default rates (%) vs. real GDP growth (%)



Source: MARC Fixed Income Research

Appendix I: Data and Methodologies

This long-term corporate default and rating transition study uses MARC's database of local currency issuer credit ratings which reflect MARC's independent opinion of an issuer's ability to meet its debt obligations. The likelihood of default is indicated by the rating migration assigned to the affected issuers, the rating outlook attached as well as the watchlist assigned. 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. Issuers with multiple debt lines were consolidated to only one rating; moreover, senior unsecured long-term ratings or, in the absence of this, the highest-rated security lines were used. This study excludes short-term ratings and all structured finance issuers. Meanwhile, issuers which are domiciled in foreign countries are also eliminated in our study due to the constraints of using a local rating scale. In addition, issuers with bank or corporate guarantees are also excluded as this study aims to analyse the standalone corporate default risk.

This study analysed the rating histories of 228 corporate issuers that were rated by MARC between 1996 and 2012. In the previous default studies, MARC conducted its annual default study based on the number of issuers in line with international practice. Due to sample size constraints, each study reported all statistics beginning December 1997, hence ensuring consistency in the statistical reporting. 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 high-grade and high-yield analysis as the small number of observations would be statistically inconclusive.

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, their practice is to append modifiers (+/-) or 1, 2, and 3 to each generic rating.

Default Definition

(Specifically prescribed for MARC's Default and Rating Transition Study: 1996-2012)

- Issuers will be rated 'D' upon default. Distressed obligations typically are 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 calculation used in MARC's Corporate Default Study is given by the following formula:

$$d_t = x_t / (n_{t-1} - w_t)$$

  Where x_t is the number of defaulted issuers in year t, w_t is the number of rating withdrawals and n_{t-1} is the number of outstanding ratings at the beginning of the year and adjusted for previous defaults.

- The denominator reflects issuers whose ratings were withdrawn and therefore not at risk of default over the measurement period. Hence, there are three possible scenarios that need to be modeled 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.

Appendix II: Details on 2012 rating migrations

Issuer	Main Sector	Date Announced	Action	Outlook	Last Rating	New Rating
Kinsteel Bhd	Industrial Products	30-Apr-12	DOWNGRADED	NEG	A	A-
KNM Group Bhd	Industrial Products	21-Mar-12	DOWNGRADED	NEG	AA-	A+
Maxtral Industry Bhd	Industrial Products	20-Mar-12	DOWNGRADED	NEG	BBB-	BB
Maxtral Industry Bhd	Industrial Products	25-Apr-12	DEFAULT		BB	D
Olympia Industries Bhd	Trading/Services	27-Jan-12	DOWNGRADED	STA	BB-	B+
Perwaja Steel Sdn Bhd	Industrial Products	3-Feb-12	DOWNGRADED	NEG	A	A-
Sistem Penyuraian Trafik KL Barat Sdn Bhd	Infrastructure & Utilities	10-Feb-12	DOWNGRADED	STA	AA-	A+
Tanjung Langsat Port Sdn Bhd	Infrastructure & Utilities	14-Nov-12	DOWNGRADED	NEG	A-	BBB+
Trinity Corporation Berhad	Property	3-Dec-12	DOWNGRADED	NEG	B+	B-

The rating migration of MARC's unpublished ratings are excluded
Source: MARC Fixed Income Research

Appendix III: 1-year rating migrations at modifier level

2011	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	C	NR	Default
AAA	**94.4%**	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%	0.0%	5.6%	0.0%
AA+	20.0%	**60.0%**	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%	20.0%	0.0%
AA	0.0%	0.0%	**50.0%**	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%	50.0%	0.0%
AA-	0.0%	0.0%	0.0%	**81.3%**	12.5%	0.0%	6.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
A+	0.0%	0.0%	0.0%	0.0%	**55.6%**	0.0%	0.0%	0.0%	22.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	22.2%	0.0%
A	0.0%	0.0%	0.0%	0.0%	0.0%	**43.8%**	0.0%	0.0%	0.0%	12.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	37.5%	6.3%
A-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**50.0%**	0.0%	0.0%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%
BBB+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**100.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**100.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBB-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	**50.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	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%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	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%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	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%	0.0%	**100.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	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%	**100.0%**	0.0%	0.0%	0.0%	0.0%	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%	**50.0%**	0.0%	0.0%	0.0%	50.0%
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%	0.0%	**0.0%**	0.0%	0.0%	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%	**0.0%**	0.0%	0.0%

2012	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	C	NR	Default
AAA	**95.0%**	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%	0.0%	5.0%	0.0%
AA+	0.0%	**100.0%**	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%	0.0%	0.0%
AA	0.0%	0.0%	**100.0%**	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%	0.0%
AA-	0.0%	0.0%	0.0%	**78.6%**	14.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.1%	0.0%
A+	0.0%	0.0%	0.0%	0.0%	**25.0%**	12.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	62.5%	0.0%
A	0.0%	0.0%	0.0%	0.0%	0.0%	**42.9%**	28.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	28.6%	0.0%
A-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**60.0%**	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	0.0%
BBB+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**0.0%**	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	**0.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	80.0%	0.0%
BBB-	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%	0.0%	0.0%	0.0%	0.0%	33.3%	33.3%
BB+	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%	0.0%	100.0%	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%	**100.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	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%	0.0%	**0.0%**	100.0%	0.0%	0.0%	0.0%	0.0%	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%**	0.0%	100.0%	0.0%	0.0%	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%	**100.0%**	0.0%	0.0%	0.0%	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%	0.0%	**0.0%**	0.0%	0.0%	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%	**0.0%**	0.0%	0.0%

1998-2012	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	C	NR	Default
AAA	**94.9%**	0.0%	0.7%	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%	4.4%	0.0%
AA+	10.2%	**83.7%**	0.0%	2.0%	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%	4.1%	0.0%
AA	0.0%	6.8%	**70.5%**	4.5%	2.3%	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.6%	0.0%
AA-	0.0%	0.0%	5.4%	**77.7%**	6.3%	0.0%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.0%	0.9%
A+	0.0%	0.0%	0.6%	7.1%	**67.3%**	5.8%	2.6%	0.6%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	13.5%	1.3%
A	0.0%	0.0%	0.0%	0.5%	6.9%	**72.2%**	4.6%	0.9%	0.0%	1.9%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	10.2%	2.3%
A-	0.0%	0.0%	0.0%	0.0%	0.0%	8.8%	**59.3%**	5.5%	0.0%	2.2%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	18.7%	4.4%
BBB+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	**50.0%**	10.0%	5.0%	0.0%	0.0%	0.0%	0.0%	5.0%	0.0%	0.0%	10.0%	0.0%
BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.3%	**33.3%**	16.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.3%	8.3%
BBB-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	5.0%	**45.0%**	10.0%	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	15.0%	15.0%
BB+	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	**60.0%**	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	40.0%	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%	**50.0%**	25.0%	25.0%	0.0%	0.0%	0.0%	0.0%	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%	0.0%	**63.6%**	9.1%	9.1%	9.1%	0.0%	9.1%	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%	**50.0%**	25.0%	25.0%	0.0%	0.0%	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%	33.3%	33.3%
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%	16.7%	**66.7%**	0.0%	0.0%	16.7%
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%	**0.0%**	0.0%	0.0%

Source: MARC Fixed Income Research

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MALAYSIAN RATING CORPORATION BERHAD (Company No. : 364803 V)
5th Floor, Bangunan Malaysian RE, No 17 Lorong Dungun,
Damansara Heights, 50490 KUALA LUMPUR.
www.marc.com.my

Tel: 603 2082 2200
Fax: 603 2094 9397