

Default, Transition, and Recovery:

# 2022 Annual Taiwan Structured Finance Default And Rating Transition Study

April 27, 2023

## Key Takeaways

- There was one upgrade among Taiwan Ratings Corp. structured finance ratings in 2022.
- Among the 95 ratings assigned since the start of 2003, there have been five defaults, making the overall lifetime default rate 5.3%.
- The lifetime upgrade rate is 47.4%, and the lifetime downgrade rate is 11.6%.

The credit quality of structured finance securities rated by Taiwan Ratings Corp. slightly improved in 2022, with one upgrade and no downgrades during the year.

This study documents default and transition rates for structured finance securities--also referred to as "securitization notes" or "tranches"--rated by Taiwan Ratings Corp. It covers 95 long-term ratings from 32 Taiwan-originated structured finance transactions assigned ratings since 2003.

The statistics presented in this study should not be generalized to draw conclusions about the credit performance of other new or existing structured finance transactions, given the relatively small number of securities included in this study, its short time period, the concentration on certain securitized collateral types, and the limited number of defaults during the review period. For these reasons, comparisons between this study and similar studies may be misleading.

## One Upgrade In 2022

Of the two ratings outstanding as of Jan. 1, 2022, one remained stable through the year, while the other was raised (see table 1).

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Table 1

**Taiwan Ratings' Structured Finance Rating Transitions (2022)**

(%)

From/to	Beginning no. of ratings	twAAA	twAA	twA	twBBB	twBB	twB	twCCC	twCC	twC	D	NR
twAAA	1	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
twAA	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
twA	1	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
twBBB	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
twBB	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
twB	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
twCCC	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
twCC	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
twC	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NR--Not rated. N/A--Not applicable. Source: S&P Global Ratings Credit Research & Insights.

Both outstanding ratings at the start of 2022 were in the asset-backed securities (ABS) sector (see table 2). The diversity in outstanding collateral within Taiwanese structured finance has contracted over the past decade. In previous years, Taiwan Ratings Corp. structured finance ratings originated from the ABS commercial sector as well as ABS equipment, prime residential mortgage-backed securities (RMBS), and structured credit (SC) cash flow corporate bonds.

Table 2

**Taiwan Ratings' Structured Finance Transition And Default Summary (2022)**

By asset class

Asset class	Ratings (no.)	Stable (%)	Upgrades (%)	Downgrades (%)*	Defaults (%)
ABS Other	2	50	50	0	0
Overall	2	50	50	0	0

Note: Securities with ratings that migrated to NR over the period are classified based on the rating prior to NR. \*Including defaults. Source: S&P Global Ratings Credit Research & Insights.

**Ratings Show Stability Over Time**

To consider a longer time frame, we calculated a one-year weighted average rating transition matrix. For weighted average transitions, we calculated the individual transition rates of different static pools of ratings outstanding at the beginning of each calendar year from 2004 to 2022. We then created a single averaged matrix, weighted by the number of ratings in each static pool. On this basis, Taiwan Ratings Corp. structured finance ratings have maintained high one-year rates of upgrade, stability, and withdrawal across most rating categories, on average, compared with downgrades and defaults (see table 3).

Table 3

**Taiwan Ratings' Structured Finance Rating Transitions, One-Year Weighted-Average (2004-2022)**

(%)

From/to	twAAA	twAA	twA	twBBB	twBB	twB	twCCC	twCC	twC	D	NR
twAAA	64.55	2.73	0.91	0.00	0.00	0.00	0.91	0.00	0.00	0.00	30.91
twAA	8.97	57.69	0.00	0.00	1.28	0.00	2.56	0.00	0.00	1.28	28.21
twA	6.67	11.43	60.00	0.00	0.00	0.00	0.95	0.95	0.00	0.00	20.00
twBBB	2.74	2.74	15.07	67.12	0.00	0.00	1.37	1.37	0.00	0.00	9.59
twBB	0.00	0.00	50.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
twB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
twCCC	0.00	0.00	0.00	11.11	0.00	0.00	44.44	0.00	0.00	22.22	22.22
twCC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00
twC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NR--Not rated. N/A--Not applicable. Source: S&P Global Ratings Credit Research & Insights.

The one-year average stability rate (the proportion of ratings unchanged in the year and averaged across the calendar years from 2004 to 2022) indicates higher ratings tend to be more stable (see table 4).

Table 4

**Taiwan Ratings' Structured Finance Rating Transition Rates, One-Year Weighted-Average (2004-2022)**

By rating category

(%)	Stable	Upgrades	Downgrades*	Defaults
twAAA	95.45	0.00	4.55	0.00
twAA	79.49	14.10	6.41	1.28
twA	76.20	21.90	1.90	0.00
twBBB	68.49	28.77	2.74	0.00
twBB	0.00	100.00	0.00	0.00
twB	N/A	N/A	N/A	N/A
twCCC	33.33	22.22	44.44	22.22
twCC	0.00	0.00	100.00	100.00
twC	N/A	N/A	N/A	N/A

Note: Securities with ratings that migrated to NR over the period are classified based on the rating prior to NR. \*Including defaults. N/A—Not applicable. Source: S&P Global Ratings Credit Research & Insights.

We also calculate lifetime transition rates, where we take all the ratings we have assigned since 2003 and consider their transition from the original rating date to the end of 2022. These lifetime transitions show a similar pattern as the one-year average transition rates in table 4. From 2003 to

2022, among the 95 ratings we initially assigned, we subsequently raised, withdrew after full redemption, or made no changes to about 95%.

Table 5

**Taiwan Ratings' Structured Finance Rating Transitions, Original-To-Current (2003-2022)**  
(%)

From/to	Original no. of ratings	twAAA	twAA	twA	twBBB	twBB	twB	twCCC	twCC	twC	D	NR
twAAA	25	8.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00	88.00
twAA	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.88	94.12
twA	30	0.00	3.33	3.33	0.00	0.00	0.00	0.00	0.00	0.00	6.67	86.67
twBBB	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.55	95.45
twBB	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00
twB	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
twCCC	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
twCC	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
twC	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NR--Not rated. Source: S&P Global Ratings Credit Research & Insights.

**CLOs And CMBS Have Recorded The Most Lifetime Upgrades**

The overall lifetime default rate of Taiwan Ratings Corp. structured finance ratings dipped to 5.3% in 2022 from 5.4% in 2021 (see table 6). There were five defaults within two transactions in the 2003-2022 period.

The differences between default rates at each rating category are relatively minor for Taiwan Ratings Corp. ratings, and there is no clear pattern of higher ratings showing a lower default rate. However, this is likely due to the limited number of defaults and small sample sizes.

**Upgrade rates**

SC corporate loan collateralized loan obligations (CLOs) have the highest lifetime upgrade rate at 78.8%, followed by commercial mortgage-backed securities (CMBS) at 66.7%. The upgrades of CLOs stemmed from the quick accumulation of credit enhancement on the notes' sequential-pay structure within the sector. The CMBS upgrades generally owed to the transactions' robust tenant performance, even during times of economic stress, and the increase in property values.

Table 6

**Taiwan Ratings' Structured Finance Transition And Default Summary, Original-To-Current (2003-2022)**

**By asset class**

Asset class	Ratings (no.)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)
ABS commercial other	1	100.0	0.0	0.0	0.0
ABS consumer other	1	100.0	0.0	0.0	0.0

ABS equipment	6	50.0	50.0	0.0	0.0
ABS other	8	87.5	12.5	0.0	0.0
CMBS other	6	33.3	66.7	0.0	0.0
RMBS prime	10	70.0	30.0	0.0	0.0
SC cash flow CDO of CDO	9	11.1	0.0	88.9	44.4
SC cash flow corporate bond CBO	19	42.1	42.1	15.8	5.3
SC cash flow corporate loan CLO	33	21.2	78.8	0.0	0.0
SC other	2	100.0	0.0	0.0	0.0
Overall	95	41.1	47.4	11.6	5.3

Note: Securities with ratings that migrated to NR over the period are classified based on the rating prior to NR. \*Including defaults. Source: S&P Global Ratings Credit Research & Insights.

### **Stability rates**

The ABS and RMBS sectors have had higher rating stability rates, meaning fewer upgrades and downgrades, than most other asset classes over their lifetimes. This is primarily because of stable collateral performance, despite some economic uncertainty and capital market volatility in recent years. The more diversified collateral pools in these asset classes also helped reduce the impact of individual asset performance on portfolio credit quality.

### **Downgrade rates**

The highest lifetime downgrade rate, including defaults, belongs to the SC cash flow collateralized debt obligation (CDO) of CDO subsector at 88.9%.

### **Default rates**

From 2003 to 2022, there were five defaults across two transactions out of 95 long-term ratings, translating to a 5.3% default rate overall. The SC cash flow CDO of CDOs subsector has the highest lifetime default rate at 44.4%, while the SC cash flow corporate bond collateralized bond obligation (CBO) subsector follows with a default rate of 5.3%. We attribute the weaker credit performance of these subsectors largely to the credit quality deterioration of global corporate obligors in 2008 and 2009.

### **Transitions by vintage**

Subsectors' rating transition rates have varied by vintage year, or the year the transaction was issued (see table 7). Most transactions were originated in 2005 and 2006, and a majority of the defaults were from a single 2005 vintage transaction. In 2008, the only origination was an SC corporate bond CBO that defaulted, making this the only vintage with a 100% default rate.

Table 7

**Taiwan Ratings Corp. Structured Finance Transition And Default Summary, Original-To-Current (2003-2022)**

By vintage

Vintage	Ratings (no.)	Stable (%)	Upgrades (%)	Downgrades (%)*	Defaults (%)
2003	9	33.33	66.67	0.00	0.00
2004	17	41.18	58.82	0.00	0.00
2005	10	40.00	20.00	40.00	40.00
2006	16	37.50	37.50	25.00	0.00
2007	26	30.77	61.54	7.69	0.00
2008	1	0.00	0.00	100.00	100.00
2009	3	33.33	66.67	0.00	0.00
2010	3	66.67	33.33	0.00	0.00
2011	2	50.00	50.00	0.00	0.00
2012	0	N/A	N/A	N/A	N/A
2013	0	N/A	N/A	N/A	N/A
2014	2	100.00	0.00	0.00	0.00
2015	0	N/A	N/A	N/A	N/A
2016	2	100.00	0.00	0.00	0.00
2017	0	N/A	N/A	N/A	N/A
2018	0	N/A	N/A	N/A	N/A
2019	2	50.00	50.00	0.00	0.00
2020	0	N/A	N/A	N/A	N/A
2021	0	N/A	N/A	N/A	N/A
2022	2	100.00	0.00	0.00	0.00
Overall	95	41.05	47.37	11.58	5.26

Note: Securities with ratings that migrated to NR over the period are classified based on the rating prior to NR. \*Including defaults. N/A--Not applicable.  
Source: S&P Global Ratings Credit Research & Insights.

## Appendix: Terminology, Data Selection, And Calculation Approaches

This appendix explains the data, calculations, and terminology we use in this study.

### Issues included in this study

The study analyzes the rating histories of 95 Taiwan structured finance instruments that Taiwan Ratings Corp. first rated between 2003 and Dec. 31, 2022. The term "structured finance" in this report refers to asset-backed securities, commercial mortgage-backed securities, residential mortgage-backed securities, structured credit, and single-name synthetic transactions. For some analyses, we break these sectors into subsectors.

## **Vintage definition**

In this report, we classify a security's vintage based on the date on which we first assigned a rating. Usually this is close to the security's original issuance date. However, in some cases, we may first assign a rating to a security some time after closing.

## **Rating transitions**

Our rating transition statistics use a "static pool" approach. To calculate the transition statistics over a given period (or "transition window"), we consider the static pool of ratings outstanding at the beginning of that period. The transition statistics for that static pool of ratings are then based on the movements in ratings between the start and end of the transition window.

For instance, we calculate the 2022 transition rates by determining the ratings on every security outstanding at the start of 2022 and determining the ratings on those same securities at the end of 2022. For "original-to-current" transitions, we give each rating under consideration its own transition window, from the date we originally assigned the rating to the end of 2022. We then calculate statistics such as upgrade, downgrade, and stability rates, equivalent to the proportion of securities in the static pool with ratings that moved up, moved down, or remained the same, respectively, over the transition window.

During this process, we count each security only once, even if the security experienced more than one rating change during the transition window observed. In other words, we use the ratings on a security at the start and end of the transition window to calculate the transition rates, disregarding any interim rating changes.

## **Rating modifiers**

We use rating modifiers ('+' and '-') to calculate the upgrade, downgrade, and stability rates quoted in the text, tables, and charts throughout this study. However, the transition matrices in this report show only the full rating categories for practical reasons. For example, we count transitions to 'twAA+' from 'twAA' as upgrades and to 'twBBB-' from 'twBBB+' as downgrades in the transition statistics we cite in this study. However, in the transition matrices, these transitions would appear in the cells corresponding to a stable rating category classification, such as to 'twAA' from 'twAA' or to 'twBBB' from 'twBBB'.

## **Rating discontinuance or withdrawal**

We may discontinue ratings when, for example, a rated obligation's payments have been made in full in accordance with its terms or when a rated issue matures. Ratings may also be withdrawn, for example, because of a lack of sufficient information of satisfactory quality or at the issuer's request. In these cases, the rating may change to not rated (NR).

When we withdraw or discontinue ratings within the transition window under consideration, we may either derive our reported statistics by classifying the rating transition as a move to NR (the "NR-included" approach), or--for some other analyses--we may classify the transition as a move to the last non-NR rating before withdrawal or discontinuance (the "NR-adjusted" approach). In the text of this study, when we refer to upgrade and downgrade rates, for example, we use the latter approach. In the tables and charts, we clarify the approach used in the footnotes. We do not

include a security with a withdrawn rating at the beginning of a transition window in the transition and default rate calculations for that period.

### **Treatment of 'D' ratings**

Counts of defaults and default rate statistics in this report are based on securities with ratings we lowered to 'D'. For the purposes of this report, when the rating on a security has moved to 'D', we consider this a terminal state and do not include such a security in any transition windows that start on a subsequent date.

In practice, however, some securities with ratings that have migrated to 'D' may later be assigned a different rating. This can occur, for example, if the defaulted security is subsequently restructured to different terms, such as a lower coupon. In these cases, we treat the security's post-default rating history as if it were for a new security, beginning from the date that the rating changed from 'D'. Where we segment statistics by vintage, however, we continue to base the vintage on the date we originally assigned a rating to the security.

### **Weighted-average transition and default rate calculation**

For weighted average transition rates (including default rates), we calculate the individual transition rates for different static pools. We then calculate a single average transition rate, weighted by the number of ratings in each static pool. We use this technique to determine the one-year weighted average transition rates, for example, by analyzing different static pools over different one-year periods and aggregating.

### **Related Criteria**

- General Criteria: Methodology For National And Regional Scale Credit Ratings, June 25, 2018

### **Related Research**

- Asia-Pacific: It's A Mixed Bag For Inflation And Rate Implications, [www.spglobal.com/ratings](http://www.spglobal.com/ratings), Feb. 7, 2023
- Taiwan 2023 Credit Outlook, Dec. 21, 2022
- Economic Outlook Asia-Pacific Q1 2023: Global Slowdown Will Hit, Not Halt, Growth, [www.spglobal.com/ratings](http://www.spglobal.com/ratings), Nov. 28, 2022
- 2021 Annual Taiwan Structured Finance Default And Rating Transition Study, [www.spglobal.com/ratings](http://www.spglobal.com/ratings), May 25, 2022
- Taiwan Ratings Raised To 'AA+/A-1+' On Strong Economic Performance; Outlook Stable, [www.spglobal.com/ratings](http://www.spglobal.com/ratings), April 29, 2022
- Taiwan Ratings' Ratings Definitions, Nov. 11, 2021
- Glossary Of Taiwan Securitization Terms, April 30, 2010

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The use of the term "methodology" in this article refers to data aggregation and calculation methods used in conducting the research. It does not relate to S&P Global Ratings' methodologies, which are publicly available criteria used to determine credit ratings.

This report does not constitute a rating action.

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