Transition & Default Study

CY15-CY24



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SECTION I: CONCEPT OF TRANSITION & DEFAULT STUDY

Concept of Transition and Default Study



What is a Transition & Default Study?

A Set of Standardized Tools & Analyses for a Credit Rating Company's (CRC) ratings' performance appraisal.

Need for a Transition & Default Study

- Self-assessment of CRC
- Peer Analysis with other CRCs
- Regulatory Requirement:

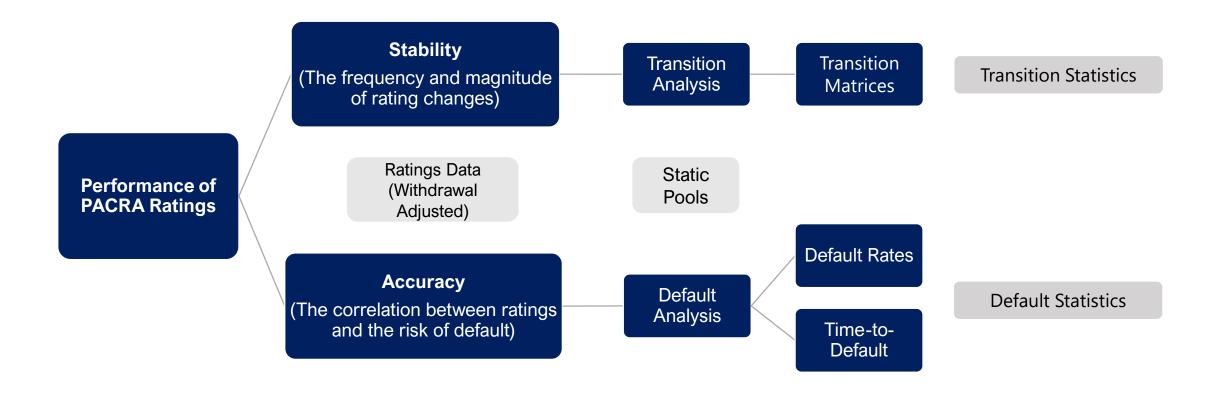
"A credit rating company shall.- publish annually, within one month of the calendar year, a comprehensive default and transition study developed in line with methodologies practiced by credit rating agencies globally. The annual default and transition study must contain cumulative default rates (CDRs)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

Credit Rating Companies Regulations, 2016 Chapter III, Section 11-A-(I)

Schematic – A Typical Transition & Default Study



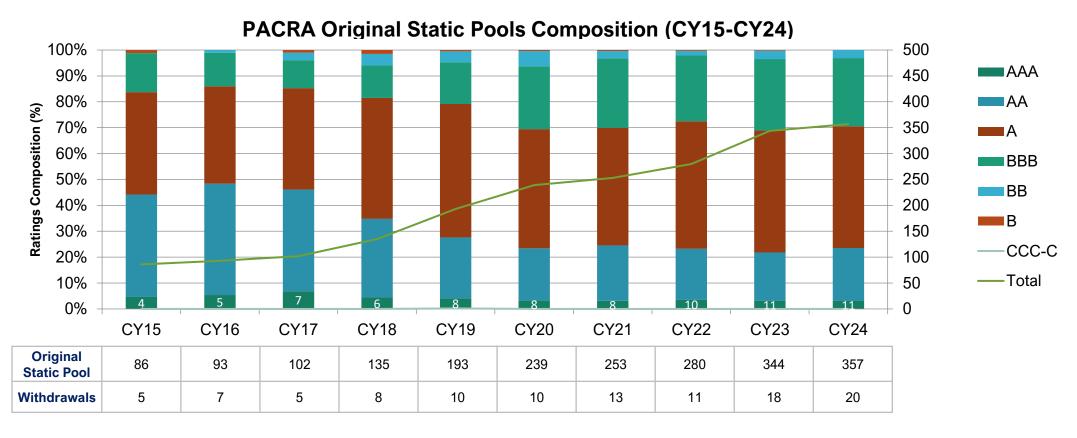
PACRA's Transition and Default Study assesses the accuracy and stability of its entity ratings by analyzing historical rating changes and default rates across one, three, five, and ten year horizons. This enhances the credibility and transparency of its rating process.



SECTION II: PACRA TRANSITION & DEFAULT TRENDS

Rating Distribution



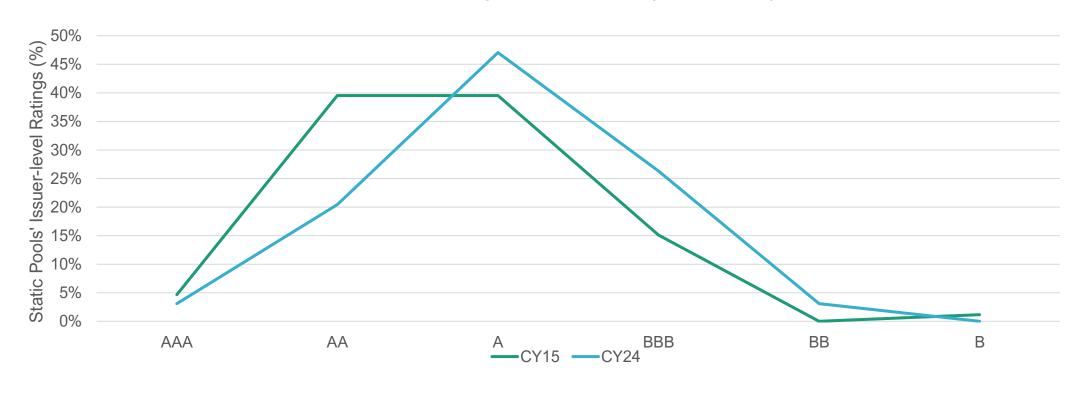


- > PACRA's rating universe was quite limited in size until CY17 which posed limitations to the interpretation of study results.
- Significant growth in rating opinions over the past 6 years has made the results of the study statistically more meaningful.

Rating Distribution



PACRA Ratings' Composition (CY15-CY24)



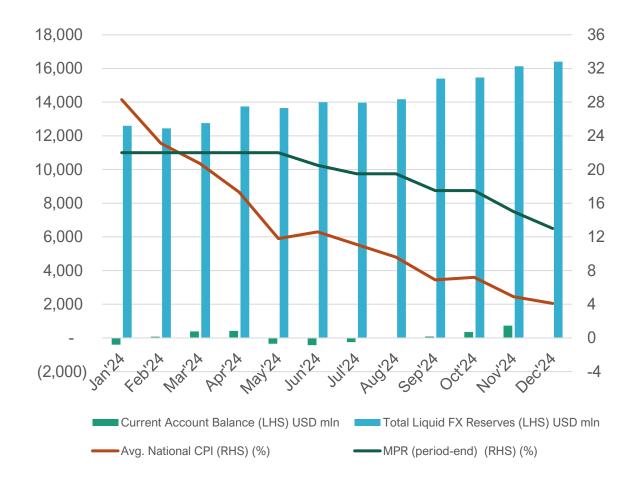
- ➤ The mean rating for PACRA has shifted from "AA" to "A" category between CY15 and CY24 while the median rating category during CY24 has largely remained unchanged at "A".
- The decline in the mean rating is attributable to the rating universe having expanded threefold over the decade and addition of relatively lower rated clients, resulting in a more balanced rating mix.

Overview of Economy



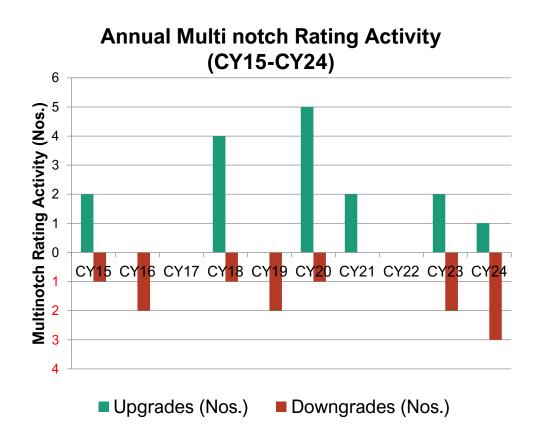
- ➤ Pakistan posted negative GDP growth in CY23 (-0.15%) mainly due to contractionary policies, floods, and supply chain shock resulting from the on-going global recession after the pandemic. In CY24, the country's GDP showed signs of recovery with the annual growth rate of 2.03% as the government took various measures for economic revival. The average YOY CPI Inflation also decreased to a single digit in August 2024 and continued to decline to 4.1% in December. This led to a gradual reduction in policy rate of 900 basis points during CY24, ending the year at 13%.
- ➤ Meanwhile, Pakistan posted a current account surplus of \$729mln at end-CY24 (CY23: \$397mln) with demand contraction and relatively higher interest rates.
- ➤ The exchange rate remained largely stable (1 USD = ~278 PKR) by year end.
- ➤ Although agriculture and service sectors posted growth, Large scale manufacturing still remain under pressure with -8.84% contraction in CY24.

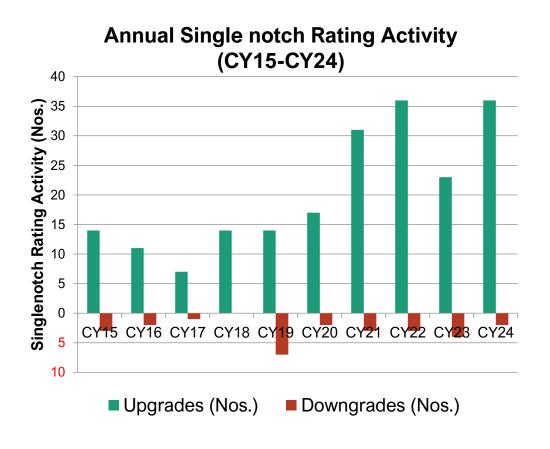
Trends in Key Policy Indicators (CY15-CY24)



Impact on PACRA Rating Agency







- ➤ With the country's economic recovery underway in CY24, PACRA's entity rating upgrade rate increased from ~7.7% in CY23 to 11% in CY24. The the downgrade rate saw a slight decline to 1.5% in CY24 (CY23: ~1.8%).
- ➤ Moreover, CY24 saw one multi-notch upgrade along with three instances of multi-notch downgrades. Additionally, 36 single-notch upgrades were recorded versus only 2 single-notch downgrades.

Impact on PACRA Rating Agency – Upgrades in Focus



- ➤ The top 5 sectors that witnessed the highest number of upgrades were Banks, Infrastructure, Towels, Garments and Food and Allied.
- ➤ PACRA upgraded 5 entities in the banking sector in CY24. This was on the back of significant increase in bank earnings, attributable primarily to elevated policy rate and higher Government borrowings. The banks allocated a greater portion of their funds towards government securities as private sector credit shrank. Additionally, the banking sector focused on technological advancements and largely consolidated operations.
- ➤ The Towels and Garments sectors largely benefited from their export-oriented business models and relatively stable costs. The Food and Allied sector posted strong performance after adjusting for recent price hikes and inflationary pressure. These factors led to rating upgrades for several companies within these industries.
- ➤ The Towels and Garments sector witnessed three upgrades while several Food and Allied sector companies were upgraded due to strong performance.
- ➤ Economic recovery, coupled with increased export demand and government spending, has boosted the infrastructure sector, leading to upgrades for four entities.

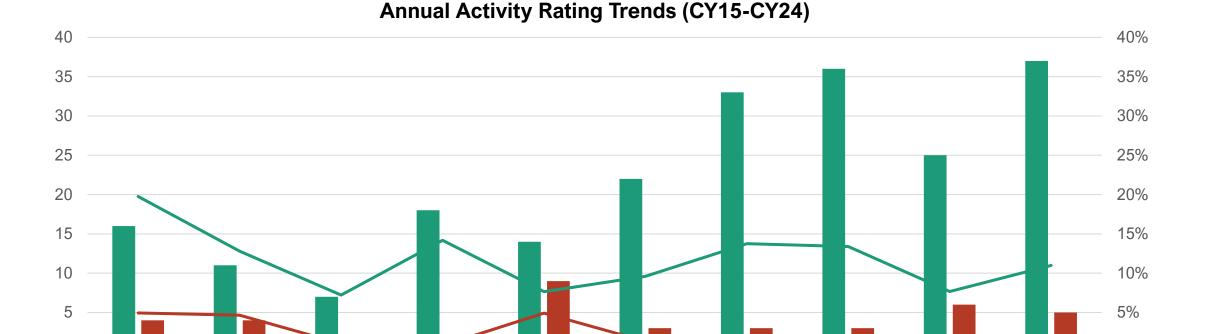
| Sector | Banks | Food and Allied | Infrastructure | Textile and Allied |
|--------------------|-------|-----------------|----------------|--------------------|
| Number of Upgrades | 5 | 4 | 4 | 3 |

Annual Rating Activity Trend

CY15

CY16





CY20

CY21

CY22

CY23

> The default rate has remained unchanged at 0% after CY15.

CY18

CY17

➤ Upgrade rate picked up pace in CY24 while the downgrade rate remained stable.

CY19

Upgrades (Nos.) (LHS)
Downgrades (Nos.) (LHS)
Upgrade Rate (%) (RHS)
Downgrade Rate (%)(RHS)

0%

CY24

CY24 Transition Matrix



| | | | | | | | | | | | | | | | | | | | | 108 | gether. Creating value |
|--------------------------|---------------------------|---------------------------------------|--------|----------|--------|-------|------------|-------|-------|--------|---------|-------|--------|-------|-----|----|-------|----|---------|------|------------------------|
| | | | | | | | | | | End of | Year (0 | CY24) | | | | | | | | | |
| | Transition (Years) : 1 | Withdrawal Adjusted Static Pool | AAA | AA+ | AA | AA- | A + | A | Α- | BBB+ | ввв | BBB- | BB+ | ВВ | вв- | B+ | В | В- | CCC-C I |) Wi | ithdrawals |
| | AAA | 11.00 | 100.0% | | | | | | | | | | | | | | | | | | 0.00 |
| | AA+ | 15.00 | 6.7% | 86.7% | 6.7% | | | | | | | | | | | | | | | | 0.00 |
| | AA | 26.00 | | | 100.0% | | | | | | | | | | | | | | | | 0.00 |
| | AA- | 32.00 | | <u> </u> | 12.5% | 87.5% | | | | | | | | | | | | | | | 0.00 |
| | A+ | 32.00 | | | | 12.5% | 87.5% | | | | | | | | | | | | | | 0.00 |
| Beginning of Year (CY24) | Α | 45.00 | | | | | 15.6% | 84.4% | | | | | | | | | | | | | 1.00 |
| r (C | A- | 87.00 | | | | | 1.1% | 5.7% | 90.8% | 1.1% | | | | 1.1% | | | | | | | 3.00 |
| Yea | BBB+ | 24.00 | | | | | | | 20.8% | 79.2% | | | | | | | | | | | 3.00 |
| of | BBB | 31.00 | | | | | | | | 16.1% | 83.9% | | | | | | | | | | 10.00 |
| ning | BBB- | 24.00 | | | | | | | | | 20.8% | 75.0% | | 4.2% | | | | | | | 2.00 |
| ginr | BB+ | 5.00 | | | | | | | | | | | 100.0% | | | | | | | | 1.00 |
| Be | ВВ | 5.00 | | | | | | | | | | | | 80.0% | | | 20.0% | | | | 0.00 |
| | BB- | 0.00 | | | | | | | | | | | | | | | | | | | 0.00 |
| | B+ | 0.00 | | | | | | | | | | | | | | | | | | | 0.00 |
| - | В | 0.00 | | | | | | | | | | | | | | | | | | | 0.00 |
| | B- | 0.00 | | | | | | | | | | | | | | | | | | | 0.00 |
| | CCC-C | 0.00 | | | | | | | | | | | | | | | | | | | 0.00 |

[➤] In CY24, higher proportion of rating upgrades were observed in rating categories "A" (Single A) and "BBB"(Triple BBB).

One-year Average Transition Matrix - Corporates



| | | | | | | | | | | | | | | | | | | | | regenien erenning varae |
|--------------------------|---------------------------|---------------------------------------|--------|-------|--------|-------|------------|-------|-------|--------|---------|-------|--------|-------|-----|----|-------|----|---------|-------------------------|
| | | | | | | | | | | End of | Year (0 | CY24) | | | | | | | | |
| | Transition (Years) : 1 | Withdrawal Adjusted Static Pool | AAA | AA+ | AA | AA- | A + | A | Α- | BBB+ | ввв | BBB- | BB+ | ВВ | BB- | B+ | В | В- | CCC-C D | Withdrawals |
| | AAA | 4.00 | 100.0% | | | | | | | | | | | | | | | | | 0.00 |
| | AA+ | 9.00 | | 88.9% | 11.1% | | | | | | | | | | | | | | | 0.00 |
| | AA | 20.00 | | | 100.0% | | | | | | | | | | | | | | | 0.00 |
| | AA- | 28.00 | | | 10.7% | 89.3% | | | | | | | | | | | | | | 0.00 |
| | A+ | 29.00 | | | | 13.8% | 86.2% | | | | | | | | | | | | | 0.00 |
| Beginning of Year (CY24) | Α | 41.00 | | | | | 14.6% | 85.4% | | | | | | | | | | | | 1.00 |
| 5 | Α- | 70.00 | | | | | 1.4% | 5.7% | 91.4% | | | | | 1.4% | | | | | | 3.00 |
| Yea | BBB+ | 22.00 | | | | | | | 18.2% | 81.8% | | | | | | | | | | 3.00 |
| of | BBB | 29.00 | | | | | | | | 17.2% | 82.8% | | | | | | | | | 10.00 |
| jing | BBB- | 21.00 | | | | | | | | | 23.8% | 76.2% | | | | | | | | 2.00 |
| ginr | BB+ | 4.00 | | | | | | | | | | | 100.0% | | | | | | | 1.00 |
| Be | ВВ | 5.00 | | | | | | | | | | | | 80.0% | | | 20.0% | | | 0.00 |
| | BB- | 0.00 | | | | | | | | | | | | | | | | | | 0.00 |
| | B+ | 0.00 | | | | | | | | | | | | | | | | | | 0.00 |
| | В | 0.00 | | | | | | | | | | | | | | | | | | 0.00 |
| | В- | 0.00 | | | | | | | | | | | | | | | | | | 0.00 |
| | CCC-C | 0.00 | | | | | | | | | | | | | | | | | | 0.00 |

> One-year average rating transition of Corporates is consistent with its overall trend of migration to higher rating categories.

One-year Average Transition Matrix – Financial Institutions



| | | | | | | | | | | End of | Year (| CY24) | | | | | | | | | |
|--------------------------|---------------------------|---------------------------------------|--------|-------|--------|-------|------------|-------|-------|--------|--------|-------|--------|-------|-----|----|---|----|----------|---|-------------|
| | Transition (Years) : 1 | Withdrawal Adjusted Static Pool | AAA | AA+ | AA | AA- | A + | A | Α- | BBB+ | BBB | ВВВ- | BB+ | ВВ | вв- | B+ | В | B- | CCC-C | D | Withdrawals |
| | AAA | 7.00 | 100.0% | | | | | | _ | | | | | | | | | | | | 0.00 |
| | AA+ | 6.00 | 16.7% | 83.3% | | | | | | | | | | | | | | | | | 0.00 |
| | AA | 6.00 | | | 100.0% | | | | | | | | | | | | | | | | 0.00 |
| | AA- | 4.00 | | | 25.0% | 75.0% | | | | | | | | | | | | | <u> </u> | | 0.00 |
| | A+ | 3.00 | | | | | 100.0% | | | | | | | | | | | | | | 0.00 |
| Beginning of Year (CY24) | Α | 4.00 | | | | | 25.0% | 75.0% | | | | | | | | | | | | | 0.00 |
| r (C | A- | 17.00 | | | | | | 5.9% | 88.2% | 5.9% | | | | | | | | | | | 0.00 |
| Yea | BBB+ | 2.00 | | | | | | | 50.0% | 50.0% | | | | | | | | | | | 0.00 |
| of | BBB | 2.00 | | | | | | | | | 100.0% | | | | | | | | | | 0.00 |
| ning | BBB- | 3.00 | | | | | | | | | | 66.7% | | 33.3% | | | | | | | 0.00 |
| ginr | BB+ | 1.00 | | | | | | | | | | | 100.0% | | | | | | | | 0.00 |
| Be | ВВ | 0.00 | | | | | | | | | | | | | | | | | | | 0.00 |
| | BB- | 0.00 | | | | | | | | | | | | | | | | | | | 0.00 |
| | B+ | 0.00 | | | | | | | | | | | | | | | | | | | 0.00 |
| | В | 0.00 | | | | | | | | | | | | | | | | | | | 0.00 |
| | B- | 0.00 | | | | | | | | | | | | | | | | | | | 0.00 |
| | CCC-C | 0.00 | | | | | | | | | | | | | | | | | | | 0.00 |

> One-year average rating transition of Financial institutions reveals a positive trajectory with five FI's being upgrades while only two were downgraded.

One-year Average Transition Matrix



| | | | | | | | | | Avera | ge Annu | al Trans | sition (CY | (15-CY2 | 24) | | | | | | |
|---|--------|-------|-------|-------|-------|-------|-------|-------|-------|---------|----------|------------|---------|-------|-------|--------|-------|---|--|-------------|
| Transition Period (1-Year) | AAA | AA+ | AA | AA- | A+ | A | Α- | BBB+ | BBB | BBB- | BB+ | ВВ | BB- | B+ | В | В- | ccc-c | D | Withdrawal- Adjusted Static Pool | Data Counts |
| AAA | 100.0% | | | | | | | | | | | | | | | | | | 7.70 | 77.00 |
| AA+ | 2.8% | 95.3% | 1.9% | _ | | | | | | | | | | | | | | | 10.70 | 107.00 |
| AA | | 4.2% | 95.3% | 0.5% | | | | | | | | | | | | | | | 19.20 | 192.00 |
| Beginning of Year (Average CY15-CY24) A+ A BBB BBB- BBB- BBB- BBB- BBB- BBB- | | | 9.7% | 89.7% | 0.5% | | | | | | | | | | | | | | 18.50 | 185.00 |
| A+ | | | | 9.9% | 87.0% | 3.1% | | | | | | | | | | | | | 19.20 | 192.00 |
| <u> </u> | | | | 1.5% | 11.4% | 85.3% | 1.5% | | | | | 0.4% | | | | | | | 27.20 | 272.00 |
| ө А- | | | | 0.4% | 0.2% | 7.3% | 90.2% | 1.1% | 0.6% | | | 0.2% | | | | | | | 46.80 | 468.00 |
| BBB+ | | | | | | | 20.8% | 76.4% | 2.1% | 0.7% | | | | | | | | | 14.40 | 144.00 |
| ₹ BBB | | | | | | 0.6% | 0.6% | 13.3% | 83.6% | 1.2% | | 0.6% | | | | | | | 16.50 | 165.00 |
| BBB- | | | | | | | 1.9% | 0.9% | 18.5% | 75.9% | 0.9% | 1.9% | | | | | | | 10.80 | 108.00 |
| BB+ | | | | | | | | | 7.1% | 33.3% | 59.5% | 4 | | | | | | | 4.20 | 42.00 |
| BB BB | | | | | | | 6.7% | | | | 20.0% | 60.0% | | | 13.3% | | | | 1.50 | 15.00 |
| BB- | | | | | | | | | | | | 100.0% | | | | | | | 0.10 | 1.00 |
| B+ | | | | | | | | | | | | | | 50.0% | 50.0% | | | | 0.20 | 2.00 |
| В | | | | | | | | | | | | | | | 50.0% | 25.0% | 25.0% | | 0.40 | 4.00 |
| В- | | | | | | | | | | | | | | | | 100.0% | ó | | 0.10 | 1.00 |
| CCC-C | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 |

PACRA's higher rating categories have generally witnessed stronger stability rate than the lower rating categories.

Three-year Average Transition Matrix



| | | | | | | | | | Avera | ge Annu | al Trans | ition (CY | /15-CY2 | 4) | | | | | | |
|--|--------|-------|-------|-------|-------|-------|-------|-------|--------|---------|----------|-----------|---------|----|-------|--------|-------|---|--|-------------|
| Transition Period (3-Year) | AAA | AA+ | AA | AA- | A+ | A | A- | BBB+ | ввв | BBB- | BB+ | ВВ | BB- | В+ | В | В- | ccc-c | D | Withdrawal- Adjusted Static Pool | Data Counts |
| AAA | 100.0% | | | | | | | | | | | | | | | | | | 6.88 | 55.00 |
| AA+ | 9.3% | 88.0% | 2.7% | | | | | | | | | | | | | | | | 9.38 | 75.00 |
| AA | | 11.6% | 87.7% | 0.7% | | | | | | | | | | | | | | | 17.25 | 138.00 |
| AA- | | 1.7% | 25.8% | 70.8% | 1.7% | | | | | | | | | | | | | | 15.00 | 120.00 |
| A+ | | | 1.7% | 19.5% | 71.2% | 7.6% | | | | | | | | | | | | | 14.75 | 118.00 |
| ξ <u>A</u> | | | 0.6% | 6.4% | 28.7% | 58.5% | 4.1% | 0.6% | | | | 0.6% | | | 0.6% | | | | 21.38 | 171.00 |
| <u>ө</u> А- | | | | 1.8% | 1.4% | 21.2% | 71.2% | 2.5% | 1.4% | | | 0.4% | | | | | | | 34.75 | 278.00 |
| BBB+ | | | | | | 1.3% | 50.6% | 41.8% | 3.8% | 2.5% | | | | | | | | | 9.88 | 79.00 |
| <u>₹</u> BBB | | | | | 1.4% | | 11.0% | 31.5% | 50.7% | 2.7% | | 2.7% | | | | | | | 9.13 | 73.00 |
| BBB- | | | | | | 2.1% | 10.4% | 6.3% | 41.7% | 37.5% | | | | | 2.1% | | | | 6.00 | 48.00 |
| BB+ | | | | | | | | | 26.9% | 65.4% | 7.7% | | | | | | | | 3.25 | 26.00 |
| BB BB | | | | | | | 33.3% | | 33.3% | 16.7% | | | | | | | 16.7% | | 0.75 | 6.00 |
| Beginning of Year (Average CY15-CY24) A + A A - BBB BB-BBB-BBB-BBB-BBB-BBB-BBB-BB | | | | | | | | | 100.0% | | | | | | | | | | 0.13 | 1.00 |
| B+ | | | | | | | | | | | | | | | 50.0% | 50.0% | 1 | | 0.25 | 2.00 |
| В | | | | | | | | | | | | | | | | 100.0% | 6 | | 0.13 | 1.00 |
| B- | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 |
| CCC-C | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 |

> The three-year average rating stability manifests that rating categories above AA- show greater stability as compared to the lower investment grade rating categories. The lower rating categories show a tendency to migrate towards higher ratings.

Five-year Average Transition Matrix



| | | | | | | | | | Avera | ge Annu | al Trans | ition (CY | /15-CY2 | 4) | | | | | | |
|--|--------|-------|-------|-------|-------|-------|-------|-------|--------|---------|----------|-----------|---------|----|------|--------|-------|---|--|-------------|
| Transition Period (5-Year) | AAA | AA+ | AA | AA- | A+ | A | Α- | BBB+ | ввв | BBB- | BB+ | ВВ | BB- | B+ | В | В- | ccc-c | D | Withdrawal- Adjusted Static Pool | Data Counts |
| AAA | 100.0% | | | | | | | | | | | | | | | | | | 6.17 | 37.00 |
| AA+ | 17.6% | 80.4% | 2.0% | | | | | | | | | | | | | | | | 8.50 | 51.00 |
| AA | | 17.0% | 81.9% | 1.1% | | | | | | | | | | | | | | | 15.67 | 94.00 |
| AA- | | 3.9% | 34.2% | 59.2% | 2.6% | | | | | | | | | | | | | | 12.67 | 76.00 |
| A+ | | | 2.6% | 33.3% | 53.8% | 7.7% | | | | | | 1.3% | | | 1.3% | | | | 13.00 | 78.00 |
| <u>ξ</u> Α | | | 4.3% | 10.8% | 38.7% | 37.6% | 7.5% | 1.1% | | | | | | | | | | | 15.50 | 93.00 |
| <u>Ф</u> А- | | | | 2.1% | 5.6% | 25.2% | 60.1% | 5.6% | 0.7% | | | 0.7% | | | | | | | 23.83 | 143.00 |
| BBB+ | | | | | | 14.3% | 51.4% | 22.9% | 5.7% | 5.7% | | | | | | | | | 5.83 | 35.00 |
| <u>₹</u> BBB | | | | | | 4.2% | 25.0% | 50.0% | 20.8% | | | | | | | | | | 4.00 | 24.00 |
| BBB- | | | | | | 5.6% | 27.8% | 5.6% | 55.6% | 5.6% | | | | | | | | | 3.00 | 18.00 |
| BB+ | | | | | | | 6.3% | 12.5% | 31.3% | 50.0% | | | | | | | | | 2.67 | 16.00 |
| BB BB | | | | | | | 66.7% | | 33.3% | | | | | | | | | | 0.50 | 3.00 |
| Beginning of Year (Average CY15-CY24) A+ BBB+ BBB- BB- BB- | | | | | | | | | 100.0% | | | | | | | | | | 0.17 | 1.00 |
| B+ | | | | | | | | | | | | | | | | 100.0% | 6 | | 0.17 | 1.00 |
| В | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 |
| B- | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 |
| CCC-C | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 |

Analysis of five-year average transition matrices reveals a consistent trend, characterized by higher migration rates among issuers in the lower investment-grade ratings. Conversely, issuers with AA and higher rating categories exhibit significantly higher stability.

Ten-year Average Transition Matrix



| | | | | | | | | | Avera | ge Annu | al Trans | ition (C\ | Y15-CY2 | 4) | | | | | | |
|--|--------|-------|-------|-------|-------|-------|-------|-------|-------|---------|----------|-----------|---------|----|---|----|-------|---|--|-------------|
| Transition Period (10-Year) | AAA | AA+ | AA | AA- | A+ | Α | Α- | BBB+ | ввв | BBB- | BB+ | ВВ | BB- | B+ | В | В- | ccc-c | D | Withdrawal- Adjusted Static Pool | Data Counts |
| AAA | 100.0% | | | | | | | | | | | | | | | | | | 4.00 | 4.00 |
| AA+ | 28.6% | 57.1% | 14.3% | | | | | | | | | | | | | | | | 7.00 | 7.00 |
| AA | 9.1% | 18.2% | 72.7% | | | | | | | | | | | | | | | | 11.00 | 11.00 |
| AA- | | 30.0% | 40.0% | 30.0% | | | | | | | | | | | | | | | 10.00 | 10.00 |
| Δ+ | | | 20.0% | 70.0% | | 10.0% | | | | | | | | | | | | | 10.00 | 10.00 |
| <u>X</u> A | | | 33.3% | 16.7% | 50.0% | | | | | | | | | | | | | | 6.00 | 6.00 |
| Ф В А- | | | | 14.3% | 14.3% | 42.9% | 28.6% | | | | | | | | | | | | 7.00 | 7.00 |
| BBB+ | | | | | | 50.0% | 50.0% | | | | | | | | | | | | 2.00 | 2.00 |
| ₹ BBB | | | | | | | 33.3% | 33.3% | | 33.3% | | | | | | | | | 3.00 | 3.00 |
| BBB- | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 |
| BB+ | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 |
| Beginning of Year (Average CY15-CY24) A + A + BBB + B | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 |
| BB- | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 |
| B+ | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 |
| В | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 |
| В- | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 |
| CCC-C | | | | | | | | | | | | | | | | | | | 0.00 | 0.00 |

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

Transition Rates – Financial Institutions vs. Corporates



| | Transition Rates | CY15 | CY16 | CY17 | CY18 | CY19 | CY20 | CY21 | CY22 | CY23 | CY24 |
|--------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | Upgrade Rate (%) | 11.8% | 13.2% | 7.9% | 9.8% | - | 2.4% | 4.3% | 8.0% | 2.0% | 9.1% |
| Financial | Downgrade Rate (%) | 2.9% | 5.3% | 2.6% | 2.4% | 7.3% | - | 2.1% | 4.0% | 8.0% | 3.6% |
| Institutions | Maintain Rate (%) | 85.3% | 81.6% | 89.5% | 87.8% | 92.7% | 97.6% | 93.6% | 88.0% | 90.0% | 87.3% |
| | Default Rate (%) | - | _ | _ | - | - | _ | _ | _ | - | - |
| | Upgrade Rate (%) | 25.5% | 12.5% | 6.8% | 16.3% | 9.9% | 11.2% | 16.1% | 14.6% | 8.7% | 11.3% |
| Cornoratos | Downgrade Rate (%) | 6.4% | 4.2% | - | - | 4.2% | 1.6% | 1.0% | 0.5% | 0.7% | 1.1% |
| Corporates | Maintain Rate (%) | 68.1% | 83.3% | 93.2% | 83.7% | 85.9% | 87.2% | 82.9% | 84.9% | 90.6% | 87.6% |
| | Default Rate (%) | - | - | - | - | - | - | _ | _ | - | - |

> Since CY15, financial institutions have exhibited greater stability overall in comparison to corporates.

Default Trends - CDRs



| | 1-Year | 2-Year | 3-Year | 4-Year | 5-Year | 6-Year | 7-Year | 8-Year | 9-Year | 10-Year |
|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| AA | 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% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| A | 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% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| AA | 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% | 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% | 0.0% | 0.0% |
| Α | 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% |
| BB | 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% | - |
| BBB | 0.0% | 0.0% | 0.0% | 0.0% | 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% | - | - |
| В | 0.0% | 0.0% | 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% | - | - | - |
| ВВ | 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% | - | - | - | - | - | - | - | - | - |
| В | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | - | - | - | - | - |
| CCC-C | - | - | - | - | - | - | - | - | - | - |
| Investment Grade (AAA- | | | | | | | | | | |
| BBB) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |

NOTE: "-" notation appears in one of two situations: (i) if the CDR for a rating grade happens to be exactly zero, or, (ii) if there is absence of data to have undergone maturity or "seasoning" for the purpose of CDR calculation.

[➤] No entity within PACRA's rated universe has experienced a default since the calendar year 2015.

Default Trends – Time to Default (since inception)



| CY24 | Time to defau | ılt <i>(in months)</i> |
|------------------|-----------------|------------------------|
| Rating Category | Initial Ratings | All Ratings |
| AAA | N/A | N/A |
| AA | N/A | 81 |
| А | 53 (7)* | 47 |
| BBB | 74 (3)* | 41 |
| BB | 81 (2)* | 17 |
| * Default Counts | | |

- ➤ Since inception to Dec 31, 2024, there have been 12 entity defaults in PACRA's rated portfolio
- > 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.



ANNEXURES

Glossary

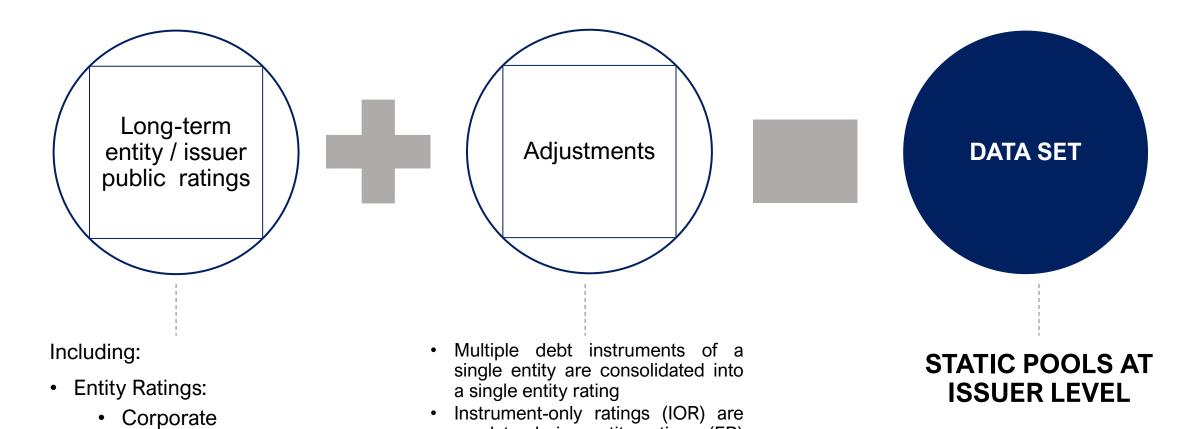


| Key Terms | Definition / Explanation |
|-----------------|---|
| Static Pool | Groupings of data that stay together in the group for the entire length and breadth of the measurement period of the pool. |
| Upgrade Rate | The rate of upward rating transition (Ceiling: Triple A "AAA"). |
| Downgrade 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. |

Study Inputs

Financial Institutions





used to derive entity ratings (ER)

as per the security structure and

Ratings emanating from one entity

substitution consolidated into one single data-

other clauses

(credit

entry

30

Static Pools



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

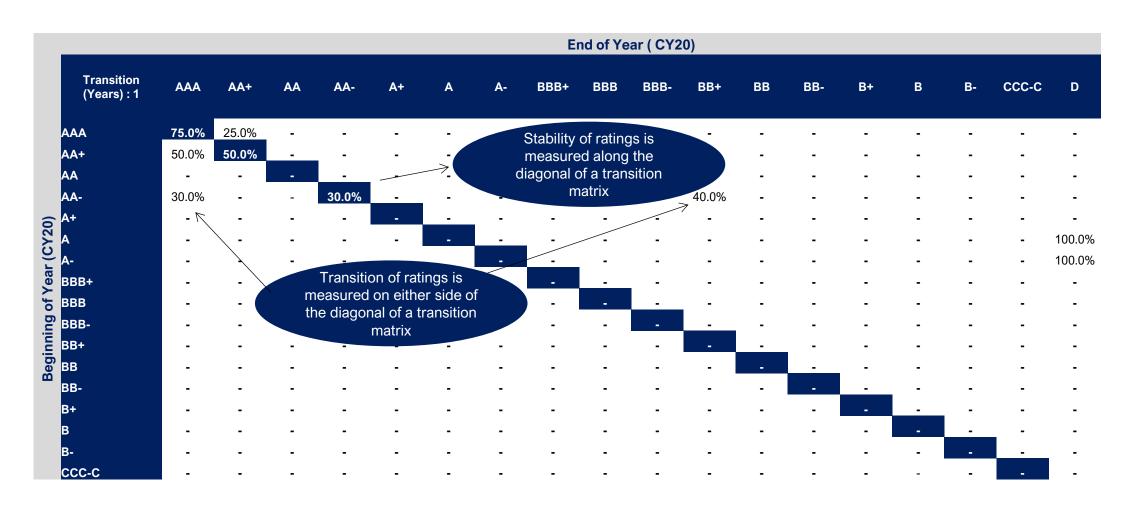
An initial rating of CY22 will form part of the next year (CY22) pool, if not withdrawn

Post-default withdrawals

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

Understanding Rating Transition Analysis





Understanding Default 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.

Regulatory Framework > SECP



SECP | Credit Rating Companies Regulations, 2016 | August 05, 2016 (As Amended September 19, 2022)

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.

Regulatory Framework > SBP



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

Best Practices Guidelines > ACRAA



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

ACRAA Explanation of Clause 3.8 -

- 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

Best Practices Guidelines > IOSCO



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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