Rating Performance in Structured Finance –

Summary of 2017 and Aggregated

Special Report I March 2018

From time to time Midroog publishes special reports related to specific sectors or issuers. The special reports are not rating reports and/or rating methodologies from the aspect of their content or intent and do not intend to change assessment methods described in the methodological reports. In general, special reports are intended to: 1) publish Midroog views on certain issuers specific concerns and developments; 2) to describe macroeconomic or sector trends and to indicate the direction of effect on the ratings (for example: a change in demand in a certain sector, legislative or regulatory changes); 3) to explain a certain rating process in order to help investors understand how the rating was assigned, including how certain trends were taken into account in a rating.

Rating Performance of Structured Finance –

Summary of 2017 and Aggregated

Preface

The objective of this report is to present the performance of Midroog's ratings in structured finance in 2017 and cumulatively since beginning its activity as a rating company. The report includes the rate of rating transitions (transition matrixes) at the annual basis and cumulative on an annual basis, the change in the distribution of ratings and the rating outlooks, as well as the events of default/impaired debt[1] in the series that Midroog rates. In addition, a rating accuracy measure is presented, reflecting the average position of the default events along the rating scale[2] (Average Position - in the range between 0 and 1). This measure reflects the ordinal power of the rating and measures the location of the impaired debt ratings in the distribution of the ratings relative to non-impaired debts.

Midroog collects and publishes the rating changes and the rating accuracy measures in order to create transparency with regard to rating performance. In this context, note that the sample from some of the rating categories is relatively limited and therefore isolated observations may skew the results. The data presented below relate to all the structured finance series. In order to present certain data, additional classifications were made in the series.

In this report, the number of the series is defined as the number of active series that Midroog rates at the end of the calendar year[3]. The rated series include public and private ratings. Corporate debt ratings, financial institutions and infrastructure and project financing are not included in the data presented in this report[4].

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[1] According to Midroog's definition of default and impaired debt in "Rating Scales and Definitions" on the Midroog web site.
[2] The methodology for calculating the accuracy measure is presented in Appendix 2.
[3] Rating performance reports for corporates, financial institutions and ratings performance for project finance can be viewed on Midroog's website.
[4] You are welcome to see the rating performance report on corporates and finance institutions and project financing rating performance on Midroog's website.

Rating Distribution

As of the end of 2017, Midroog rated about 37 series of issuers in the field of structured finance and financial instruments. The median rating of the structured finance series is Aaa1.il (without Managed Index Linked Certificates (or MILCs and deposit notes Aa3.il).

For the purpose of presenting the data in this report, the assets are classified as follows:

- ABS[5] - A bond backed by assets. For the purpose of the analysis below in the report, this type of asset includes transactions backed by residential mortgages, transactions backed by income from commercial real estate assets CMBS[6] such as: housing complexes and shopping malls, as well as Whole Business Securitization, transactions backed by car loans, transactions backed by check clearing, transactions backed by equipment leasing, transactions backed by reverse mortgages.

- CDOs[7] - Collateralized Debt Obligations (such as a bonds portfolio).

- Financial instruments of the following types: deposit notes, Managed Index Linked Certificates and Notes. The Notes ratings included in this category refer to ratings marked with the letters ILC (Index Linked Certificate). Debt back-to-back bonds are rated according to the credit risk of the underlying debt, classified in the database as structured instruments. As of the end of December 2017, there were no Notes ratings by Midroog.

- Structured Instruments - CLN[8] instruments, Funded CDS[9], debt back-to-back securities are rated according to the credit risk of the underlying debt.

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[5] Asset Backed Securities.
[6] Commercial Mortgage Backed Securities.
[7] Collateralized Debt Obligation
[8] Credit Linked Notes.
[9] Funded Credit Default Swap.

The following chart shows the distribution of rated series in the structured finance sector, by category, at the end of 2017:

Distribution of Structured Financing Series by Category, December 2017
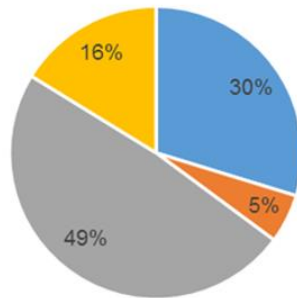
The chart shows that as of year-end 2017, most of the structured financing series are asset backed bonds (ABS), 40%; MILCs and deposit notes, making up 37% of the series, while 17% are structured instruments and 6% are CDOs.

The following charts show the distribution of series ratings in structured finance. In the right-hand chart, the distribution of series ratings for the end of 2017 is compared to the end of 2016. The left-hand chart shows the distribution of the structured finance series' ratings, excluding MILCs and deposit notes, in these years:
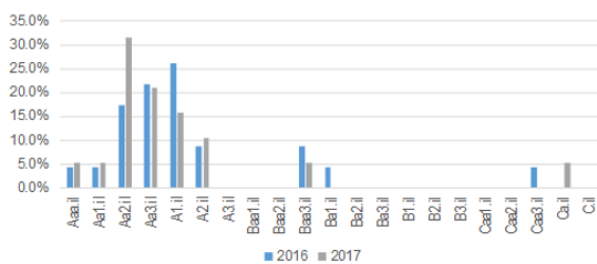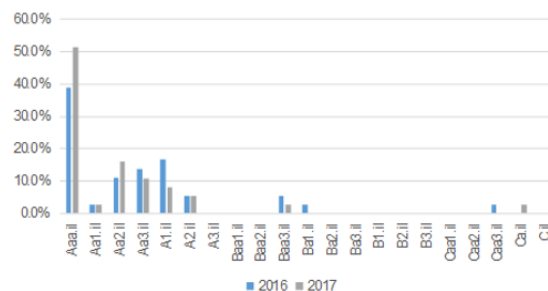
The right-hand chart shows that the proportion of the series rated Aaa.il rose in 2017 in relation to the end of 2016, because of the addition of new ratings of deposit notes series.

The proportion of Aa2.il ratings also rose in 2017 compared with year-end 2016. This increase was also due to the addition of new ratings of asset-backed bonds to this rating level.

The proportion of Aa3.il ratings decreased slightly in 2017 compared with year-end 2016 due to the withdrawal of a series rating.

The proportion of A1.il ratings dropped in 2017 compared with year-end 2016 because of rating withdrawals at this rating level.

The proportion of Baa3.il and Ba1.il ratings dropped in 2017 compared with year-end 2016 because of rating withdrawals.

A single rating transition was recorded in 2017 among the structured finance ratings, from Caa3.il to Ca.il.

The left-hand chart shows that most of the structured finance series rated Aaa.il are deposit note series and MILCs.

A summary of rating transitions is presented in the transition tables below in this report.

The following charts describe the distribution of ratings by rating group, by category, and the number of series rated in each sub-division. Note that the growth trend in structured finance ratings until the crisis, and the drastic drop in the number of ratings of this sort with the onset of the crisis, is similar to trends elsewhere in the world.

ABS

Distribution of ABS Series by Rating Groups, 2007-2017
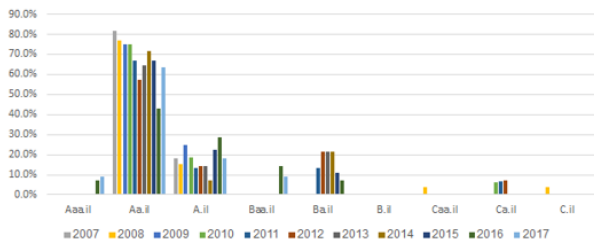
Number of ABS Series by Rating Groups, 2007-2017
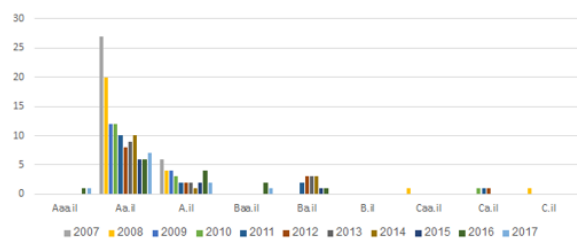
CDOs

Distribution of CDOs Series by Rating Groups, 2007-2017
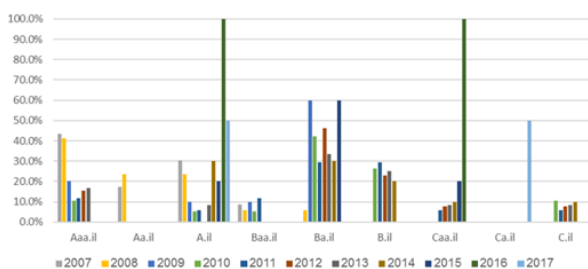
Number of CDOs Series by Rating Groups, 2007-2017
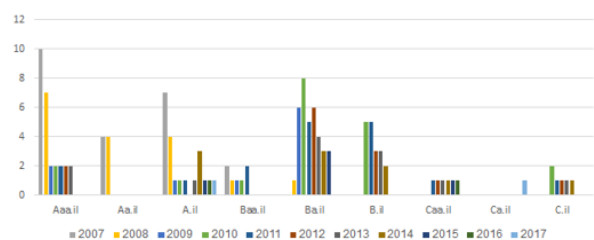
MILCs, Deposit Notes and Notes

Distribution of MILCs & Deposit Notes and Notes
by Rating Group, 2007-2017
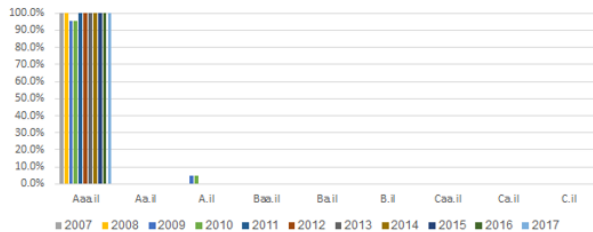
Number of MILCs & Deposit Notes and Notes
by Rating Group, 2007-2017
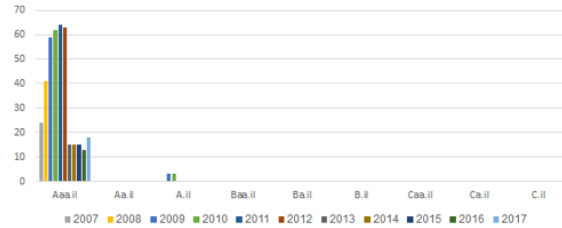
Structured Instruments

Distribution of Structured Instruments Series
by Rating Group, 2007-2017
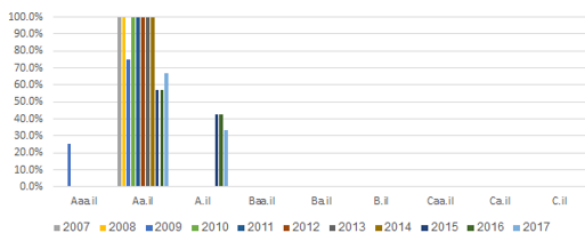
Number of Structured Instruments Series
by Rating Groups, 2007-2017
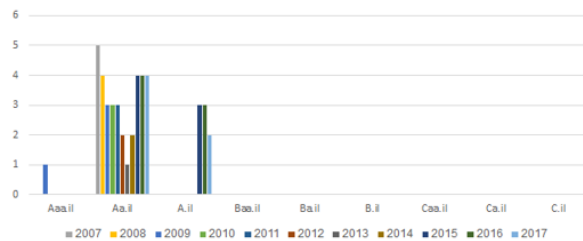
Details of the rating transitions between the categories are presented in Midroog's transition matrix below in this report.

Distribution of Rating Outlook and Credit Reviews

Rating outlook is Midroog's assessment of the expected direction of the rating in the medium term. The rating outlook is divided into four categories: positive, stable, negative or developing. Stable outlook reflects low expectation of a rating change in the medium term. A positive, negative or developing outlook reflects higher expectation of change in the medium term.

When a rating is placed under Credit Review (CR), it means that a possibility of changing the rating in the short term is evaluated. The rating may be placed on review for upgrade, downgrade and in some cases direction uncertain. The conclusion of the rating review may result in rating upgrade, rating downgrade, or confirmation of the rating. Ratings under CR are sometimes referred to as being on a "watch list".

In general, a rating outlook is not assigned in structured finance ratings unless it is a financial instrument where the outlook is derived from the rating outlook of the underlying asset (for instance: credit risk of a benchmark entity in the CLN). If necessary, a structured finance rating may be placed in Credit Review.

Following are the proportion of the series that were put under CR with negative implications between 2006 and 2017. The data are for the end of each of the years. In these years, no structured finance series was placed in CR with positive implications or with uncertain direction. As of the end of 2017, there were two structured finance series under Credit Review with negative implications.

ABS

Rate of ABS Series in Credit Review for possible downgrade, 2006-2017
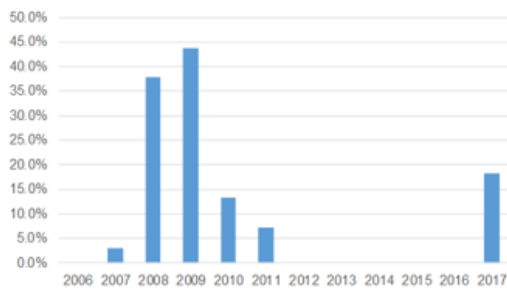
No ABS series were placed on CR between 2012 and 2016. In 2008-2009, a relatively high rate of the series were placed on review, due to decrease in residual value in the leasing market, as well as the Dorent securitization that were transferred to a CR due to the condition of the service provider of the transaction, who entered "Chapter 11". In 2017, two series in structured finance were put under CR with negative implications.

CDOs

Rate of CDOs in Credit Review for possible downgrade, 2006-2017

In 2008 and 2009, the rate of CDOs placed in CR rose significantly, due to the deterioration in the quality of the underlying assets backing the transactions, which were also expressed in rating downgrades of these series. Rating transitions of the CDOs are shown in the transitions matrix later on in this report.

Structured Instruments

Rate of Structured Instruments in
Credit Review for possible downgrade, 2006-2017

The proportion of structured finance instruments under CR with negative implications is relatively high, and fluctuates. Note that the sample of structured finance series that were in CR has been relatively limited over the years, ranging between one series to three in different years.

MILCs, Deposit Notes and Notes

No series of MILCs or deposit notes were placed in CR between 2006 and 2017 and there were no rating changes in these series.

Transition Matrixes[10]

Midroog collates information on changes in rating of the years 2004-2017, based on a database that accumulated gradually during its years of operation. Each series is included in the database according to the number of years it was rated. For example, a series rated from 2004 to 2017 is counted in the database 13 times. For each calendar year the database has the last rating of the series. If the rating changed several times over a single year, only the last observation at the end of the calendar year will be added to the database.

The total number of observations for all the rating groups in <u>structured finance</u> up to the relevant end-year points (for the years 2005-2016) is about 812. With the addition of rating withdrawals and impaired debt up to the end of 2016, the total number of observations used to calculate the data (including rating withdrawals and impaired debts) for the years 2004-2017 was about 1,028.

In MILCs, deposit notes and structured instruments rated ILC, there were about 397 observations in all the rating groups to the relevant cross-section points (at the ends of the years 2005-2016) and about 484 observations that were used to calculate the data (including rating withdrawals and impaired debts) for the ends of the years 2004-2017.

In ABS, there were about 219 observations in all the rating groups to the relevant points (for the ends of the years 2005-2016) and approximately 287 observations that were used to calculate the data (including rating withdrawals and impaired debts) for the ends of the years 2004-2017.

In CDOs, about 151 observations in all the rating groups to the relevant points (for the ends of the years 2005-2016) and about 203 observations used to calculate the data (including rating withdrawals and impaired debts) for the ends of the years 2004-2017.

In structured instruments, there were about 45 observations in all the rating groups to the relevant points (for the ends of the years 2005-2016) and 56 observations that were used to calculate the data (including rating withdrawals and impaired debts) for the ends of the years 2004-2017.

Note that in some of the structured finance series there are relatively few observations and that up to the end of 2012, there is a dominance of MILCs series in the structured finance sector for which there were no rating changes, therefore the transition matrix is also presented without MILCs and deposit notes. In addition, in order to estimate the performance and stability of the rating, by classification,

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[10] In calculating the transition matrixes, the following updates were made compared with previous years: updates to the database as detailed in the section on the distribution of ratings.

separate transition matrixes are presented for ABS, CDOs, MILCs, certificates of deposit notes and ILC rated instruments, as well as structured instruments.

To illustrate, the meaning of the data appearing in the cumulative transition table that approximately 78% of the ratings of the series rated Aa3.il remained unchanged in the range of a year, the ratings of about 5% of the series was downgraded and the ratings of about 14% of the series were withdrawn. The formula for calculating the transition rate is presented in Appendix 1 to this report.

Withdrawn (WR) Column

The WR column represents the series for which monitoring terminated after their rating. Principal circumstances for termination are: complete repayment of all the rated debt, debt arrangement/bankruptcy of the issuer, insufficiency/deficiency of information that does not allow effective evaluation of creditworthiness, or a request from the issuer to withdraw the rating of its obligations.

When calculating the marginal transitions rate in the transitions matrix without rating withdrawals (WR), ratings in which withdrawal occurred are not factored in at all, but only the last rating before the rating withdrawal. The cross-section periods for the purposes of calculating the transitions are the end of the calendar year. Therefore, the last rating factored in for an issuer whose rating has terminated will be the rating at the end of the calendar year prior to the rating termination. The formula for calculating the adjustment appears in Appendix 1 of this report. Appendix 3 shows the transition tables adjusted for WR.

Impaired Column

Similarly to estimation of the annual rate of transitions, the Impaired column shows the proportion of the series that became impaired debt series during the estimation period, out of the total number of series at the given rating level at the end of the previous calendar year and not necessarily with respect to the last rating prior to the impairment event.

Cases in which the rated entity asks that Midroog withdraw the rating due to an inability to meet its obligations were measured as impairment events and are shown in the Impaired column.

In addition, other rating transitions or rating withdrawals that occurred to the impaired series on impairment event and afterwards are not taken into account in the transitions matrix, but only from the year following the impairment date, as long as that rating exists.

It should be noted that in some years the Impaired sample is relatively small, so that individual observations may skew the results. In addition, in some of the impairment events, the impairment occurred less than one year from the date of the initial rating (usually in a new rating of a series that had been impaired in the past), so there is no relevant cut off point to examine the transition of the annual rating for calculation of the transition matrix. However, events of this type are presented in the list of impaired debts and are used to calculate the rate of the impaired debt as specified in the Accuracy Measure section below in this report.

Note also that the sample of the series in the various rating groups is small and therefore individual observations may have a significant effect on rating performance. Specifically, the sample of the series at the low end of the rating scale is also small and mainly reflects the rating transitions of series that were classified as impaired.

Transition Matrixes: Structured Finance, 2004-2017

Annual Aggregated Transition Table, 2004-2017

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	WR	Impaired
Aaa.il	**83%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**15%**	**1%**
Aa1.il	2%	**71%**	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	**15%**	**6%**
Aa2.il	0%	1%	**76%**	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**17%**	**4%**
Aa3.il	0%	0%	0%	**78%**	5%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**14%**	**0%**
A1.il	0%	0%	0%	0%	**40%**	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**50%**	**5%**
A2.il	0%	0%	0%	0%	4%	**71%**	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	**8%**	**12%**
A3.il	0%	0%	0%	0%	0%	11%	**33%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**33%**	**22%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	33%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**33%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**50%**	13%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**13%**	**0%**
Ba1.il	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	**73%**	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	**20%**	**2%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	**0%**	0%	33%	0%	0%	0%	0%	0%	0%	0%	**33%**	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	**40%**	0%	20%	0%	0%	0%	0%	0%	0%	**20%**	**0%**
B1.il	0%	0%	0%	0%	0%	0%	7%	0%	0%	0%	0%	0%	7%	**60%**	0%	0%	7%	0%	0%	0%	0%	**20%**	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	**50%**	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	100%	0%	0%	0%	0%	**0%**	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	100%	0%	0%	**0%**	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**	**100%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**60%**	20%	0%	**20%**	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**67%**	0%	**33%**	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**57%**	**43%**	**0%**

Annual Transition Table, 2017

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	WR	Impaired
Aaa.il	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa1.il	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa2.il	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa3.il	0%	0%	0%	**80%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**20%**	**0%**
A1.il	0%	0%	0%	0%	**33%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**67%**	**0%**
A2.il	0%	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
A3.il	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**50%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**50%**	**0%**
Ba1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**100%**	**0%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	**0%**	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**	**0%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	100%	0%	**0%**	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	**0%**	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**	**0%**

*The percentages shown in the tables are rounded to a whole percent, without adjustment to sum up the table rows to 100%.

Transition Matrixes for Structured Finance, 2004-2017 - Without MILCs and Deposit Notes

Annual Aggregated Transition Table (2004-2017) - structured finance w/o MILCs and deposit notes

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	WR	Impaired
Aaa.il	**64%**	4%	0%	0%	0%	0%	0%	0%	0%	0%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**18%**	**6%**
Aa1.il	2%	**71%**	4%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**15%**	**6%**
Aa2.il	0%	1%	**76%**	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**17%**	**4%**
Aa3.il	0%	0%	0%	**78%**	5%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**14%**	**0%**
A1.il	0%	0%	0%	0%	**40%**	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**50%**	**5%**
A2.il	0%	0%	0%	0%	4%	**71%**	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	**8%**	**12%**
A3.il	0%	0%	0%	0%	0%	11%	**33%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**33%**	**22%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	33%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**33%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**50%**	13%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**13%**	**0%**
Ba1.il	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	**73%**	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	**20%**	**2%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	**0%**	0%	33%	0%	0%	0%	0%	0%	0%	0%	**33%**	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	**40%**	0%	20%	0%	0%	0%	0%	0%	0%	**20%**	**0%**
B1.il	0%	0%	0%	0%	0%	0%	7%	0%	0%	0%	0%	0%	7%	**60%**	0%	0%	7%	0%	0%	0%	0%	**20%**	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	**50%**	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	100%	0%	0%	0%	0%	**0%**	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	100%	0%	0%	0%	**0%**	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**	**100%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**60%**	20%	0%	**20%**	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**67%**	0%	0%	0%	**33%**	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**57%**	0%	**43%**	**0%**

Annual Transition Table (2017) - structured finance w/o MILCs and deposit notes

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	WR	Impaired
Aaa.il	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa1.il	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa2.il	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa3.il	0%	0%	0%	**80%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**20%**	**0%**
A1.il	0%	0%	0%	0%	**33%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**67%**	**0%**
A2.il	0%	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
A3.il	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**50%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**50%**	**0%**
Ba1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**100%**	**0%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	**0%**	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**	**0%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	**0%**	0%	0%	**0%**	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	**0%**	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**	**0%**

Transition Matrixes for Structured Finance- ABS, 2004-2017

Annual Aggregated Transition Table (2004-2017) - ABS

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	WR	Impaired
Aaa.il	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa1.il	0%	**83%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**17%**	**0%**
Aa2.il	0%	0%	**75%**	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**21%**	**3%**
Aa3.il	0%	0%	0%	**79%**	3%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**15%**	**0%**
A1.il	0%	0%	0%	0%	**43%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**57%**	**0%**
A2.il	0%	0%	0%	0%	3%	**76%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	0%	**14%**	**3%**
A3.il	0%	0%	0%	0%	0%	0%	**67%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**33%**	**0%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**50%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**50%**	**0%**
Ba1.il	0%	0%	0%	8%	0%	0%	0%	0%	0%	0%	**69%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**23%**	**0%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	**0%**	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**	**100%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	**0%**	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**67%**	0%	**33%**	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**100%**	**0%**

Annual Transition Table (2017) - ABS

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	WR	Impaired
Aaa.il	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa1.il	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa2.il	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa3.il	0%	0%	0%	**75%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**25%**	**0%**
A1.il	0%	0%	0%	0%	**25%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**75%**	**0%**
A2.il	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
A3.il	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**50%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**50%**	**0%**
Ba1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**100%**	**0%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	**0%**	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**	**0%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	**0%**	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	**0%**	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**	**0%**

Transition Matrixes for Structured Finance- CDOs, 2004-2017

Annual Aggregated Transition Table (2004-2017) - CDOs

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	WR	Impaired
Aaa.il	**71%**	3%	0%	0%	0%	0%	0%	0%	0%	0%	11%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6%	9%
Aa1.il	0%	**0%**	33%	0%	0%	0%	0%	0%	0%	0%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%
Aa2.il	0%	14%	**43%**	0%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	29%
Aa3.il	0%	0%	0%	**0%**	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
A1.il	0%	0%	0%	0%	**0%**	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	33%
A2.il	0%	0%	0%	0%	6%	**61%**	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	28%
A3.il	0%	0%	0%	0%	0%	17%	**17%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	33%
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	33%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**50%**	17%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ba1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**75%**	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	18%	4%
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%	**0%**	0%	33%	0%	0%	0%	0%	0%	0%	0%	33%	0%
Ba3.il	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	**40%**	20%	0%	0%	0%	0%	0%	0%	0%	20%	0%
B1.il	0%	0%	0%	0%	0%	0%	7%	0%	0%	0%	0%	0%	7%	**60%**	0%	0%	7%	0%	0%	0%	0%	20%	0%
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	**50%**	0%	0%	0%	0%	0%	0%	0%	0%
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	100%	0%	0%	0%	0%	0%	0%
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	100%	0%	0%	0%	0%
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**60%**	20%	0%	20%	0%
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**67%**	33%	0%

Annual Transition Table (2017) - CDOs

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	WR	Impaired
Aaa.il	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Aa1.il	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Aa2.il	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Aa3.il	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
A1.il	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
A2.il	0%	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
A3.il	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ba1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ba3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
B1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	**0%**	0%	0%	0%	0%
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%

Transition Matrixes for MILCs, Deposit Notes and Notes, 2004-2017

Annual Aggregated Transition Table (2004-2017) - MILCs, deposit notes and notes

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	WR	Impaired
Aaa.il	**84%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**16%**	**0%**
Aa1.il	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa2.il	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa3.il	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
A1.il	0%	0%	0%	0%	**33%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**67%**	**0%**
A2.il	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
A3.il	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Ba1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	**0%**	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**	**0%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	**0%**	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	**0%**	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**	**0%**

Annual Transition Table (2017) - MILCs, deposit notes and notes

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	WR	Impaired
Aaa.il	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa1.il	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa2.il	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa3.il	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
A1.il	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
A2.il	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
A3.il	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Ba1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	**0%**	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**	**0%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	**0%**	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	**0%**	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**	**0%**

Transition Matrixes for Structured Instruments, 2004-2017

Annual Aggregated Transition Table (2004-2017) - structured instruments

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	WR	Impaired
Aaa.il	**0%**	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa1.il	6%	**78%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**17%**	**0%**
Aa2.il	0%	0%	**94%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**6%**	**0%**
Aa3.il	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
A1.il	0%	0%	0%	0%	**75%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**25%**	**0%**
A2.il	0%	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
A3.il	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Ba1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	**0%**	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**	**0%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	**0%**	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	**0%**	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**	**0%**

Annual Transition Table (2017) - structured instruments

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	WR	Impaired
Aaa.il	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa1.il	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa2.il	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Aa3.il	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
A1.il	0%	0%	0%	0%	**50%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**50%**	**0%**
A2.il	0%	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
A3.il	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Ba1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	**0%**	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	**0%**	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**	**0%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	**0%**	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	**0%**	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**	**0%**

Events of Default /Debt impairment[11]

The default of an underlying asset does not usually constitute default of a structured finance instrument, but may impair the cash flow for debt service of the rated debt, so it is therefore defined as impaired debt. Since the beginning of Midroog's activity and as of December 2017, 31 impaired debts have been recorded in structured finance, totaling about NIS 4.5 billion and about $115 million. 25 of these are CDOs, following a default in the notes/bonds that comprised the portfolio of underlying assets. The other debts are ABS[12] - asset-backed securities.

The average rating of impaired debts in the 12 months before the date the debt became impaired was A1.il. Following is information about the structured finance series rated by Midroog that were classified as impaired debts since it began operating, as a rater of credit risk in Israel:

| Issuer/Issue*	Initial rating year	Year of impariment according to Midroog's definition	Sector	Amount of rated debt (NISm)**	Initial rating	Rating 12 months before impairment	Impariment Reason
Sapir 1 Financial Instruments Ltd	2006	2007	CDO	18	Aa1.il	Aa1.il	Underlying asset default
Sapir 2 Finance aand Issue Ltd	2006	2007	CDO	17	Aa1.il	Aa1.il	Underlying asset default
Dorent Leasing 5 Ltd	2008	2008	ABS	73	Aa2.il	Aa2.il	Servicer in Chapter 11
Dorent Leasing 4 Ltd	2007	2008	ABS	56	Aa2.il	Aa2.il	Servicer in Chapter 11
Dorent Leasing 3 Ltd	2006	2008	ABS	24	Aa2.il	Aa2.il	Servicer in Chapter 11
Dorent Leasing 2 Ltd	2005	2008	ABS	10	Aa2.il	Aa2.il	Servicer in Chapter 11
Katzir Investment Ltd.	2005	2008	CDO	18	Aaa.il	Aaa.il	Underlying asset default
Carmel Financial Ltd.	2005	2008	CDO	22	Aaa.il	Aaa.il	Underlying asset default
Adar (M.P.) Financial Instruments Ltd	2006	2008	CDO	15	Aa2.il	Aa2.il	Underlying asset default
Fix A2 Ltd - Series A	2006	2008	CDO	69	A2.il	A2.il	Underlying asset default, Lehman Brothers
Fix A2 Ltd -Series A	2008	2008	CDO	92	A2.il	A2.il	Underlying asset default,Washington Mutual
Fix A2 Ltd - Series B	2006	2008	CDO	67	A2.il	A2.il	Underlying asset default, Lehman Brothers
Fix A2 Ltd - Series B	2008	2008	CDO	90	A2.il	A2.il	Underlying asset default,Washington Mutual
Fix A2 Ltd -Series C	2006	2008	CDO	20	A2.il	A2.il	Underlying asset default, Lehman Brothers
Fix A2 Ltd - Series C	2008	2008	CDO	81	A2.il	A2.il	Underlying asset default,Washington Mutual
Fix A2 Euro Ltd - Series A	2007	2008	CDO	53	A2.il	A2.il	Underlying asset default, Lehman Brothers
Fix A2 Euro Ltd - Series A	2008	2008	CDO	40	A2.il	A2.il	Underlying asset default, Glitnir
Global Finance GR8 Ltd - Series A	2007	2009	CDO	791	Aa1.il	Aa2.il	Underlying asset default
Global Finance GR8 Ltd - Series B	2007	2009	CDO	258	Aa3.il	A1.il	Underlying asset default
Global Finance GR8 Ltd - Series C	2007	2009	CDO	236	A2.il	A3.il	Underlying asset default
Global Finance GR8 Ltd - Series D	2007	2009	CDO	1,136	Aaa.il	Aaa.il	Underlying asset default, Africa Israel Investments Ltd and Zim Integrated Shipping services Ltd
Global Finance GR8 Ltd - Series E	2007	2009	CDO	37	Baa3.il	Ba1.il	Underlying asset default
Galil Mor Financial Products Ltd - Serie	2008	2009	CDO	688	Aaa.il	Aaa.il	Underlying asset default
Galil Mor Financial Products Ltd - Serie	2008	2009	CDO	17	A3.il	A3.il	Underlying asset default
Fix A2 Ltd - Series A	2008	2009	CDO	39	A2.il	A2.il	Underlying asset default, CIT Group
Fix A2 Ltd -Series B	2008	2009	CDO	36	A3.il	A3.il	Underlying asset default, CIT Group
Fix A2 Ltd - Series C	2008	2009	CDO	33	A2.il	Baa1.il	Underlying asset default, CIT Group
Fix A2 Euro Ltd -Series B	2008	2009	CDO	40	A2.il	A2.il	Underlying asset default, CIT Group
Las Vegas One (Series A) Ltd	2006	2007	ABS	25	A2.il	A2.il	Ca Rating (downgrade in 2007) and Payment default due to materialization of sales risk in the project (2009)
Unpublished	2006	2009	ABS	71	A2.il	Caa2.il	Payment default due to materialization of sales risk in the project
Global Finance GR8 Ltd - Series D	2011	2012	CDO	450	Baa1.il	Baa1.il	Underlying asset default, IDB Holding Company

*The bonds of Fix A2 Ltd., Fix A2 Euro Ltd. and Global Finance GR8 Ltd, were included in the impairment events of CDOs several times, since after the default of the underlying assets, the debenture was split so that the bond with the non-defaulted underlying assets were re-rated. If there have been a number of impairment events and the bonds have not yet been re-rated following the split, only the first impairment is shown.

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[11] As per the Midroog definition of Repayment Default/Impaired Debt in the document "Rating Scales and Definitions" on the Midroog web site.

[12] ABS-type impaired debts included bonds issued by Dorent Leasing 5 Ltd., Dorent Leasing 4 Ltd., Dorent Leasing 3 Ltd., Dorent Leasing 2 Ltd. The service provider for these series went into Chapter 11, causing delays in payments to bondholders. According to public reports, the bonds were repaid in full after about three years.

**At the time of impairment. Some of the series are denominated in US dollars and the aggregate amounts for each currency are shown above.

The chart below shows the distribution of the ratings of series in default: 12 months prior to impairment date, as well as the initial rating of the series:

Impaired Debt Rating Distribution, Initial Rating and Rating 12 Months Prior to Impairment Date
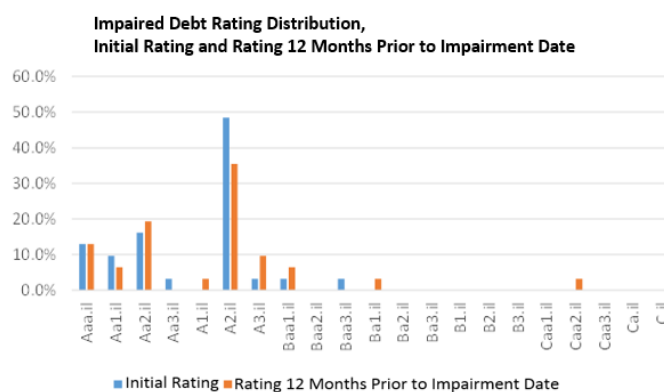
Accuracy Measure[13]

The ordinal power of the rating means the ratings are positioned on an ordinal scale, along which higher credit ratings should reflect better creditworthiness than lower credit ratings. Midroog uses an Average Position measure as the main measure when testing the accuracy of the rating. The measure tests the average location of defaults along the rating scale (AP ranges from 0 to 1), and answers the question: what is the relative location of series whose debt became impaired in the distribution of ratings, relative to the remainder of the issuers.

A perfect rating system would achieve AP approaching 100%, which would mean the series that became impaired had all been rated in the lowest percentile of the ratings distribution at least one year before the default date, which would attest to a perfect correlation between the rating and the impairment probability. A random rating system would produce AP of around 50%, while a rating system with a strong negative correlation to defaults would produce AP approaching 0%. The table below presents the accuracy measure based on the rating 12 months prior to the impairment date. In addition, we present the Accuracy Measure, adjusted for outlook, which also weighs a negative outlook or a rating in CR with negative implications 12 months before the debt became impaired.

The structured finance accuracy measure is calculated with regard to the ratings without MILCs and deposit notes, in order not to create upward skewing of the measure. No defaults/impairments were

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[13] Calculation methodology for the Accuracy Index is presented in Appendix 2

recorded for MILCs and deposit notes. Most impairments in structured finance outstanding debt occurred in 2008 and 2009, in which the accuracy measures were 66% and 69%, respectively. In this context, it should be noted that the accuracy measure does not examine the recovery rate. The recovery rate in structured finance transactions is an important parameter, since the loss in the event of a debt becoming impaired can cover a relatively wide range depending on the distribution of the underlying assets as well as on the "waterfall" of the financial instrument.

It can be seen that the ordinal power of the Midroog ratings in 2008 and 2009 is relatively good, as reflected in the accuracy measures for those years. Note that the small number of impairment events may skew the accuracy measure. In 2007 and 2012, the calculation of the accuracy measure was based on 3 and 1 impaired debts, respectively, which were rated[14] high relative to the distribution of the other ratings, so that the accuracy measure for these years is relatively low.

The table below shows the accuracy measure, the adjusted accuracy measure and the impairment rate between 2007 and 2017:

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Average	Median	Minimum	Maximum	Standard Deviation
Average Position	42%	66%	69%	---	---	50%	---	---	---	---	---	57%	58%	42%	69%	13%
Average Position (Outlook Adjuste	42%	66%	71%	---	---	52%	---	---	---	---	---	58%	59%	42%	71%	13%
Default Rate (%)	6.5%	22.4%	20.0%	0.0%	0.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5%	0%	0%	22%	8%

* The impairment rate is defined as the ratio between the number of series that became impaired according to Midroog's definitions during the year and the number of series rated at the start of the period (excluding MILCs and deposit notes).

** Note that the distribution of all the series is the distribution for the end of the period prior to impairment (that is, for the beginning of each calendar year).

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[14] 12 months prior to the impairment date.

Related Reports

- [For summaries of rating performance for the years 2009-2016, you are invited to view the Midroog website](#)
- [For Midroog's rating scales and definitions, you are invited to view the Midroog website.](#)

The reports are published on the Midroog Website www.midroog.co.il

Report Date: 28.03.2018

Appendix 1 – Calculating Transition Matrixes

Midroog groups the issuers in rating groups according to their rating and the relevant time period (T).[15] The marginal transition rate is the probability that an issuer that "survived" at a certain rating level up to the period T will move to another rating (upgrade or downgrade) by the end of that period. The cumulative transition rate is the probability of a transition between the rating levels at the time the group was formed up to the end of T. From the mathematical aspect, the marginal transition rate of T for a rating group that was created at time y in rating Z is defined as the proportion between the number of companies x(t) that transitioned from a particular group to another group during the time range T divided by the total of issuers in that rating group at the beginning of the time period n(t).

$$\text{Marginal migration rate from z (t)} = \frac{Xy(t)}{ny(t)}$$

In calculating the marginal transition rate in the transitions matrix adjusted for WR, withdrawn ratings are not factored into the calculation at all, but the last rating before the WR.

Where:

$Z_{i,WR}$ – the rate of transitions from an i rating to WR.

We multiply each rating transition $Z_{i,WR}$ in the transitions matrix that is not WR adjusted with the coefficient $\frac{1}{(1-z_{i,WR})}$.

When: $Z_{i,WR}$ in the WR adjusted transitions matrix is defined as equal to zero.

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[15] The relevant time period is a year as published in this report.

Appendix 2 – Calculating the accuracy measure

Average Position (AP)

The position of a rating (that defaulted or did not) in a rating group[16] is a percentage of the ratings in the rating group with ratings higher than it, plus half of the area in the rating category where it is located.

For example – If 5% of the ratings were rated Aaa.il, 6% were rated Aa1.il and 7% were rated Aa2.il, then:

1. The rating Aaa.il has the position of 5%/2=2.5.
2. The rating Aa1.il has the position of 5%+(6%/2)=8%.
3. The rating Aa2.il has the position of 5%+6%+(7%/2)=14.5%.

The average position is the calculation of the average position of ratings that have experienced default/impairment for a given point of time before default/ impairment (12 months before default/ impairment, as the case may be).

A strong rating system will present an AP of close to 100%, which means that the rating in which a default event was recorded have all been rated at the bottom percentile of the ratings distribution at least 12 months before default date, indicating a very strong correlation between the rating and the default. A random rating system will show an AP in the area of 50% and a rating system with a strong negative correlation will show an AP close to 0%. It should be noted that an AP of 100% or of 0% cannot be obtained, due to their share (distribution area) of the default events in the distribution so that the AP must be standardized for them. For example, suppose that D – represents the rate of ratings that experienced a default event in distribution.

- The maximum AP possible is 100% - D / 2, which will be achieved when all ratings with a default are rated the same and all ratings in which no default event has been recorded are rated above this rating.
- In a similar manner, the minimum AP possible is D/2, where all the ratings in which a default event has been recorded are the same and that it is higher than all the ratings that did not experience default.

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[16] In accordance with the definition for calculation purposes: issuer, series, etc.

In order to standardize the AP, we define AP* adjusted (above and below: "Accuracy Measure" or "Average Position-AP") as follows: AP* = (AP-50%) / (100%-D) +50%

This adjustment allows AP* to achieve values of 0% or 100%.

In addition, it should be noted that the information provided can be embodied in a positive/negative outlook and credit reviews for upgrade/downgrade and we present an adjusted AP measure for them. It is important to note that the AP measure or any other single measure alone does not explain the accuracy embodied in different rating systems at a given cutoff point. In addition, a small number of defaults and/or a low number of observations in a particular rating group may skew the results.

Appendix 3 – The WR adjusted transition matrixes

Annual Aggregated Transition Table (2004-2017), structured finance - adjusted for WR

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	Impaired
Aaa.il	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa1.il	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa2.il	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa3.il	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A1.il	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A2.il	0%	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A3.il	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
B1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	100%	0%	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**

Annual Transition Table (2017), structured finance - adjusted for WR

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	Impaired
Aaa.il	**98%**	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**1%**
Aa1.il	2%	**83%**	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	**7%**
Aa2.il	0%	1%	**92%**	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**5%**
Aa3.il	0%	0%	0%	**91%**	6%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A1.il	0%	0%	0%	0%	**80%**	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**10%**
A2.il	0%	0%	0%	0%	4%	**78%**	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	**13%**
A3.il	0%	0%	0%	0%	0%	17%	**50%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**33%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	33%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**33%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**57%**	14%	29%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba1.il	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	**91%**	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	**3%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	**0%**	0%	50%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	**50%**	0%	25%	0%	0%	0%	0%	0%	0%	**0%**
B1.il	0%	0%	0%	0%	0%	0%	8%	0%	0%	0%	0%	0%	8%	**75%**	0%	0%	8%	0%	0%	0%	0%	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	**50%**	0%	0%	0%	0%	0%	0%	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	100%	0%	0%	0%	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	100%	0%	0%	0%	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**100%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	75%	25%	0%	0%	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**100%**	0%	0%	0%	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**100%**	0%	**0%**

Annual Aggregated Transition Table (2004-2017), structured finance (excluding MILCs and deposit notes) - adjusted for WR

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	Impaired
Aaa.il	**78%**	5%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**7%**
Aa1.il	2%	**83%**	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	**7%**
Aa2.il	0%	1%	**92%**	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**5%**
Aa3.il	0%	0%	0%	**91%**	6%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A1.il	0%	0%	0%	0%	**80%**	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**10%**
A2.il	0%	0%	0%	0%	4%	**78%**	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	**13%**
A3.il	0%	0%	0%	0%	0%	17%	**50%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**33%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	33%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**33%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	57%	14%	29%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba1.il	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	**91%**	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	**3%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	**0%**	0%	50%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	**50%**	0%	25%	0%	0%	0%	0%	0%	0%	**0%**
B1.il	0%	0%	0%	0%	0%	0%	8%	0%	0%	0%	0%	0%	8%	**75%**	0%	0%	8%	0%	0%	0%	0%	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	**50%**	0%	0%	0%	0%	0%	0%	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	100%	0%	0%	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	100%	0%	0%	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**100%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**75%**	25%	0%	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**100%**	0%	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**100%**	**0%**

Annual Transition Table (2017), structured finance (excluding MILCs and deposit notes) - adjusted for WR

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	Impaired
Aaa.il	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa1.il	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa2.il	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa3.il	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A1.il	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A2.il	0%	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A3.il	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
B1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	100%	0%	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**

MIDROOG

Annual Aggregated Transition Table (2004-2017), ABS - adjusted for WR

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	Impaired
Aaa.il	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa1.il	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa2.il	0%	0%	**95%**	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**4%**
Aa3.il	0%	0%	0%	**93%**	3%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A1.il	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A2.il	0%	0%	0%	0%	4%	**88%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	**4%**
A3.il	0%	0%	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba1.il	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	**90%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
B1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**100%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**100%**	0%	0%	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	**0%**

Annual Transition Table (2017), ABS - adjusted for WR

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	Impaired
Aaa.il	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa1.il	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa2.il	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa3.il	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A1.il	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A2.il	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A3.il	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
B1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**

Annual Aggregated Transition Table (2004-2017), CDOs - adjusted for WR

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	Impaired
Aaa.il	**76%**	3%	0%	0%	0%	0%	0%	0%	0%	0%	12%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**9%**
Aa1.il	0%	**0%**	33%	0%	0%	0%	0%	0%	0%	0%	0%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**50%**
Aa2.il	0%	14%	**43%**	0%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**29%**
Aa3.il	0%	0%	0%	**0%**	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A1.il	0%	0%	0%	0%	**0%**	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**50%**
A2.il	0%	0%	0%	0%	6%	**61%**	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**28%**
A3.il	0%	0%	0%	0%	0%	25%	**25%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**50%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	33%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**33%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**50%**	17%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**91%**	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	**4%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	**0%**	0%	50%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	**50%**	0%	25%	0%	0%	0%	0%	0%	0%	**0%**
B1.il	0%	0%	0%	0%	0%	0%	8%	0%	0%	0%	0%	0%	8%	**75%**	0%	0%	8%	0%	0%	0%	0%	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	**50%**	0%	0%	0%	0%	0%	0%	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	100%	0%	0%	0%	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	100%	0%	0%	0%	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	75%	25%	0%	0%	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**100%**	**0%**

Annual Transition Table (2017), CDOs - adjusted for WR

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	Impaired
Aaa.il	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa1.il	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa2.il	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa3.il	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A1.il	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A2.il	0%	0%	0%	0%	0%	**0%**	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A3.il	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
B1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	100%	0%	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**

Annual Aggregated Transition Table (2004-2017), MILCs, deposit notes and notes - adjusted for WR

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	Impaired
Aaa.il	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa1.il	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa2.il	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa3.il	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A1.il	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A2.il	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A3.il	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
B1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**

Annual Transition Table (2017), MILCs, deposit notes and notes - adjusted for WR

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	Impaired
Aaa.il	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa1.il	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa2.il	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa3.il	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A1.il	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A2.il	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A3.il	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
B1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**

Annual Aggregated Transition Table (2004-2017), structured instruments - adjusted for WR

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	Impaired
Aaa.il	**0%**	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa1.il	7%	**93%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa2.il	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa3.il	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A1.il	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A2.il	0%	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A3.il	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
B1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**

Annual Transition Table (2017), structured instruments - adjusted for WR

	Aaa.il	Aa1.il	Aa2.il	Aa3.il	A1.il	A2.il	A3.il	Baa1.il	Baa2.il	Baa3.il	Ba1.il	Ba2.il	Ba3.il	B1.il	B2.il	B3.il	Caa1.il	Caa2.il	Caa3.il	Ca.il	C.il	Impaired
Aaa.il	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa1.il	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa2.il	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Aa3.il	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A1.il	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A2.il	0%	0%	0%	0%	0%	**100%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
A3.il	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa1.il	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa2.il	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Baa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
Ba3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	0%	**0%**
B1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	0%	**0%**
B2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	0%	**0%**
B3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	0%	**0%**
Caa1.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**
Caa2.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	0%	**0%**
Caa3.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	0%	**0%**
Ca.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	0%	**0%**
C.il	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**0%**	**0%**