

Default, Transition, and Recovery:

2021 Annual Taiwan Structured Finance Default And Rating Transition Study

May 26, 2022

Key Takeaways

- There were no rating actions among Taiwan structured finance ratings in 2021.
- We have assigned 93 structured finance ratings since the beginning of 2003. Of these 93 ratings, there were five defaults, making the overall lifetime default rate 5.4%.
- The lifetime upgrade rate is 47.3%, and the lifetime downgrade rate is 11.8%.

The credit quality of structured finance securities rated by Taiwan Ratings Corp. were stable in 2021. There were no upgrades or downgrades during the year.

This S&P Global Ratings Research study documents default and transition rates for structured finance securities--also referred to as securitization notes or tranches--rated by Taiwan Ratings Corp. The study covers 93 long-term ratings from 31 Taiwan-originated structured finance transactions that we have rated 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 because of the relatively small number of securities included in this study, short time period, concentration on certain securitized collateral types, and limited number of defaults during the review period. For these reasons, comparisons between this study and other similar studies may be misleading.

RATINGS PERFORMANCE ANALYTICS

Nick Kraemer, FRM

New York
+1-212-438-1698
nick.kraemer
@spglobal.com

Brenden J Kugle

Centennial
+1-303-721-4619
brenden.kugle
@spglobal.com

SECONDARY CONTACT

Caroline Shih

Taipei
+886-2-2175-6833
caroline.shih
@spglobal.com
caroline.shih
@taiwanratings.com.tw

RESEARCH CONTRIBUTOR

Lyndon Fernandes

Mumbai
CRISIL Global Analytical Center,
an S&P affiliate

Ratings Remained Stable In 2021

Both of the ratings outstanding as of Jan. 1, 2021, remained stable through the year (see table 1).

Table 1

Taiwan Ratings' Structured Finance Rating Transitions (2021) (%)

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	0.00	100.00	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.

Both of the outstanding ratings at the start of 2021 were in the asset-backed securities (ABS) sector (see table 2). The diversity in outstanding collateral has contracted over the past decade. In previous years, outstanding ratings in Taiwan were originated within 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 (2021)

By asset class

Asset class	Ratings (no.)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)
ABS Other	2	100%	0%	0%	0%
Overall	2	100%	0%	0%	0%

*Including defaults. Securities whose ratings migrated to 'NR' over the period are classified based on their rating prior to 'NR'. Source: S&P Global Ratings.

Stability Correlated With Ratings Over Time

Considering a longer time frame, we calculated the 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 2021. We then created a single averaged matrix, weighted by the number of ratings in each static pool. On this basis, Taiwan structured finance ratings have maintained high one-year rates of upgrade, stability, or withdrawal across most rating categories, on average, compared to downgrades and defaults (see table 3).

Table 3

Taiwan Ratings' Structured Finance Rating Transitions, One-Year Weighted-Average (2004-2021) (%)

From/to	twAAA	twAA	twA	twBBB	twBB	twB	twCCC	twCC	twC	D	NR
twAAA	64.22	2.75	0.92	0.00	0.00	0.00	0.92	0.00	0.00	0.00	31.19
twAA	8.97	57.69	0.00	0.00	1.28	0.00	2.56	0.00	0.00	1.28	28.21
twA	6.73	10.58	60.58	0.00	0.00	0.00	0.96	0.96	0.00	0.00	20.19
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.

The one-year average stability rate (the proportion of ratings unchanged in the year and averaged across the calendar years from 2004 to 2021) indicates higher ratings tend to have more ratings stability (see table 4).

Table 4

Taiwan Ratings' Structured Finance Rating Transition Rates, One-Year Weighted-Average (2004-2021) (%)

By rating category

	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)
twAAA	95.4%	N/A	4.6%	0.0%
twAA	79.5%	14.1%	6.4%	1.3%
twA	76.9%	21.2%	1.9%	0.0%
twBBB	68.5%	28.8%	2.7%	0.0%
twBB	0.0%	100.0%	0.0%	0.0%
twB	N/A	N/A	N/A	N/A
twCCC	33.3%	22.2%	44.4%	22.2%
twCC	0.0%	0.0%	100.0%	100.0%
twC	N/A	N/A	N/A	N/A

*Including defaults. Securities whose ratings migrated to 'NR' over the period are classified based on their rating prior to 'NR'. N/A--Not applicable. Source: S&P Global Ratings.

We also calculate lifetime transition rates, where we take all the ratings we have assigned beginning in 2003, and consider their transition from the original rating date to the end of 2021. These lifetime transitions show a similar pattern to the one-year average transition rates shown in table 4. From 2003 to 2021, among the 93 ratings we 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 (2003-2021) (%)

From/to	Original no. of ratings	twAAA	twAA	twA	twBBB	twBB	twB	twCCC	twCC	twC	D	NR
twAAA	24	4.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.17%	91.67%
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	29	0.00%	0.00%	3.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.90%	89.66%
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. N/A--Not applicable. Source: S&P Global Ratings.

CLOs And CMBS Have Recorded The Most Life Upgrades

The overall lifetime default rate of our Taiwan structured finance ratings remained at 5.4% in 2021 (see table 6). There have been five defaults within two transactions from 2003-2021.

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

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%.

Table 6

Taiwan Ratings' Structured Finance Transition And Default Summary, Original-To-Current (2003-2021)

By asset class

Asset class	Ratings (no.)	Stable (%)	Upgrades (%)	Downgrades* (%)	Defaults (%)
ABS Commercial Other	1	100.00%	0.00%	0.00%	0.00%
ABS Consumer Other	1	100.00%	0.00%	0.00%	0.00%
ABS Equipment	6	50.00%	50.00%	0.00%	0.00%
ABS Other	6	100.00%	0.00%	0.00%	0.00%
CMBS Other	6	33.33%	66.67%	0.00%	0.00%

Default, Transition, and Recovery: 2021 Annual Taiwan Structured Finance Default And Rating Transition Study

RMBS Prime	10	70.00%	30.00%	0.00%	0.00%
SC Cash Flow CDO of CDO	9	11.11%	0.00%	88.89%	44.44%
SC Cash Flow Corporate Bond CBO	19	42.11%	42.11%	15.79%	5.26%
SC Cash Flow Corporate Loan CLO	33	21.21%	78.79%	0.00%	0.00%
SC Other	2	100.00%	0.00%	0.00%	0.00%
Overall	93	40.86%	47.31%	11.83%	5.38%

*Including defaults. Securities whose ratings migrated to 'NR' over the period are classified based on their rating prior to 'NR'. Source: S&P Global Ratings.

The upgrades of CLOs were because of the quick accumulation of credit enhancement on the notes' sequential-pay structure within the sector. The CMBS upgrades were generally owing to the transactions' robust tenant performance, even during times of economic stress, and the increase in property values.

The ABS and RMBS sectors had higher rating stability rates than most other asset classes, meaning fewer upgrades and downgrades over their lifetimes. This has primarily been 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 to reduce the impact of individual asset performance on portfolio credit quality.

The highest lifetime downgrade rate, including defaults, belongs to the SC Cash Flow Collateralized Debt Obligation (CDO) of CDO at 88.9%.

From 2003 to 2021, there were five defaults across two transactions, out of the 93 long-term ratings we assigned, translating to a 5.4% default rate overall. The SC Cash Flow CDO of CDOs subsector has the highest lifetime default rate of 44.4%, while the SC Cash Flow Corporate Bond Collateralized Bond Obligation (CBO) subsector has a default rate of 5.3%. We attribute the weaker credit performance of these subsectors largely to the credit quality deterioration of referenced global corporate obligors during 2008 and 2009.

Subsectors' rating transition rates varied by vintage year, and the year the transaction was issued (see table 7). Most transactions were originated in 2005 and 2006, and all the defaults were in a single 2005 vintage transaction. The 2008 default of a SC corporate bond CBO, which was also the only origination in 2008, makes it the only vintage with a 100% default rate.

Table 7

Taiwan Ratings' Structured Finance Transition And Default Summary, Original-To-Current (2003-2021)

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	100.00%	0.00%	0.00%	0.00%
2020	0	N/A	N/A	N/A	N/A
2021	0	N/A	N/A	N/A	N/A
Overall	93	40.86%	47.31%	11.83%	5.38%

*Including defaults. Securities whose ratings migrated to 'NR' over the period are classified based on their rating prior to 'NR'. N/A--Not applicable.
Source: S&P Global Ratings.

Related Criteria

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

Related Research

- Asia-Pacific Economic Risks, Thy Name Is Inflation, www.standardandpoors.com, March 28, 2022
- Robust Economy Underpins Stable Credit Outlook For Taiwan In 2022, Jan. 6, 2022
- Taiwan Ratings' Ratings Definitions, Nov. 11, 2021
- 2020 Annual Taiwan Structured Finance Default And Rating Transition Study, www.standardandpoors.com, May 27, 2021
- Glossary Of Taiwan Securitization Terms, April 30, 2010

(Unless otherwise stated, these articles are published on www.taiwanratings.com)

Appendix: Terminology, Data Selection, And Calculation Approaches

This appendix discusses the data and calculations and explains the terminology we use in this report.

Issues included in this study

The study analyzes the rating histories of 93 Taiwan structured finance instruments that Taiwan Ratings Corp. first rated between 2003 and Dec. 31, 2021. The term "structured finance" in this report refers to ABS, CMBS, RMBS, structured credit, and single-name synthetic transactions. For some analyses, we break down these sectors further into subsectors.

Vintage definition

In this report, we classify securities' vintages 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 sometime 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 2021 transition rates by determining the ratings on each security outstanding at the start of 2021 and determining the ratings on those same securities at the end of 2021. For "original-to-current" transitions, we give each rating under consideration its own transition window, from the date we originally assigned a rating to the end of 2021. We then calculate statistics such as upgrade, downgrade, and stability rates, which are equivalent to the proportion of securities in the static pool whose ratings moved up, 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 being observed. In other words, we use the rating 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 and tables throughout this study. However, the transition matrices in this report show only the less granular full rating categories for practical reasons. In other words, we count transitions such as 'twAA' to 'twAA+' as an upgrade and 'twBBB+' to 'twBBB-' as a downgrade in the transition statistics we cite in this report. However, in the transition matrices, these transitions would appear in the cells corresponding to a stable rating category classification, such as 'twAA' to 'twAA', or 'twBBB' to '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 'NR' (not rated).

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 report, when we refer to upgrade and downgrade rates, for example, we use the latter approach. In the tables, 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 whose 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, for example, include such a security in any transition windows that start on a subsequent date.

In practice, however, some securities whose ratings have migrated to 'D' may later once again 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 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, for example, to determine the one-year weighted-average transition rates by analyzing and aggregating different static pools over different one-year periods.

This report does not constitute a rating action.

Copyright © 2022 by Taiwan Ratings Corporation (TRC). All rights reserved.

No content (including ratings, credit-related analyses and data, valuations, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse engineered, reproduced or distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of TRC. The Content shall not be used for any unlawful or unauthorized purposes. TRC and any third-party providers, as well as their directors, officers, shareholders, employees or agents (collectively TRC Parties) do not guarantee the accuracy, completeness, timeliness or availability of the Content. TRC Parties are not responsible for any errors or omissions (negligent or otherwise), regardless of the cause, for the results obtained from the use of the Content, or for the security or maintenance of any data input by the user. The Content is provided on an "as is" basis. TRC DISCLAIMS ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall TRC be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs or losses caused by negligence) in connection with any use of the Content even if advised of the possibility of such damages.

Credit-related and other analyses, including ratings, and statements in the Content are statements of opinion as of the date they are expressed and not statements of fact. TRC's opinions, analyses and rating acknowledgment decisions (described below) are not recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security. TRC assumes no obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. TRC does not act as a fiduciary or an investment advisor except where registered as such. While TRC has obtained information from sources it believes to be reliable, TRC does not perform an audit and undertakes no duty of due diligence or independent verification of any information it receives. Rating-related publications may be published for a variety of reasons that are not necessarily dependent on action by rating committees, including, but not limited to, the publication of a periodic update on a credit rating and related analyses.

To the extent that regulatory authorities allow a rating agency to acknowledge in one jurisdiction a rating issued in another jurisdiction for certain regulatory purposes, TRC reserves the right to assign, withdraw or suspend such acknowledgement at any time and in its sole discretion. TRC disclaims any duty whatsoever arising out of the assignment, withdrawal or suspension of an acknowledgment as well as any liability for any damage alleged to have been suffered on account thereof.

TRC keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of TRC may have information that is not available to other TRC business units. TRC has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

TRC receives compensation for its solicited ratings and certain analyses, normally from issuers, originators, arrangers, or underwriters of securities or from obligors. TRC reserves the right to disseminate its opinions and analyses. TRC's public ratings and analyses are made available on its Web sites, www.taiwanratings.com (free of charge), and rs.taiwanratings.com.tw (subscription), and may be distributed through other means, including via TRC publications and third-party redistributors. Please click [here](#) for any other conflict of interests that may affect the credit rating as requested by the regulator.