

Transition & Default Study

CY11-CY20

'You can't control what you can't measure'

Saturday, January 30, 2021



The Pakistan Credit Rating Agency Limited

Table of Contents

Section I: Concept of Transition & Default Study

Section II: PACRA Transition & Default Trends

Section III: Peer Analysis

Annexures



SECTION I: CONCEPT OF TRANSITION & DEFAULT STUDY



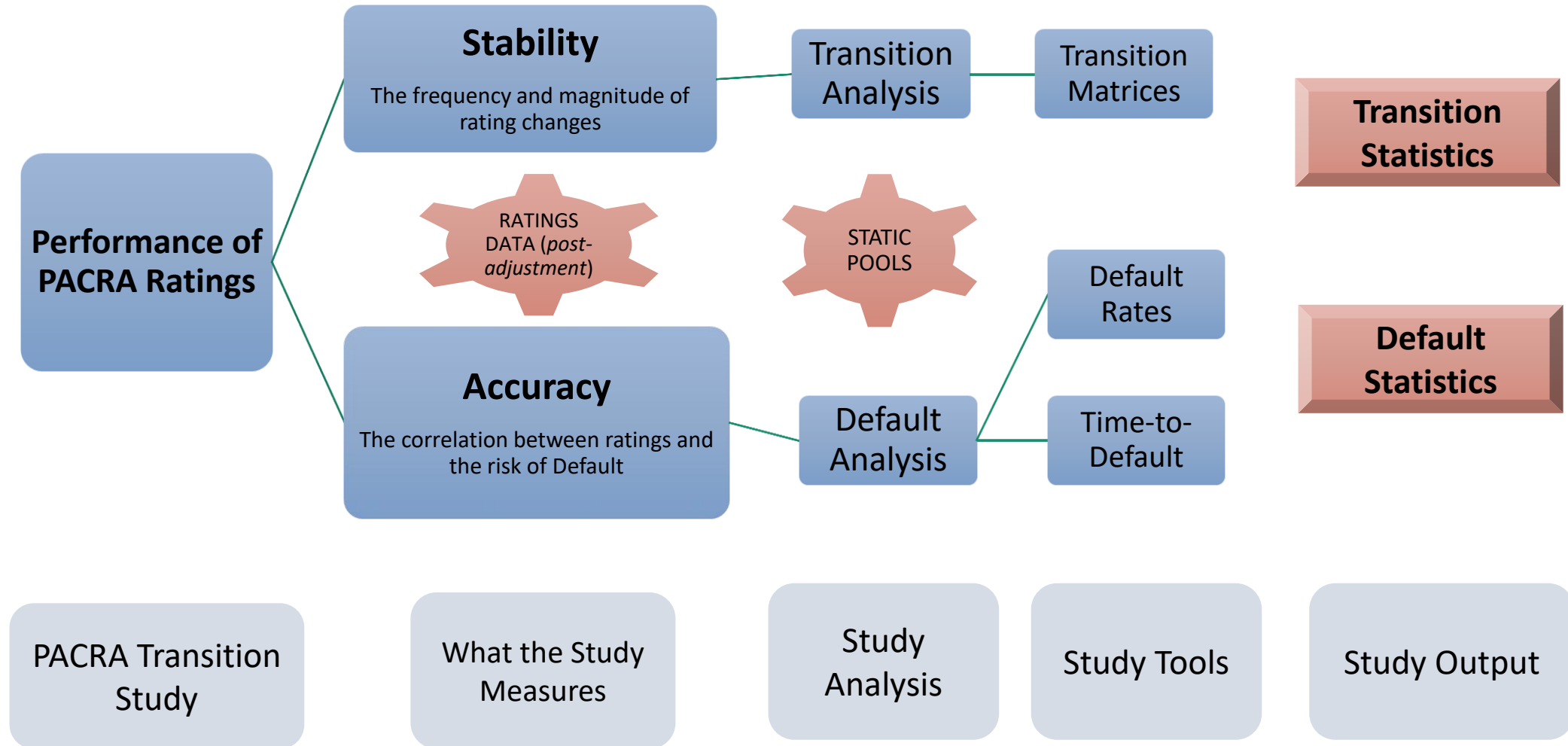
What is a Transition & Default Study?

A Set of Standardized Tools & Analyses for a Credit Rating Agency's (CRA) ratings' performance appraisal

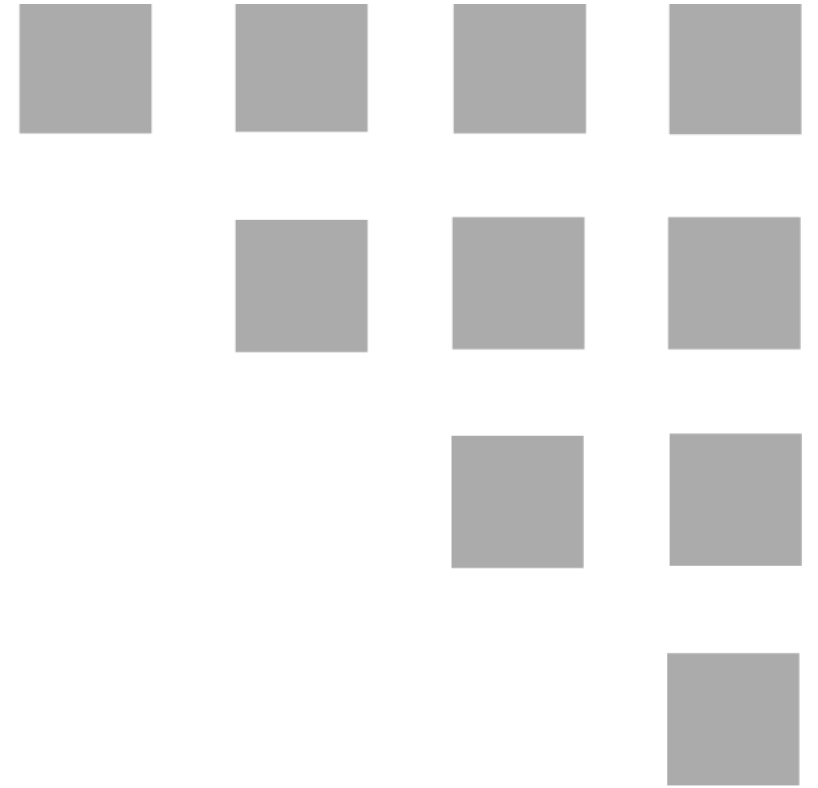
Need for a Transition & Default Study

- Self Assessment of CRA
- Peer Analysis with other CRAs
- Regulatory Requirement

Schematic – A Typical Transition & Default Study



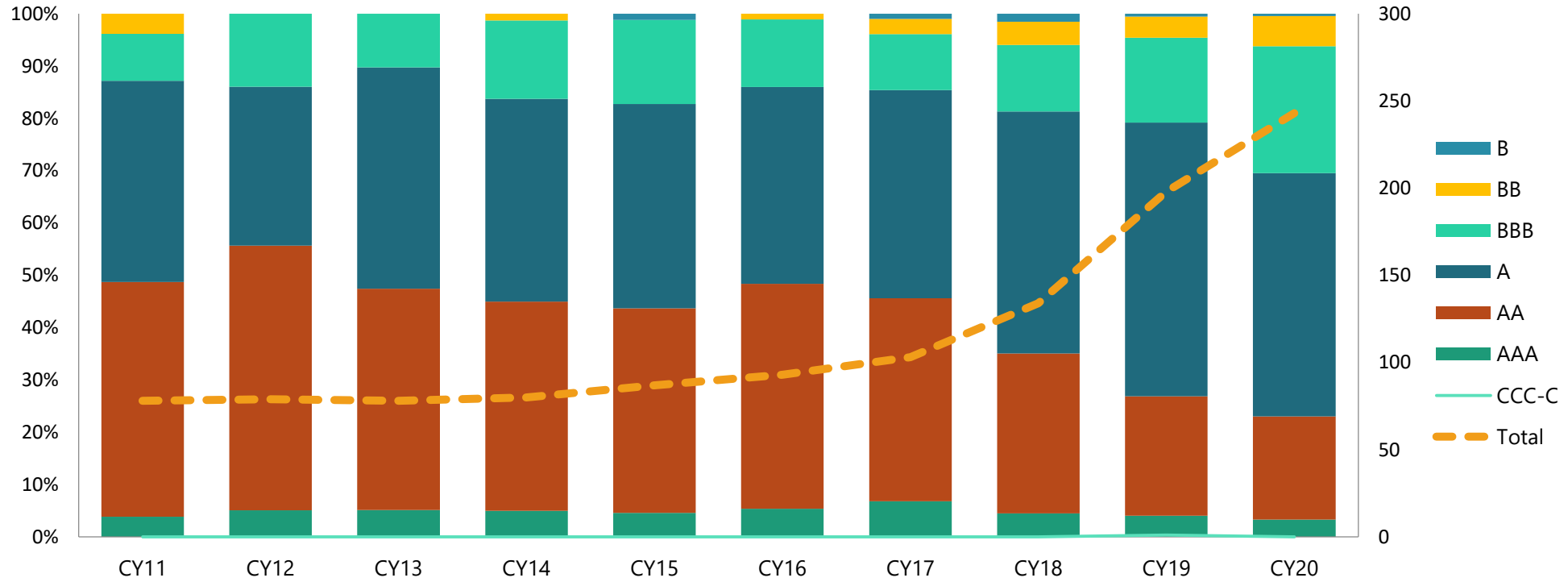
SECTION II: PACRA TRANSITION & DEFAULT TRENDS



Rating Distribution



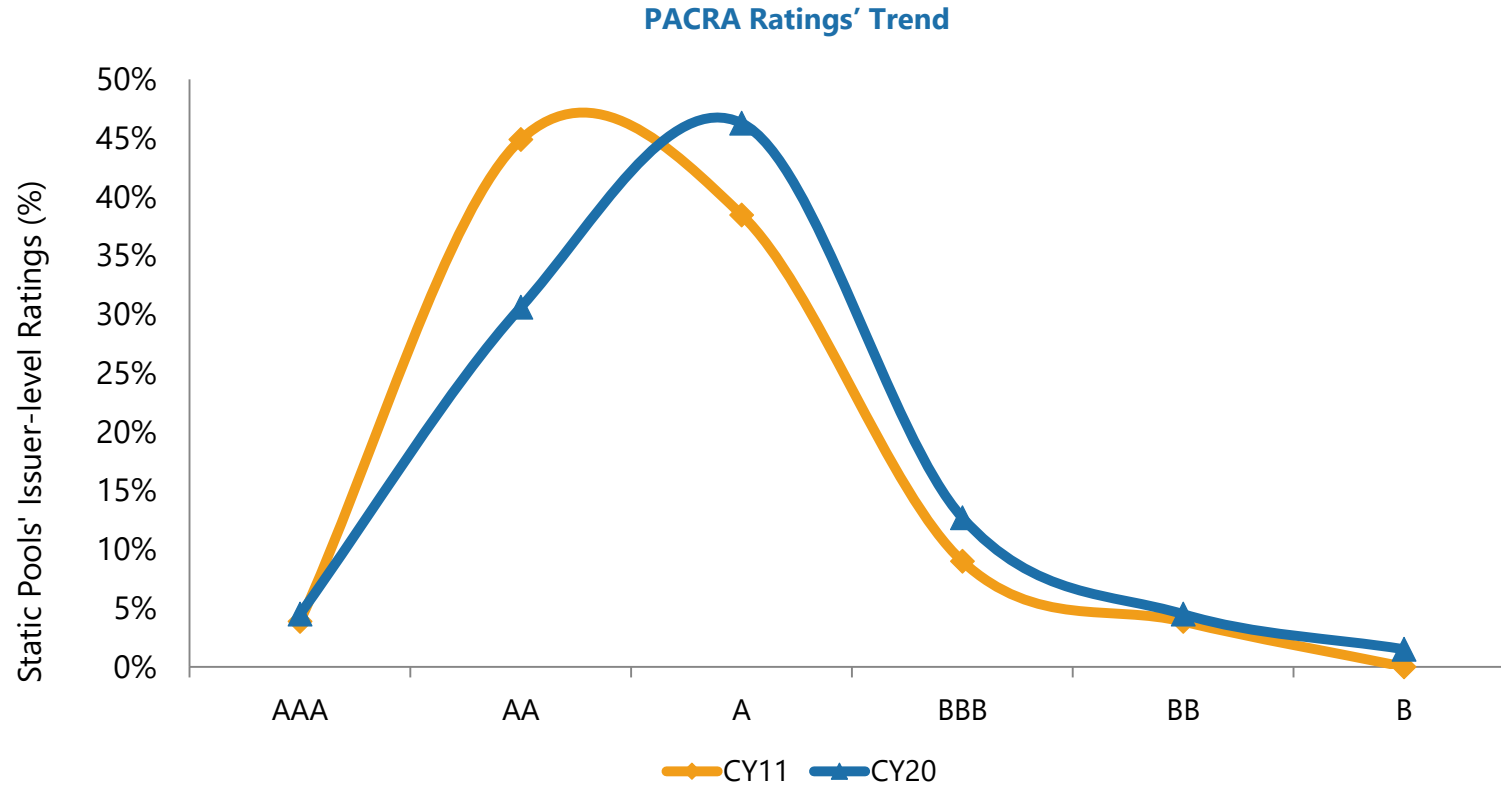
PACRA Static Pool Composition (CY11-CY20)



Total Opinions	CY11	CY12	CY13	CY14	CY15	CY16	CY17	CY18	CY19	CY20
	78	79	78	80	87	93	103	134	198	243

- PACRA's rating universe was quite limited in size until CY17 which posed limitations to interpretation of study results.
- Significant growth in rating opinions over the past 3 years has made the results of the study statistically more meaningful.

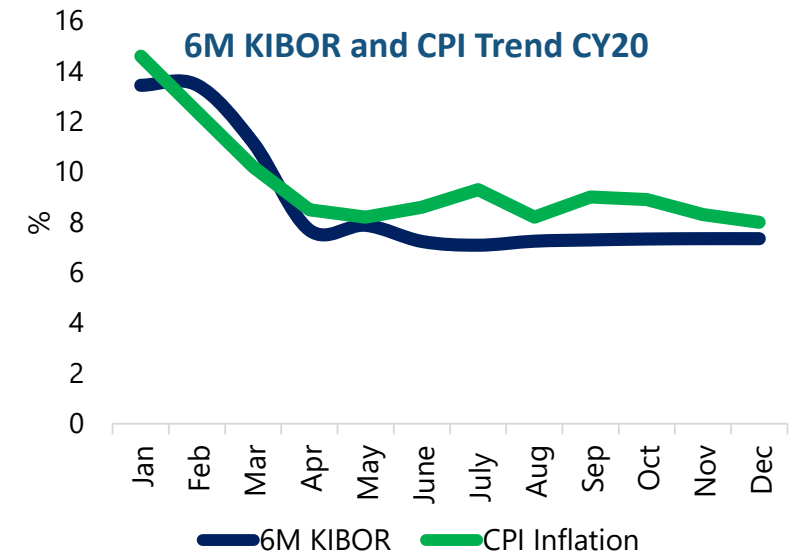
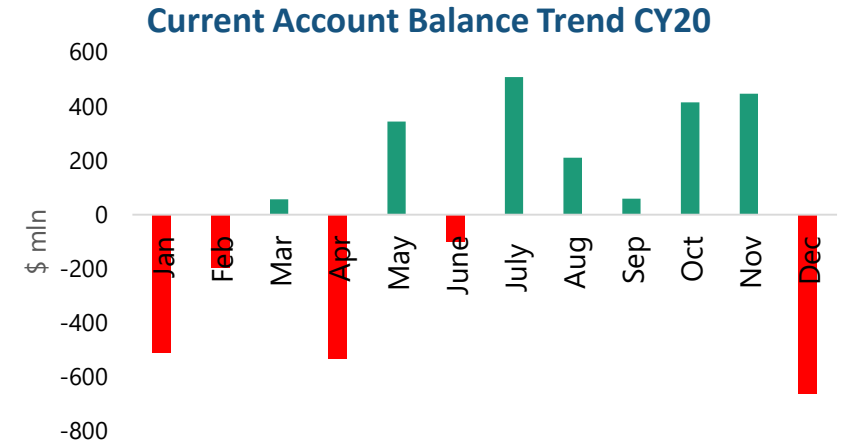
Rating Distribution



- The mean rating for PACRA has shifted from “AA” to “A” category between CY11 and CY20.
- Meanwhile, the median rating category over the same period has largely remained unchanged at “A”.

Overview of Economy

- While not entirely insulated by the onset of Covid-19, Pakistan fared relatively better when compared to world economies, according to various international bodies including WHO.
- Surge in remittances and decline in oil prices led to consecutive external accounts surplus in last 5 months of CY20.
- CPI Inflation showed a declining trend over the year (CY20 average: ~8.6%), starting from ~14% in Jan20.
- Record monetary easing along with various relief measures announced by SBP were successful in preventing widespread panic among investors on account of Covid-19.
- Pakistan's market continues to reflect positive sentiments, fueled by several factors. These include i) improving economic indicators, ii) successful "flattening of the Covid-19 curve", iii) expected restoration of the IMF programme, iv) ongoing government efforts to resolve the issue of circular debt, and v) hopes of a successful new vaccine in the near future.

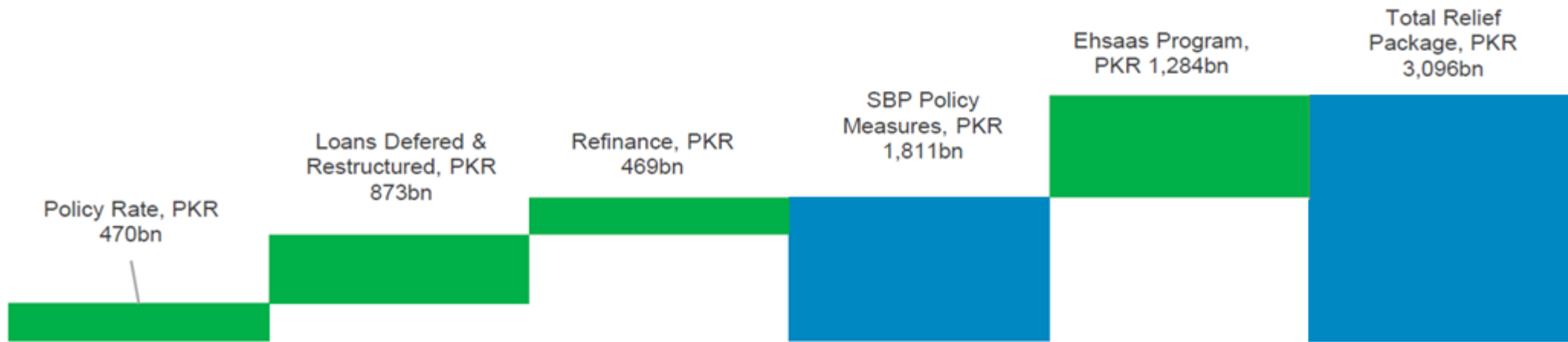


Salient Relief Policy Measures



- Record monetary easing as policy rate was slashed by 525 bps within a span of two months.
- Reduction in capital conservation buffer (CCB) from 2.5% to 1.5% to enable additional lending by banks.
- Enhancement of regulatory retail portfolio limit for SMEs.

- Deferment of repayment of principal on loans for households and businesses by one year.
- Relaxation in regulatory criteria for restructuring/rescheduling of loans.
- Relaxation in Debt Burden Ratio (DBR) for consumer loans from 50% to 60%.

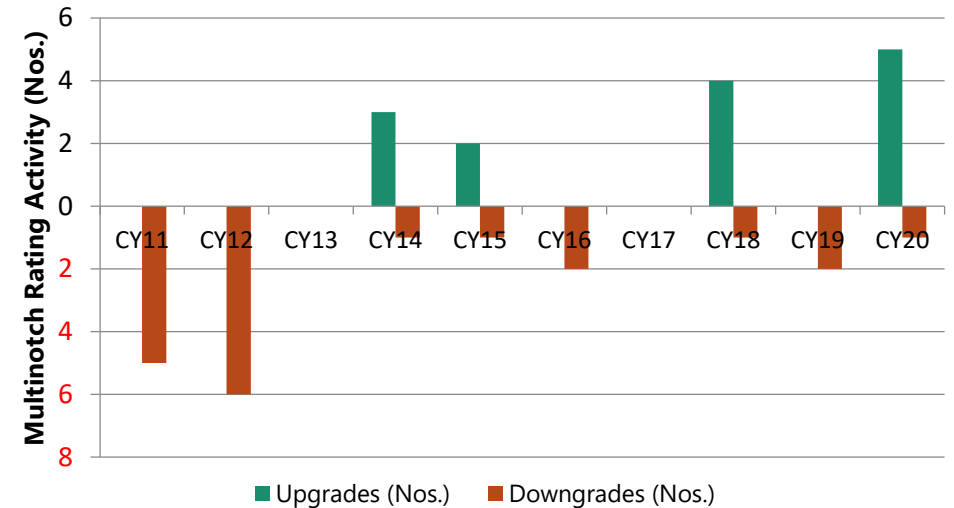


Impact on PACRA rating universe

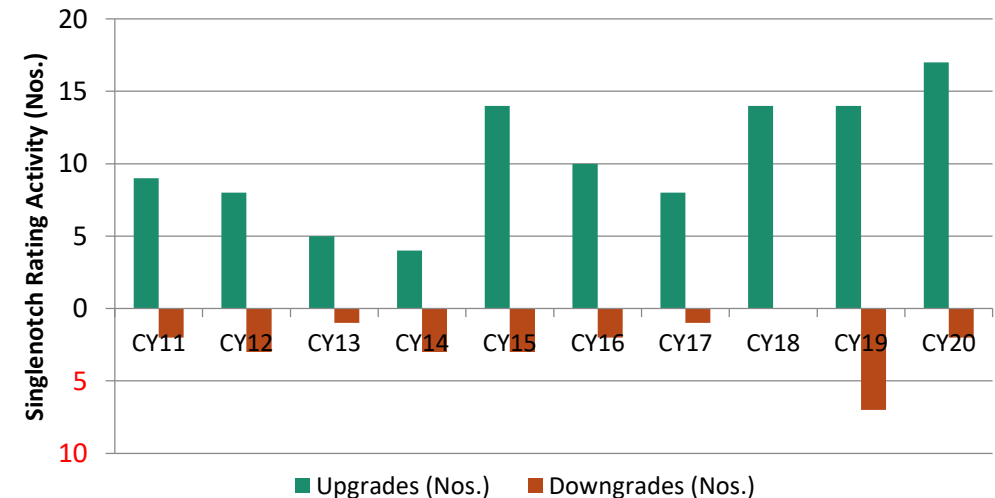


- PACRA's rating universe displayed high resilience in CY20, compared to other regional and international CRAs, reflecting the quality of PACRA's forward-looking opinions.
- Timely relief measures introduced by SBP also contributed to this performance.
- PACRA witnessed an increase in its upgrade rate, which clocked in at ~9.5% (CY19: ~7.4%).
- Meanwhile, downgrade rate reduced year-on-year to ~1.3% (CY19: ~4.8%).
- In CY20, multi-notch upgrades outpaced downgrades by 5 to 1 as compared with a benign 0 to 2 in CY19.
- Single-notch upgrades clocked in an impressive 17 versus 2 such downgrades in CY20.

Annual Multi-notch Rating Activity

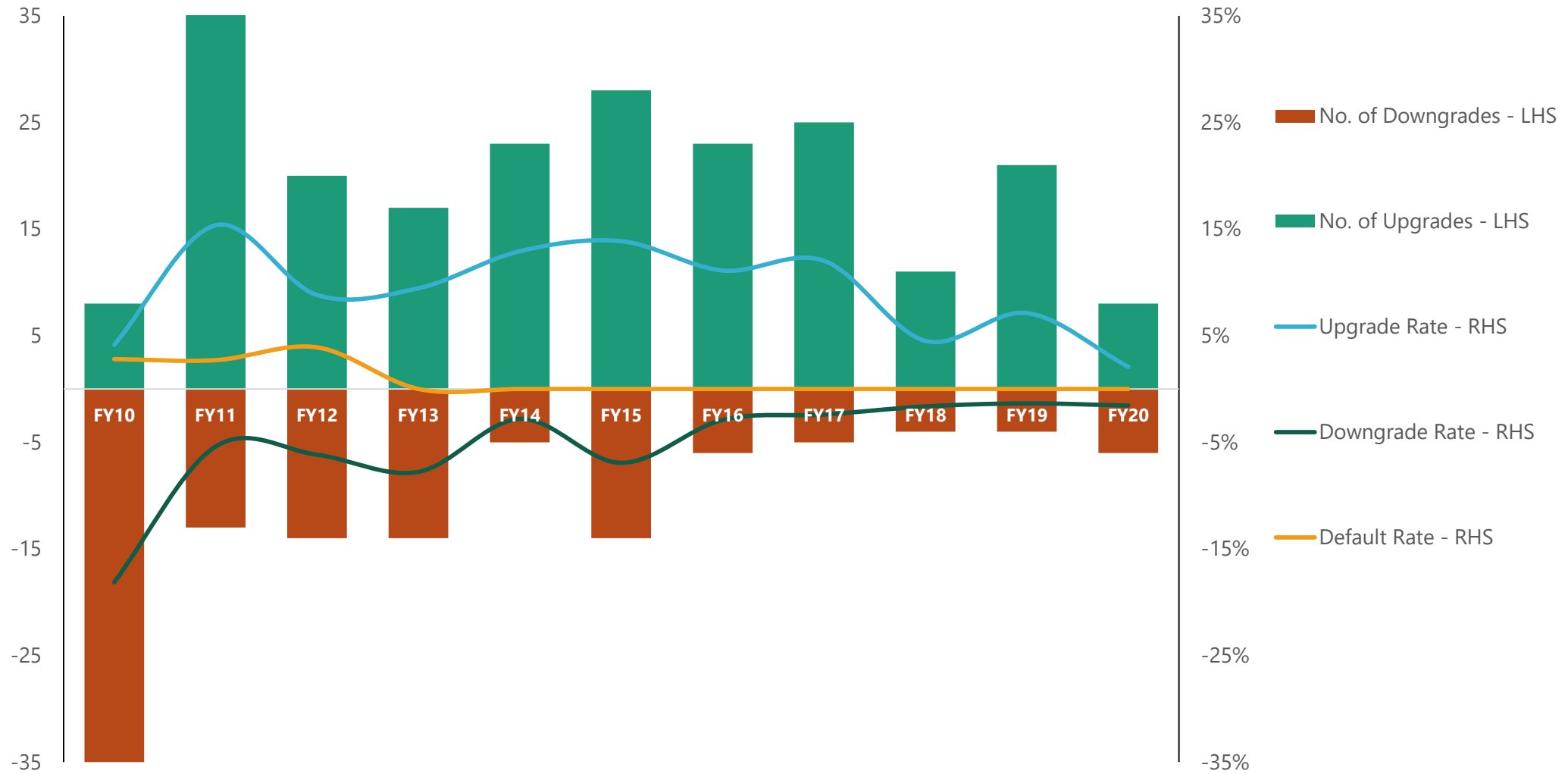


Annual Single-notch Rating Activity



- Upgrades in CY20 were witnessed predominantly in three sectors: pharmaceuticals, rice and power.
- Pharmaceutical sector benefited from increased demand stimulated by COVID-19, as the pandemic shifted focus towards self well-being, healthcare and medical engineering segments. This reflected in improved financial profiles of pharmaceutical industry players, translating into 2 rating upgrades.
- The status of rice as a global staple food product minimized its susceptibility to demand challenges posed by Covid-19. The export-oriented sector also benefited from currency devaluation and the relief provided by SBP in Export Refinance facility, leading to 4 rating upgrades in the rice sector.
- Ratings of 4 power sector players were upgraded, mainly on the basis of achieving CoD or complete repayment of long-term debt. Furthermore, ongoing efforts by the government to resolve the issue of circular debt and payment of related was also viewed positively.

Annual Rating Activity Trend



➤ The default rate has remained unchanged at 0% after FY12.

CY20 Transition Matrix



Transition (Years) : 1		End of Year (CY20)																		
		Withdrawal Adjusted Static Pool	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC-C	D
Beginning of Year (CY20)	AAA	8.00	100.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
	AA+	10.00	-	100.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
	AA	20.00	-	-	100.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
	AA-	18.00	-	-	5.6%	94.4%	-	-	-	-	-	-	-	-	-	-	-	-	-	0
	A+	18.00	-	-	5.6%	88.9%	5.6%	-	-	-	-	-	-	-	-	-	-	-	-	1.00
	A	30.00	-	-	6.7%	3.3%	90.0%	-	-	-	-	-	-	-	-	-	-	-	-	2.00
	A-	61.00	-	-	-	-	4.9%	91.8%	1.6%	1.6%	-	-	-	-	-	-	-	-	-	1.00
	BBB+	19.00	-	-	-	-	-	10.5%	89.5%	-	-	-	-	-	-	-	-	-	-	1.00
	BBB	23.00	-	-	-	-	-	-	8.7%	91.3%	-	-	-	-	-	-	-	-	-	2.00
	BBB-	11.00	-	-	-	-	-	-	-	9.1%	90.9%	-	-	-	-	-	-	-	-	3.00
	BB+	12.00	-	-	-	-	-	-	-	25.0%	41.7%	33.3%	-	-	-	-	-	-	-	1.00
	BB	1.00	-	-	-	-	-	-	-	-	-	100.0%	-	-	-	-	-	-	-	0
	BB-	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B+	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	B	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0%	-	-	-
	B-	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CCC-C	0.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

- Upgrades exceeded downgrades in CY20 where higher proportion of rating upgrades were observed in rating categories (BBB-A).
- Upgrades were dominated by corporates with one financial institution. Corporate upgrades were diversified across sectors such as Power(4), Rice (4), Construction (2), Pharmaceutical (2), Pesticides (2), Engineering (1), Oil & Gas (1), Poultry Feed (1), Steel (1), Sugar (1), Textile (1) and Tyres (1).
- There were one multi-notch and two single-notch downgrades. Sectors | Hotel & Retail, Poultry and Relief

One-year Average Transition Matrix



Transition Period (1-Year)	Average Annual Transition (CY11-CY20)																		Withdrawal-	
	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC-C	D	Adjusted Static Pool	Data Counts
AAA	98.1%	1.9%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.20	52.00
AA+	3.4%	95.5%	1.1%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.90	89.00
AA	-	4.5%	94.2%	0.6%	-	0.6%	-	-	-	-	-	-	-	-	-	-	-	-	15.40	154.00
AA-	-	-	10.4%	87.4%	1.5%	-	0.7%	-	-	-	-	-	-	-	-	-	-	-	13.50	135.00
A+	-	-	-	11.2%	85.6%	3.2%	-	-	-	-	-	-	-	-	-	-	-	-	12.50	125.00
A	-	-	-	3.4%	10.8%	82.4%	2.0%	-	0.7%	-	-	-	-	-	-	-	-	0.7%	14.80	148.00
A-	-	-	-	-	0.5%	6.2%	88.0%	1.9%	2.4%	1.0%	-	-	-	-	-	-	-	-	20.90	209.00
BBB+	-	-	-	-	-	-	15.9%	78.3%	5.8%	-	-	-	-	-	-	-	-	-	6.90	0.90
BBB	-	-	-	-	-	1.7%	1.7%	10.3%	77.6%	1.7%	-	1.7%	-	-	1.7%	-	-	3.4%	5.80	0.80
BBB-	-	-	-	-	-	-	2.9%	-	20.0%	68.6%	2.9%	2.9%	-	-	-	-	-	2.9%	3.50	-
BB+	-	-	-	-	-	-	-	-	13.6%	36.4%	50.0%	-	-	-	-	-	-	-	2.20	-
BB	-	-	-	-	-	-	12.5%	-	12.5%	-	37.5%	12.5%	-	-	12.5%	-	-	12.5%	0.80	-
BB-	-	-	-	-	-	-	-	-	-	-	-	100.0%	-	-	-	-	-	-	0.10	-
B+	-	-	-	-	-	-	-	-	-	-	-	-	-	50.0%	50.0%	-	-	-	0.20	-
B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66.7%	-	-	-	0.00	-
B-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-
CCC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-

- It can be observed PACRA's higher rating categories (AA-AAA) have exhibited high level of stability within one-year period.
- Stability rates of PACRA's higher rating categories have generally been higher than those for the lower rating categories.

Three-year Average Transition Matrix



Transition Period (3-Years)	Average Three-Year Transition (CY11-CY20)																	Withdrawal-Adjusted Static Pool	Data Counts	
	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC-C			D
AAA	91.9%	8.1%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.63	46.25
AA+	10.9%	84.4%	4.7%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.00	80.00
AA	-	15.8%	77.2%	3.5%	2.6%	0.9%	-	-	-	-	-	-	-	-	-	-	-	-	14.25	142.50
AA-	-	2.0%	22.4%	65.3%	8.2%	1.0%	1.0%	-	-	-	-	-	-	-	-	-	-	-	12.25	122.50
A+	-	-	2.6%	23.4%	70.1%	3.9%	-	-	-	-	-	-	-	-	-	-	-	-	9.63	96.25
A	-	-	2.4%	5.9%	24.7%	62.4%	3.5%	-	-	1.2%	-	-	-	-	-	-	-	-	10.63	106.25
A-	-	-	0.9%	4.5%	1.8%	10.8%	71.2%	4.5%	4.5%	1.8%	-	-	-	-	-	-	-	-	13.88	138.75
BBB+	-	-	-	-	-	8.1%	27.0%	62.2%	2.7%	-	-	-	-	-	-	-	-	-	4.63	0.63
BBB	-	-	-	-	3.8%	-	19.2%	23.1%	38.5%	-	-	7.7%	-	-	7.7%	-	-	-	3.25	0.25
BBB-	-	-	-	-	-	-	21.4%	7.1%	21.4%	35.7%	7.1%	-	-	-	7.1%	-	-	-	1.75	-
BB+	-	-	-	-	-	-	-	-	28.6%	42.9%	28.6%	-	-	-	-	-	-	-	0.88	-
BB	-	-	-	-	16.7%	-	33.3%	-	16.7%	-	-	16.7%	-	-	-	-	16.7%	-	0.75	-
BB-	-	-	-	-	-	-	-	-	100.0%	-	-	-	-	-	-	-	-	-	0.13	-
B+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0%	-	-	-	0.13	-
B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-
B-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-
CCC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-

➤ The three-year average rating stability, similar to the trend observed for the one-year average rating stability manifests that higher rating categories shows greater stability as compared to the lower rating categories.

Five-year Average Transition Matrix



Transition Period (5-Years)	Average Five-Year Transition (CY11-CY20)																	Withdrawal-Adjusted Static Pool	Data Counts	
	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC-C			D
AAA	87.5%	12.5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.00	40.00
AA+	15.9%	75.0%	9.1%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.33	73.33
AA	-	21.3%	68.8%	7.5%	2.5%	-	-	-	-	-	-	-	-	-	-	-	-	-	13.33	133.33
AA-	-	3.1%	29.7%	51.6%	15.6%	-	-	-	-	-	-	-	-	-	-	-	-	-	10.67	106.67
A+	-	-	6.7%	42.2%	51.1%	-	-	-	-	-	-	-	-	-	-	-	-	-	7.50	75.00
A	-	2.3%	4.5%	9.1%	34.1%	45.5%	-	-	4.5%	-	-	-	-	-	-	-	-	-	7.33	73.33
A-	-	-	6.0%	6.0%	2.0%	10.0%	64.0%	10.0%	-	2.0%	-	-	-	-	-	-	-	-	8.33	83.33
BBB+	-	-	-	-	-	14.3%	28.6%	57.1%	-	-	-	-	-	-	-	-	-	-	3.50	0.33
BBB	-	-	-	-	7.7%	-	46.2%	23.1%	7.7%	-	-	7.7%	-	-	-	-	7.7%	-	2.17	0.17
BBB-	-	-	-	-	-	-	50.0%	-	-	-	-	50.0%	-	-	-	-	-	-	0.33	-
BB+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-
BB	-	-	-	-	50.0%	50.0%	-	-	-	-	-	-	-	-	-	-	-	-	0.33	-
BB-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-
B+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-
B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-
B-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-
CCC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-

➤ Due to an increase in the proportion of upgrades, rating category (A) witnessed lower stability in five year average rating transitions.

Ten-year Transition Matrix

Transition Period (10-Years)	Average Ten-Year Transition (CY11-CY20)																		Withdrawal-Adjusted Static Pool	Data Counts
	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC-C	D		
AAA	66.7%	33.3%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.00	30.00
AA+	33.3%	66.7%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.00	60.00
AA	7.7%	30.8%	53.8%	7.7%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.00	130.00
AA-	-	-	44.4%	33.3%	22.2%	-	-	-	-	-	-	-	-	-	-	-	-	-	9.00	90.00
A+	-	-	40.0%	20.0%	40.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	5.00	50.00
A	-	-	-	33.3%	66.7%	-	-	-	-	-	-	-	-	-	-	-	-	-	6.00	60.00
A-	-	-	-	-	-	28.6%	57.1%	14.3%	-	-	-	-	-	-	-	-	-	-	7.00	70.00
BBB+	-	-	-	-	-	-	50.0%	50.0%	-	-	-	-	-	-	-	-	-	-	4.00	0.00
BBB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	0.00
BBB-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	0.00
BB+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	0.00
BB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	0.00
BB-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-
B+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-
B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-
B-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-
CCC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-

➤ Ten year average rating transition exhibits an overall trend of migration to higher rating categories.

One-year Average Transition Matrix - Corporates



Transition Period (1-Year)	Average Annual Transition (CY11-CY20)																	Withdrawal-Adjusted Static Pool	Data Counts	
	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC-C			D
AAA	94.7%	5.3%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.90	19.00
AA+	-	96.2%	3.8%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.60	26.00
AA	-	2.1%	95.8%	1.0%	-	1.0%	-	-	-	-	-	-	-	-	-	-	-	-	9.60	96.00
AA-	-	-	11.5%	85.1%	2.3%	-	1.1%	-	-	-	-	-	-	-	-	-	-	-	8.70	87.00
A+	-	-	-	12.6%	83.5%	3.9%	-	-	-	-	-	-	-	-	-	-	-	-	10.30	103.00
A	-	-	-	4.9%	11.8%	79.4%	2.0%	-	1.0%	-	-	-	-	-	-	-	-	1.0%	10.20	102.00
A-	-	-	-	-	0.6%	6.1%	90.3%	0.6%	1.8%	0.6%	-	-	-	-	-	-	-	-	16.50	165.00
BBB+	-	-	-	-	-	-	12.2%	85.4%	2.4%	-	-	-	-	-	-	-	-	-	4.10	41.00
BBB	-	-	-	-	-	2.4%	2.4%	7.3%	85.4%	-	-	-	-	-	-	-	-	2.4%	4.10	41.00
BBB-	-	-	-	-	-	-	-	-	19.2%	73.1%	3.8%	-	-	-	-	-	-	3.8%	2.60	-
BB+	-	-	-	-	-	-	-	-	14.3%	38.1%	47.6%	-	-	-	-	-	-	-	2.10	-
BB	-	-	-	-	-	-	-	-	20.0%	-	60.0%	-	-	-	-	-	-	20.0%	0.50	-
BB-	-	-	-	-	-	-	-	-	-	-	-	100.0%	-	-	-	-	-	-	0.10	-
B+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-
B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-
B-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-
CCC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-

One-year Average Transition Matrix – Financial Institution



		Average Annual Transition (CY11-CY20)																	Withdrawal-		
		AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-	BB+	BB	BB-	B+	B	B-	CCC-C	D	Adjusted Static Pool	Data Counts
Beginning of Year (Average CY11 - CY20)	AAA	100.0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.30	33.00
	AA+	4.8%	95.2%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.30	63.00
	AA	-	8.6%	91.4%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.80	58.00
	AA-	-	-	8.3%	91.7%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.80	48.00
	A+	-	-	-	4.5%	95.5%	-	-	-	-	-	-	-	-	-	-	-	-	-	2.20	22.00
	A	-	-	-	-	8.7%	89.1%	2.2%	-	-	-	-	-	-	-	-	-	-	-	4.60	46.00
	A-	-	-	-	-	-	6.8%	79.5%	6.8%	4.5%	2.3%	-	-	-	-	-	-	-	-	4.40	44.00
	BBB+	-	-	-	-	-	-	21.4%	67.9%	10.7%	-	-	-	-	-	-	-	-	-	2.80	28.00
	BBB	-	-	-	-	-	-	-	17.6%	58.8%	5.9%	-	5.9%	-	-	5.9%	-	-	5.9%	1.70	17.00
	BBB-	-	-	-	-	-	-	11.1%	-	22.2%	55.6%	-	11.1%	-	-	-	-	-	-	0.90	9.00
	BB+	-	-	-	-	-	-	-	-	-	-	100.0%	-	-	-	-	-	-	-	0.10	-
	BB	-	-	-	-	-	-	33.3%	-	-	-	-	33.3%	-	-	33.3%	-	-	-	0.30	-
	BB-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-
	B+	-	-	-	-	-	-	-	-	-	-	-	-	-	50.0%	50.0%	-	-	-	0.20	-
	B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66.7%	-	-	-	0.00	-
	B-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-
	CCC-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	-

Transition Rates – Financial Institution vs. Corporate



		CY11	CY12	CY13	CY14	CY15	CY16	CY17	CY18	CY19	CY20
Upgrade Rate (%)	Financial Institution	8.3%	16.2%	14.7%	5.6%	11.8%	13.2%	7.7%	9.8%	-	2.4%
	Corporate	16.2%	5.1%	-	11.9%	25%	10.6%	8.5%	16.5%	9.5%	11%
Downgrade Rate (%)	Financial Institution	8.3%	8.1%	-	11.1%	2.9%	5.3%	2.6%	2.4%	7.3%	-
	Corporate	10.8%	15.4%	2.6%	-	6.3%	4.3%	-	-	4.1%	1.6%
Maintain Rate (%) - RHS	Financial Institution	83.3%	73.0%	85.3%	83.3%	85.3%	81.6%	89.7%	87.8%	92.7%	97.6%
	Corporate	67.6%	74.4%	97.4%	88.1%	68.8%	85.1%	91.5%	83.5%	86.4%	87.4%
Default Rate (%)	Financial Institution	-	2.7%	-	-	-	-	-	-	-	-
	Corporate	5.4%	5.1%	-	-	-	-	-	-	-	-

➤ Overall, financial institutions exhibited greater stability, compared to corporates, over the 10 year period.

Default Trends - CDRs



PACRA Average Cumulative Default Rates (CDRs) - CY11-CY20										
	1-Year	2-Year	3-Year	4-Year	5-Year	6-Year	7-Year	8-Year	9-Year	10-Year
AAA	-	-	-	-	-	-	-	-	-	-
AA+	-	-	-	-	-	-	-	-	-	-
AA	-	-	-	-	-	-	-	-	-	-
AA-	-	-	-	1.3%	1.5%	1.9%	-	-	3.8%	-
AA	-	-	-	0.4%	0.5%	-	-	-	1.4%	-
A+	-	-	-	-	-	-	-	-	-	-
A	0.7%	1.8%	2.3%	3.2%	3.9%	4.8%	5.9%	7.5%	10.3%	19.1%
A-	-	0.7%	1.1%	1.4%	1.8%	2.1%	2.7%	3.8%	6.3%	10.0%
A	0.2%	-	1.2%	1.5%	1.8%	-	100.0%	4.1%	6.2%	11.0%
BBB+	-	-	-	-	-	-	-	-	-	-
BBB	-	-	-	-	-	-	-	-	-	-
BBB-	-	-	-	-	-	-	-	-	-	-
BBB	1.9%	3.8%	6.0%	5.8%	7.1%	-	100.0%	15.7%	18.7%	16.7%
BB+	-	-	-	-	-	-	-	-	-	-
BB	-	-	-	-	-	-	-	-	-	-
BB-	-	-	-	-	-	-	-	-	-	-
BB	-	-	-	-	-	-	-	-	-	-
B+	-	-	-	-	-	-	-	-	-	-
B	-	-	-	-	-	-	-	-	-	-
B-	-	-	-	-	-	-	-	-	-	-
B	-	-	-	-	-	-	-	-	-	-
CCC – C	-	-	-	-	-	-	-	-	-	-
Investment Grade (AAA-BBB)	0.4%	0.8%	1.1%	1.5%	1.8%	2.2%	2.8%	3.7%	5.5%	5.7%

➤ For investment grade categories , CDRs peaked in the 10th year at 5.7%.

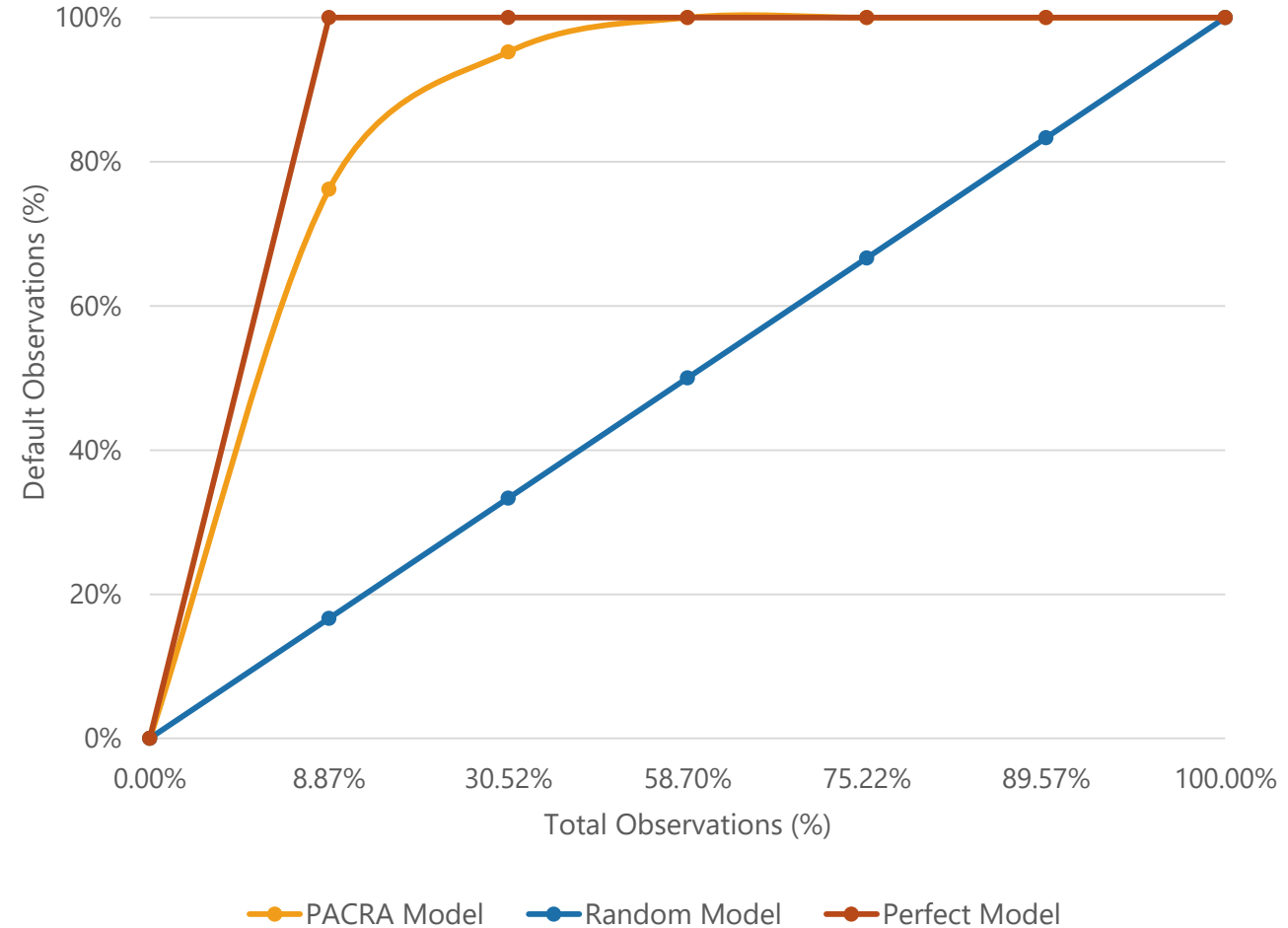
Default Trends – Time to Default



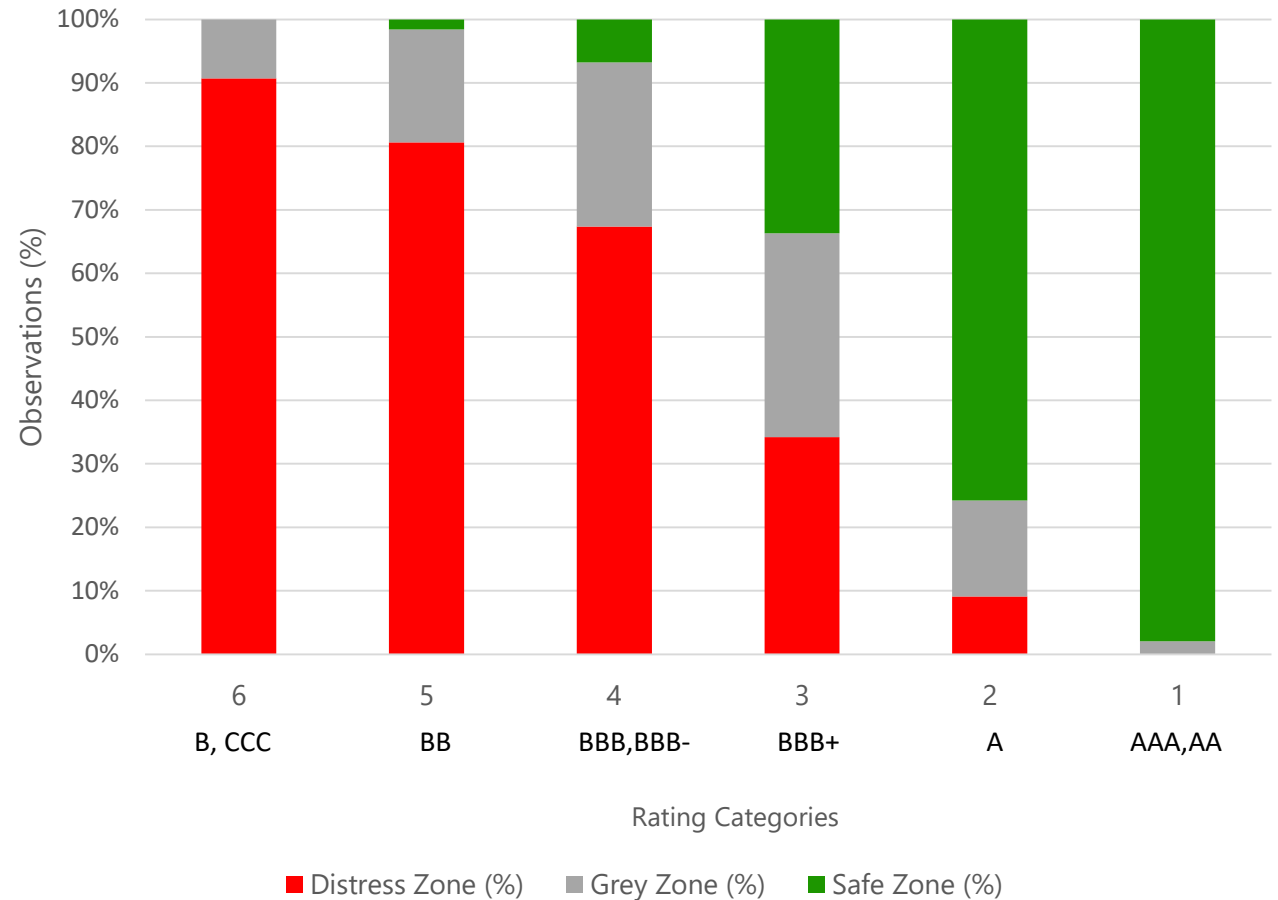
Rating Category	Time to default (in months)	
	Initial Ratings	All Ratings
AAA	N/A	N/A
AA	N/A	81
A	53* (7)**	47
BBB	74 (3)	41
BB	81 (2)	17
* Time to Default ** Default Counts		

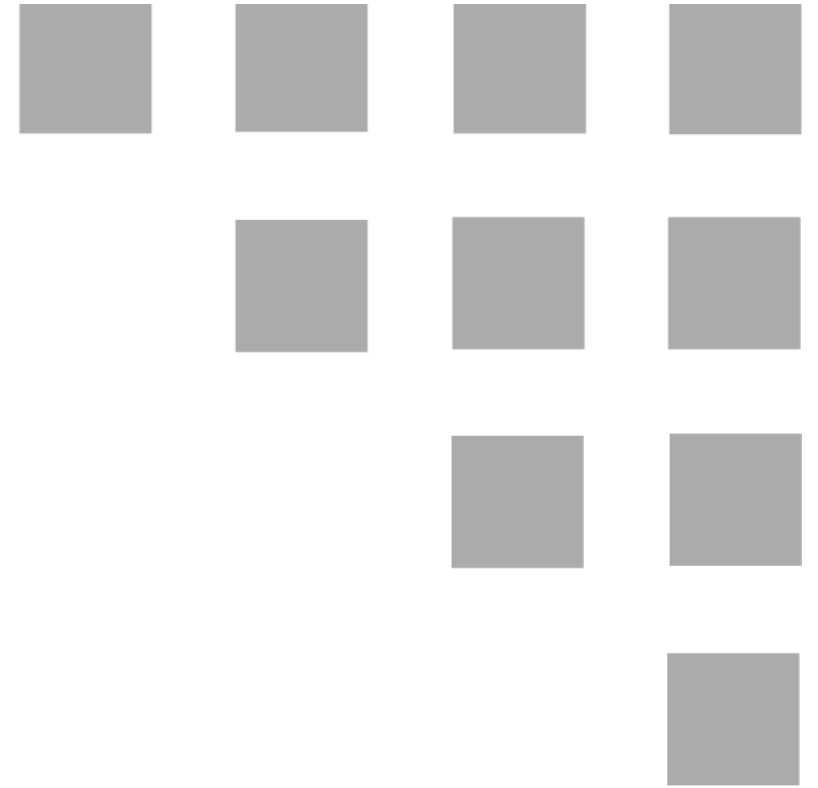
- There are no defaults in the AAA category
- The AA category has one (1) default from an entity that attained its lifetime-high rating within this category that was re-affirmed twice
- The A category has an average time-to-default from the initial rating of 53 months and from all ratings of 47 months
- For the BBB category, it is 74 months from initial ratings and 41 months from all ratings
- The time-to-default for initial ratings is not representative at the BB category. This is so as PACRA has only two defaults emanating from this category widely varying in the time elapsed pre-default - One entity defaulting after 148 months and the other only after 14 months, hence skewing the data

- The high degree of overall stability exhibited by PACRA's ratings is reflected in the discriminatory power of its rating models.
- The validation of PACRA's rating models supports that the model with lower defaults in the higher rating categories
- This is reflected in the Receiver Operating Characteristic (ROC) as depicted here
- A rating model's performance is judged by the steepness of the ROC curve at the left end and the closeness of the ROC curve's position to the point (0,1)
- The ROC for PACRA's model is visibly steep at the left end, indicating strong discriminatory power.



- The Altman Z-score is the output of a credit-strength test that gauges a company's likelihood of bankruptcy.
- The Altman Z-score is based on five financial ratios
- Comparison of PACRA's model results with Altman Z-Score depicts high correlation with the results of PACRA models, with higher rated observations lying predominantly lying in the **safe zone**, while, as ratings move into the lower grades, they are increasingly found in the **grey zone** and **red zone**. This indicates strong historical robustness.





SECTION III: PEER ANALYSIS



PACRA Defaults

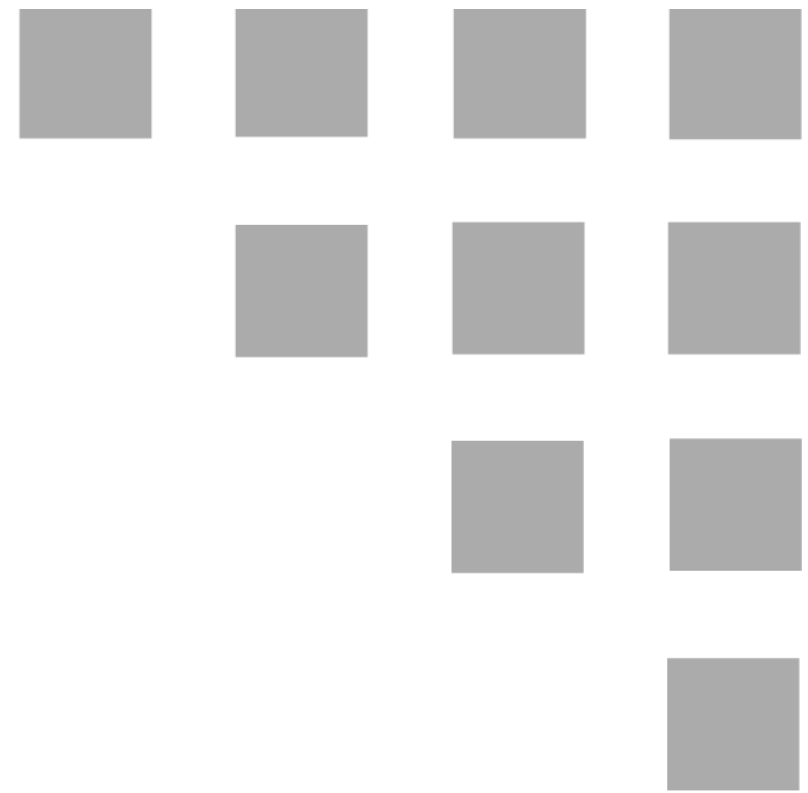


Transition to Default					
Entity / Issuers	Key Lifetime Ratings		Prior-to-Default Rating		DEFAULT
	Initial	Highest	One year	Last	
Financial Institutions					
Network Leasing	BBB (Mar-00)	BBB (Mar-00 to Oct-06)	BBB (Dec-04)	BBB (Oct-06)	D (Oct-06)
First Dawood Investment Bank	BBB (Aug-99)	A+ (Mar-03 to Mar-08)	A+ (Mar-08)	BB (May-09)	D (Dec-09)
Trust Investment Bank	BB+ (Apr-99)	AA- (Nov-04 to Apr-07)	BBB (May-11)	C (Sep-12)	D (Oct-12)
Industrial Corporates					
Dewan Cement	A (Jul-06)	A (Jul-06 to Aug-07)	A- (Sept-08)	CC (May-09)	D (Nov-09)
Maple Leaf Cement Factory	A (Oct-07)	A (Oct-07)	BBB+ (Dec-08)	BBB- (Dec-09)	D (Dec-09)
Shakarganj Mills	BBB+ (Feb-08)	BBB+ (Feb-08)	BBB+ (Feb-08)	BB- (Nov-09)	D (Nov-09)
Pace (Pakistan)	A+ (Jun-07)	A+ (Jun-07 to May-08)	A (Aug-09)	A (Oct-10)	D (Mar-11)
Azgard Nine	A- (Sept-03)	A+ (Sept-07 to Nov-08)	A+ (Nov-08)	BB+ (Jun-10)	D (Sept-10)
Agritech	A+ (Sept-07)	A+ (Sept-07 to Nov-08)	A+ (Nov-08)	BB+ (Jun-10)	D (Sept-10)
Maple Leaf Cement Factory	BB (Ju1-10)	BB (Ju1-10 to Jul11)	BB (Jul-10)	BB (Ju1-11)	D (Sept-11)
Pak Elektron	A (Jul-06)	A (Ju1-06 to Jun-10)	A (Jun-10)	BBB (Oct-11)	D (Jan-12)
WorldCall Telecom	A+ (Jul-06)	A+ (Jul-06 to Sep-08)	A- (Jul-11)	BB+ (Jul-12)	D (Jul-12)

- For PACRA, 12 Entities / Issuers have defaulted since inception
- It is worth noting that most of the defaults occurred at higher ratings. This is due to likelihood of default increasing in tougher operating environments and PACRA's historically limited coverage of the lower ratings market
- PACRA expects this latter anomaly to remain intact till the time when the ratings universe in Pakistan would increase to have a more equitable distribution of ratings across the entire length and breadth of the rating scale

Transition to Default					
Entity / Issuers	Key Lifetime Ratings		Prior-to-Default Rating		DEFAULT
	Initial	Highest	One year	Last	
Financial Institutions					
Security Leasing	A (Dec-04)	A (Dec-04)	BBB (Mar-09)	BBB- (May-09)	D (Mar-10)
BRR Guardian Modaraba	A- (Oct-02)	A (Jun-07 to Oct-07)	A (Oct-07)	BBB (Jun-10)	D (Jul-10)
Invest Capital investment	A- (Jun-08)	A- (Jun-08 to Jul-10)	A- (Jul-09)	A- (Jul-10)	D (Sept-10)
Bank Saudi Pak Leasing	A- (Dec-05)	A- (Dec-05 to Aug-08)	BBB- (May-09)	C (Aug-10)	D (Oct-10)
Al Zamin Leasing Corporation	AA- (Aug-02)	AA- (Aug-02 to Jul-06)	C (Sept-10)	C (Sept-10)	D (Jan-13)
Industrial Corporates					
Gharibwal Cement	BBB (Jun-06)	BBB (Jun-06 to Jul-07)	BBB (Jul-07)	BB+ (Jul-08)	D (Jul-08)
New Allied Electronics	A- (Nov-06)	A- (Nov-06 to Sept-08)	A- (Apr-07)	BB+ (Nov-08)	D (Dec-08)
Gharibwal Cement	BB+ (Jun-09)	BB+ (Jun-09)	BB+ (Jun-09)	BB+ (Jun-09)	D (Oct-09)
Eden Housing	A (May-08)	A (May-08 to Oct-09)	A (May-08)	A (Oct-09)	D (Jan-10)
Wateen Telecom	A (Nov-06)	A (Nov-06 to Mar-09)	A (Mar-09)	A (Mar-09)	D (Oct-10)
Amtex Textiles	A- (Dec-08)	A (Dec-08 to Nov-09)	A- (Dec-08)	A- (Nov-10)	D (Jan-11)
Telecard	A (Oct-04)	A ¹⁰ (Oct-04 to Oct-05)	BBB (Feb-09)	BBB (Oct-10)	D (Jun-11)
Quetta Textiles	A- (Mar-08)	A- (Mar-08 to Mar-09)	BBB+ (May-10)	BB (Mar-12)	D (Mar-12)

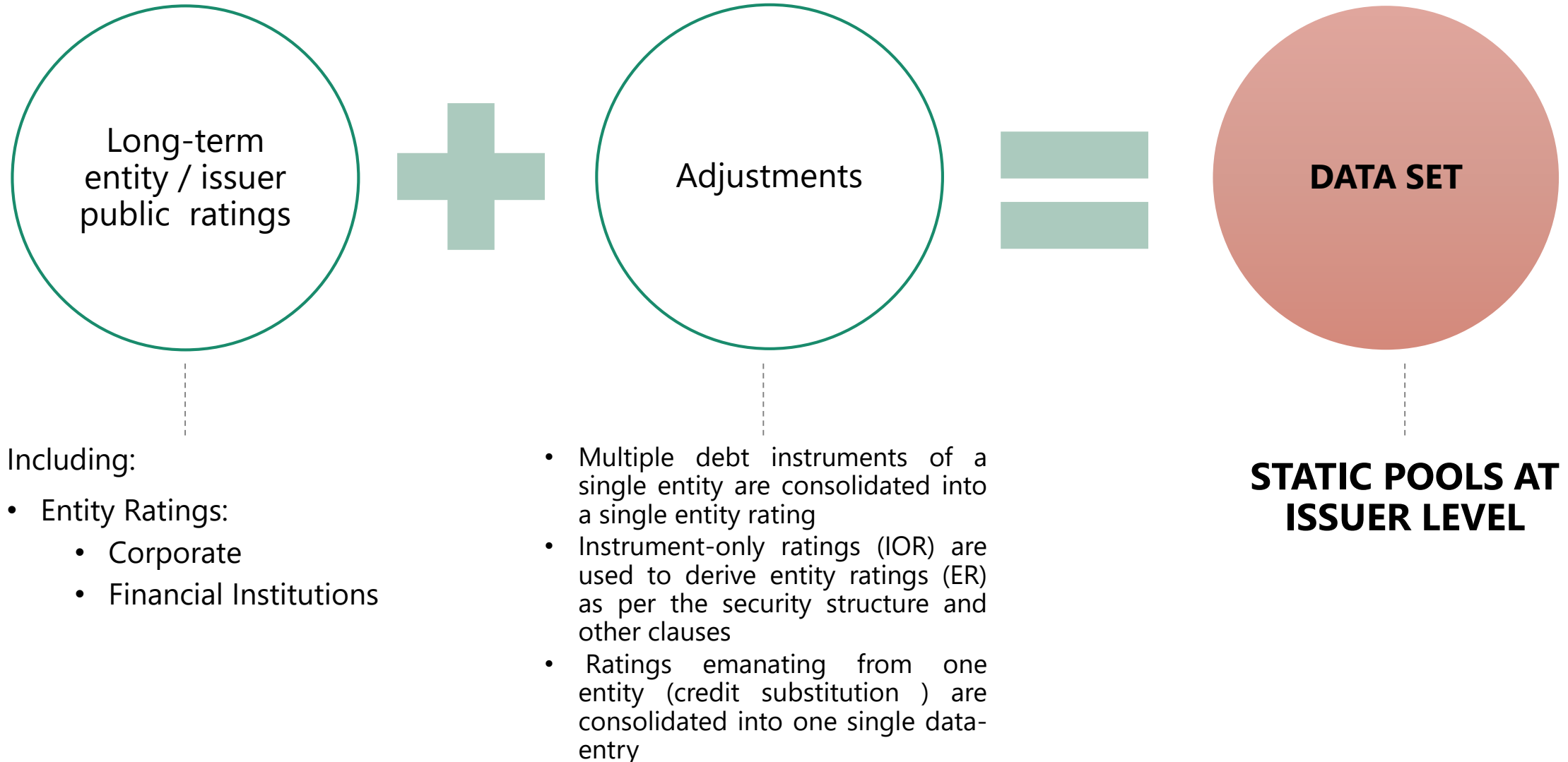
➤ For VIS, 13 Entities / Issuers have defaulted since inception



ANNEXURES



Key Terms	Definition / Explanation
Static Pool	Groupings of data that stay together in the group for the entire length and breadth of the measurement period of the pool
Upgrade Rate	The rate of upward rating transition (Ceiling: Triple A "AAA")
Downgrade Rate	The rate of downward rating transition (Floor: Single C "C")
Default Rate	Proportion of entities / issuers that have been assigned a Default "D" rating (As per PACRA Default Policy "How PACRA Recognizes Default") to the total number of entities / issuers over the measurement period
Transition Rate	Statistics quantifying the transition of ratings on the rating scale between a certain time period
Time-to-Default	A term denoting how far a rating lies from the time of its default.



Measurement period

- Annual (Single / Multiple)
- Monthly (Smallest measurement period)

Withdrawal Adjustment

Static Pools are adjusted for all withdrawals during a measurement period

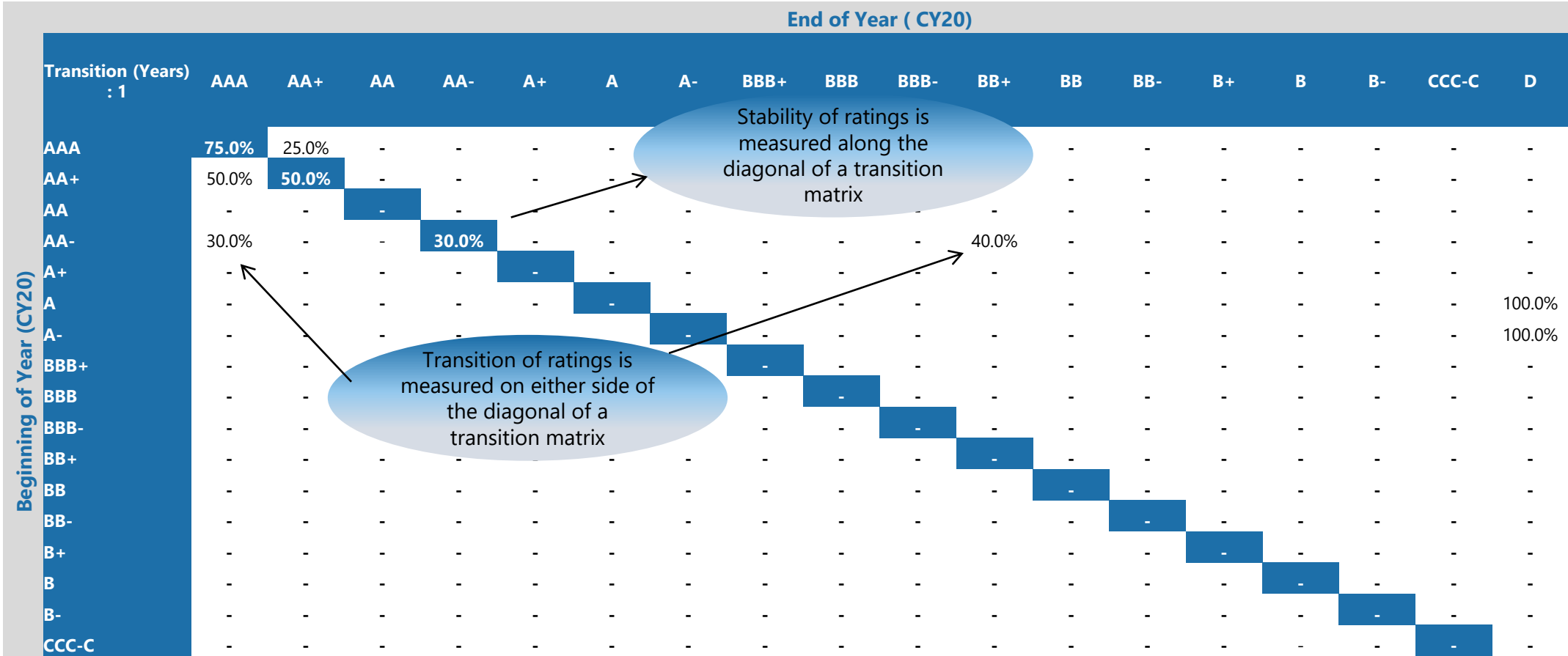
Treatment of initial ratings

An initial rating of CY20 will form part of the next year (CY21) pool, if not withdrawn

Post-default withdrawals

A rating put in default & subsequently withdrawn is reported as "D" (Default) only

Understanding Rating Transition Analysis



ADRs and CDRs

- Annual Default Rates (ADRS) reflect the probability that an entity / issuer that has survived in a Static Pool in the beginning of a particular year will default by the end of the same year
- Cumulative Default Rates (CDRs) reflects the probability that an entity / issuer that has survived in a Static Pool up to the beginning of each subsequent year of the Measurement Period underlying the CDR will default by the end of last year of such Measurement Period.

Time-to-default Statistics

- Time-to-Default from **Initial** ratings: Measures the time elapsed between the initial rating (as assigned by PACRA) and default
- Time-to-Default from **All** ratings: Measures the rating path to default, tracking from the time of initial rating to all successive rating transitions on the rating scale prior to default

SECP | Credit Rating Companies Regulations, 2016 | August 05, 2016 (As Amended October 17, 2019)

III-11-A-(I): A credit rating company shall, - *publish annually, within one month of calendar year, a comprehensive default and transition study developed in line with methodologies practiced by credit rating agencies globally. The annual default and transition study must contain cumulative default rates (CDRs) and transitions for each rating grade for periods 1, 3 and 5 years*

Annexure H: *Other information to be disseminated on the website of a credit rating company/agency*

3: *Detail of transitions/changes in the credit ratings reviewed during the last five years. The detail should contain the ratings upgraded, downgraded and those remained unchanged. For ease of comparison both the rating i.e. before and after the review and the number of notches upgraded or downgraded should be disclosed.*

6: *Definition of the term, "default".*

7: *Entity-wise list of defaults for all the outstanding issues and for all the issues redeemed during the last five years.*

8: *Rating scale-wise list of default for all the outstanding issues and for all the issues redeemed during the last five years separately for structured instruments and non-structured instruments.*

SBP | Eligibility Criteria for recognition of External Credit Assessment Institutions (ECAIs), July 2005

a) Objectivity of the methodology: *ECAI should have methodology of assigning credit rating that is rigorous, systematic, continuous and subject to validation. To establish that ECAI fulfills this primary component of eligibility criteria, it must demonstrate that it meets minimum standards given below:*

5. *ECAI should demonstrate that the rating methodologies are subject to quantitative back testing. For this purpose, ECAI should calculate and publish default studies, recovery studies and transition matrices. For the purpose, the ECAI should have a definition of default that is equivalent to international standard and is relevant to domestic market.*

d) Disclosure: *ECAI should demonstrate that it provide access to information that are sufficient to enable its stakeholders to make decision about the appropriateness of risk assessments. The purpose of this disclosure requirement is to promote transparency and bring in market discipline. ECAI is therefore expected to make public following information:*

2. *Definition of default*

6. *Actual default rates experienced in each assessment category*

7. *Transition matrices*

http://www.sbp.org.pk/bsd/Criteria_Rating_Agencies.pdf

ACRAA | Code of Conduct Fundamentals for domestic Credit Rating Agencies – April 2011

ACRAA Explanation of Clause 3.8 -

1. *Each rating agency should publish at least annually a default and transition study along with the methodology*
2. *The default study should provide details of the following:*
 - *Annual default rates for each rating category;*
 - *3-year average cumulative default rates;*
 - *1-year transition rates*

<http://acraa.com/images/pdf/DCRA.pdf>

IOSCO CODE OF CONDUCT FUNDAMENTALS FOR CREDIT RATING AGENCIES - REVISED MARCH 2015

3.18: *To promote transparency and to enable investors and other users of credit ratings to compare the performance of different CRAs, a CRA should disclose sufficient information about the historical transition and default rates of its credit rating categories with respect to the classes of entities and obligations it rates. This information should include verifiable, quantifiable historical information, organized over a period of time, and, where possible, standardized in such a way to assist investors and other users of credit ratings in comparing different CRAs. If the nature of the rated entity or obligation or other circumstances make such historical transition or default rates inappropriate, statistically invalid, or otherwise likely to mislead investors or other users of credit ratings, the CRA should disclose why this is the case.*

<https://www.iosco.org/library/pubdocs/pdf/IOSCOPD482.pdf>



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DISCLAIMER

Each transition and default study issued by PACRA is self-contained. This is so as PACRA's continuing data enhancement efforts may result in slightly different statistics than in previously published studies and statistics. In addition, comparisons with earlier studies should be viewed within the context of the differing methodologies and definitions, employed therein.

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