



DEFAULT STUDY

OF CORPORATE AND CORPORATE DEBT SECURITIES
RATED BY PEFINDO

2007-2025

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EXECUTIVE SUMMARY

In 2025, the performance of debt instruments and issuing companies generally remained relatively stable. The default rate for companies remained low and improved compared to 2024. Throughout 2025, there was only 1 (one) company from the construction sector that experienced default, namely PT Wijaya Karya (Persero) Tbk (WIKA). The number of companies experiencing default decreased from the previous year, which recorded 3 (three) companies. However, in terms of the value of debt instruments, there was an increase in the total value of instruments that experienced default, reaching IDR7.54 trillion. Nevertheless, the impact on the aggregate default rate remained relatively limited, in line with the high value of new corporate bond issuances in 2025. The default event on WIKA instruments also occurred at a relatively lower initial rating, namely A- (single-A minus) (three notches above the investment grade threshold), with the previous year's monitoring indicating a rating of BB- (non-investment grade).

The cumulative default rate of issuing companies rated and published by PEFINDO declined to 7.73% for the period 2007–2025, while the default rate of debt instruments remained contained at 1.59%. From a sectoral perspective, the default rate of debt instruments and the default rate of issuing companies in the non-financial institution (non-FIN) sector were 3.75% and 10.60%, respectively. Meanwhile, in the financial institution (FIN) sector, the figures were significantly lower at 0.07% and 2.44%.

Defaults have only occurred among lower-rated entities. The AAA (triple-A) category maintained a 0.00% default rate of debt instruments and issuing companies throughout 2007–2025. Meanwhile, default rates for AA (double-A) and A (single-A) categories continued to decline to 2.27% and 6.20%, respectively, from 2.33% and 6.61%. With default rates remaining contained, A-rated instruments continue to be favored by investors due to their relatively higher yields compared to higher-rated instruments, while still offering lower risk than lower-rated categories. The BBB (triple-B) category has the highest default rate among rating categories.

PEFINDO recorded that during 2007–2025, defaults occurred across 11 industries out of 67 debt instrument classifications and 65 issuing company industry classifications. The highest default rates were observed in the shipping industry (SHIP), both for debt instruments and issuing companies. The majority of default rates in debt instruments and issuing companies were caused by companies' failure to meet coupon payments, accounting for 1.13% and 3.86% of total default cases, respectively.

PEFINDO's One-Year Rating Transition and Cumulative Average Default Rate analyses indicate stronger performance among higher-rated categories. Issuing companies and debt instruments with higher ratings exhibit greater stability, a higher likelihood of upgrades, and a lower probability of downgrades and defaults compared to those with lower ratings. Over the 18-year observation period, the cumulative average default rate shows a consistent pattern: the longer the time horizon, the higher the default rate. Additionally, lower-rated (non-investment grade) categories consistently exhibit higher default rates compared to investment-grade ratings.

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1. INTRODUCTION

Indonesia's economic landscape in 2025 stood at a crucial crossroads, where the transition in national economic policy had to contend with challenging global monetary conditions. Although macroeconomic indicators showed resilience and accelerated growth following significant benchmark interest rate cuts and expansionary fiscal support, shifts in the new administration's key policy priorities have placed pressure on several specific industry sectors.

The construction sector, which has been under considerable pressure in recent periods, is now facing heightened challenges following the shift in policy priorities that no longer emphasize infrastructure development. Its capital-intensive nature, reliance on long-term projects, and exposure to external financing make the sector particularly vulnerable to changes in liquidity and financing conditions. Coupled with adjustments in government policy priorities amid dynamic project realization, these conditions have also affected the cash flows of companies in the sector.

Throughout 2025, only 1 (one) company rated by PEFINDO failed to meet its financial obligations, namely PT Wijaya Karya (Persero) Tbk (WIKA). In 2025, WIKA experienced three default events, totaling IDR7.54 trillion in issuance value. The defaults reflect the company's weak financial and liquidity profile, stemming from past expansion risks and a volatile business environment. WIKA's default represents a key event that has influenced the dynamics of the domestic bond market. Given the relatively large value of the defaulted instruments, this event not only affected the company's credit profile but also influenced investor risk perception and statistical indicators, including rating transition matrix analysis.

Previously, in 2024, there were indications of a temporary improvement in WIKA's credit profile, reflected in rating actions supported by government capital injections (*Penyertaan Modal Negara/PMN*). Such support provided room for short-term liquidity improvement, thereby influencing rating movements and being reflected in the transition matrix, particularly in upgrades from lower rating categories. However, developments in 2025 indicate that the fundamental pressures faced by the company persisted, ultimately leading to defaults on the majority of the debt instruments issued.

Looking ahead, we expect that default risks in the construction sector will still need to be monitored carefully. Although pressures are expected to ease, the sector's characteristics—being capital-intensive, having long cash cycles, and reliance on projects and external funding—suggest a slower recovery than other sectors. The default cases observed in the previous year, particularly those involving large companies, indicate the presence of structural pressures that have yet to recover in the short term.

These developments underscore the importance of a comprehensive understanding of credit risk dynamics, not only based on current conditions but also considering financial sustainability and resilience to external pressures. In this regard, analysis of default rates, rating transition matrices, and the Cumulative Average Default Rate over time become important tools to evaluate changes in credit quality behavior.

This study aims to provide a deeper overview of corporate bond default developments in Indonesia, particularly those rated by PEFINDO, by highlighting historical trends, distribution by initial rating, and rating migration dynamics as reflected in transition matrices. In addition, the study

examines the factors influencing defaults, including macroeconomic conditions, industry characteristics, and company-specific factors.

By understanding the patterns and determinants of default risk, this study is expected to provide added value to stakeholders, including investors, regulators, and market participants, by enabling more informed decision-making and more effective credit risk management.

2. Review of The Default Rate

2.1 Data and Data Sources

The population used for the data is companies that issue a debt instruments rated and published by PEFINDO during the observation period (2007-2025). The data is divided into two groups: debt instrument data and issuing company data. The data sources used in this research come from the Indonesia Rating Highlight (IRH), Rating Announcement (RA), Press Release (PR)/Rating Summary, Rating Rationale (RR), and other data sources originating from PEFINDO. The limitations of the observation period and population size (data) included in the research are carried out solely so that the debt instruments and the issuing company can be better monitored and analyzed.

2.2 Overview

From 2007 to 2025, the cumulative value of debt instrument issuance and the number of issuing companies reached IDR1,550.43 trillion and 233 companies, respectively. In 2025, there were 10 (ten) new issuing companies (with published ratings) that issued debt instruments. An issuing entity is classified as a new entity when it issues debt instruments for the first time and is rated by PEFINDO. All new issuers came from the Non-Financial Institution sector, with the majority (80.00%) holding an A (Single-A) rating.

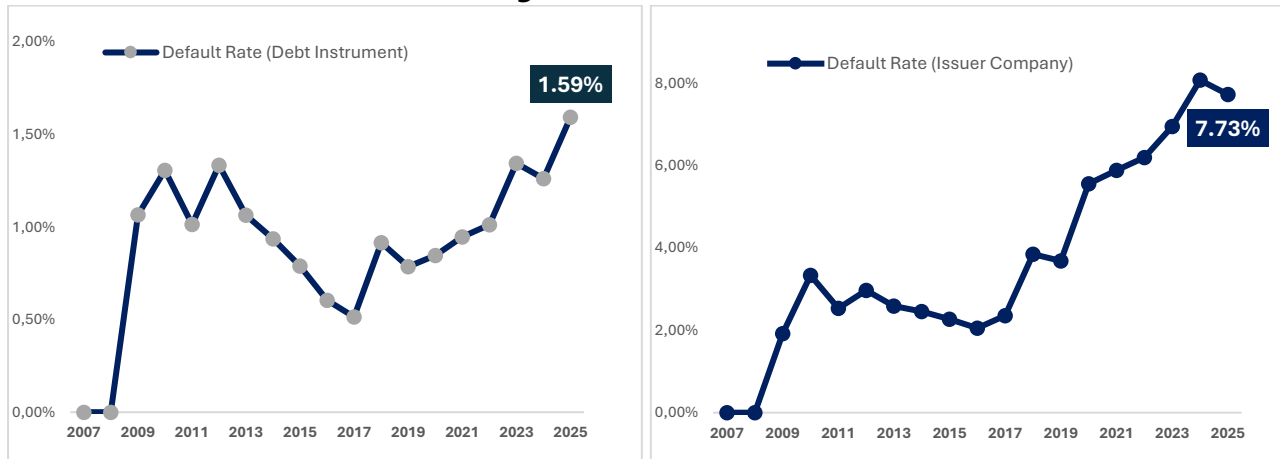
In terms of issuance value, the total value of debt instruments rated by PEFINDO in 2025 reached IDR189.84 trillion (limited to those with published ratings). The recorded issuance value includes debt securities issued through both public offerings and private placements (not listed on the Indonesia Stock Exchange). Of the IDR189.84 trillion in total issuance in 2025, approximately 56.82% was issued by companies in the Financial Institution sector, while 42.23% came from the Non-Financial Institution sector. Furthermore, based on initial ratings, around 48.40% of the total issuance value in 2025 consisted of AAA-rated instruments (Triple-A), followed by 38.65% rated A (Single-A). The high issuance value of AAA-rated corporate bonds reflects strong investor preference for instruments with very high credit quality. Meanwhile, A-rated bonds also remain attractive as they offer relatively higher coupon yields while still maintaining a moderate level of risk compared to lower-rated instruments.

In 2025, there was only 1 (one) company that experienced default, namely PT Wijaya Karya (Persero) Tbk (WIKA). The total value of instruments that defaulted amounted to IDR7,535.68 billion.

Defaults on WIKA's instruments occurred three times during 2025. First, due to WIKA's inability to meet principal payments on Shelf-Registered (SR) Bond II Phase II/2022 Seri A (IDR593.9 billion) and SR Sukuk Mudharabah II Phase II/2022 Seri A (IDR412.9 billion), which matured on February 18, 2025. Second, due to its failure to meet the principal payment of SR Sukuk Mudharabah III Phase I/2022 Series A, amounting to IDR109.33 billion, which matured on November 3, 2025. The third default occurred due to WIKA's inability to fulfill coupon payments on several instruments, including SR Bond I phase II, SR Bond II Phase I, SR Sukuk Mudharabah I Phase II, SR Sukuk Mudharabah II Phase

I, SR Bond I Tahap I, and SR Sukuk Mudharabah I Phase I, with a total issuance value of IDR6,419.50 billion in December 2025. PEFINDO also maintained WIKA's rating at Selective Default (*idSD*). However, the number of default cases based on issuing companies did not increase, as the company's default condition had already been recorded in 2024. Cumulatively in 2025, only one company defaulted, namely PT Wijaya Karya (Persero) Tbk (WIKA), with a total default value of IDR7,535.68 billion.

Figure 1. Annual Default Rate



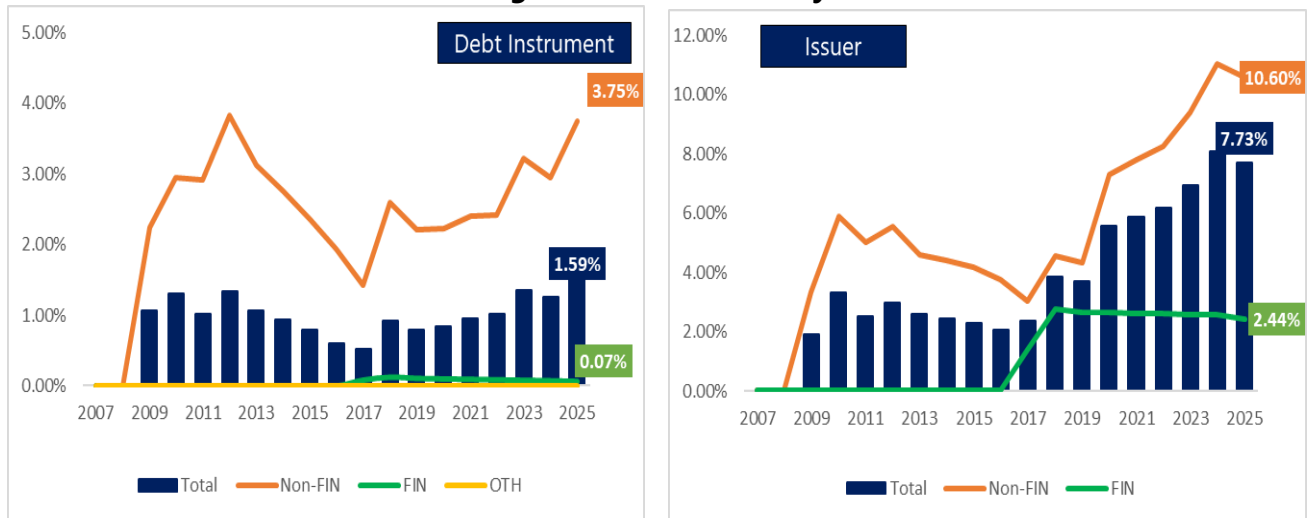
Source: PEFINDO Database (2026)

The default in 2025 brings the cumulative total defaults over the observation period (2007–2025) to 18 companies, with a total issuance value of IDR24.70 trillion. Based on the formula in Equation 1 (see Appendix 1), the default rate for debt instruments over the 2007–2025 period is 1.59%, while the default rate for issuing companies over the same period is 7.73%. The default rate of issuing companies slightly decreased compared to 2024, which stood at 8.07%. However, the default rate of debt instruments increased compared to 2024, which was recorded at 1.26%.

2.3 Default Rate by Sector

The sector classification of debt instruments is divided into three sectors: Non-Financial Institution (Non-FIN), Financial Institution (FIN), and Others (OTH). The Non-FIN sector consists of debt instruments issued by companies other than financial institutions. The FIN sector comprises debt instruments issued by financial institutions, such as banks, financing companies, insurance companies, securities firms, and others. The Others (OTH) sector includes debt instruments that do not fall under the Non-FIN or FIN sectors, such as Asset-Backed Securities (ABS), infrastructure funds (DINFRA), or debt instruments issued by regional governments. However, since no regional governments issued debt instruments during the observation period, the instruments classified under the Others (OTH) sector consist only of ABS and DINFRA. Meanwhile, the sector classification for issuing companies is divided into only two sectors: Non-Financial Institution (Non-FIN) and Financial Institution (FIN). This follows the same definitions used in the debt instrument classification. The FIN sector includes companies that are financial institutions, while the Non-FIN sector comprises non-financial issuing companies.

Figure 2. Default Rate by Sector



Source: PEFINDO Database (2026)

The default rate of debt instruments in the Non-FIN sector increased to 3.75% in 2025. This rise was driven by a significant increase in the number of defaulted debt instruments during the year. Meanwhile, the default rate in the FIN sector has continued to decline since 2019, then stabilized, and stood at 0.07% in 2025. In addition, no defaults were recorded in the OTH sector during the observation period.

Based on issuing companies, the default rate in the Non-FIN sector declined to 10.60% in 2025. This decrease was driven by the addition of new issuers in 2025, amid the absence of additional issuers experiencing default during the year. It should be noted that the default case involving PT Wijaya Karya (Persero) Tbk did not increase the cumulative number of defaulting issuers in 2025, as the company had already been recorded as defaulting when the initial default occurred in 2024. Meanwhile, in the FIN sector, the default rate based on issuing companies was 2.44% in 2025, indicating that, in general, the financial sector has maintained credit quality and met its coupon and principal payment obligations relatively well.

2.4 Default Rate by Industry

PEFINDO classifies 67 industries for debt instruments and 65 industries for issuing companies. This difference occurs because the EBA and DINFRA instruments do not have an issuer in the form of a corporate entity. Therefore, neither is included in the publishing company's industry classification.

The following is a list of industries for debt instruments and issuing companies used in this default study:



Figure 3. List of Industrial Classifications

No.	Kode	Nama Industri	No.	Kode	Nama Industri
1	ABSE**	Securitization	35	MINC	Mining Contractor
2	AERO	Aerospace and Defense	36	MINE	Mining
3	ANHS	Animal Feed and Husbandry	37	MNFG	Manufacturing
4	AQUA	Aquaculture	38	OFIN	Other Financial Services
5	ARLN	Airline	39	PHAM	Pharmaceutical
6	ARPT	Airport	40	PLAN	Plantation
7	AUCO	Automotive Component	41	POWR	Power and Energy
8	AUTO	Automotive	42	PRJF	Project Financing
9	BANK	Banking	43	PROP	Property
10	BCON	Business and Consumer Services	44	PRPK	Printing and Packaging
11	CEME	Cement	45	PULP	Pulp and Paper
12	CHEM	Chemical	46	PWRT	Power Rental
13	CONS	Construction	47	RAIL	Railway Transportation Infrastructure
14	COUR	Courier Services and Logistics	48	REIT	Real Estate Investment Trust (REIT)
15	DINF**	Infrastructure Financing (DINFRA)	49	RENT	Vehicle Rental and Transportation
16	EPCC	Engineering Procurement & Construction	50	REST	Restaurant
17	FERT	Fertilizer	51	RETL	Retail
18	FINA	Multifinance	52	SCRT	Securities
19	FISH	Fishery	53	SFIN	Non-Multifinance Financing
20	FOOD	Food and Beverage	54	SHIP	Shipping
21	GASD	Gas Distribution	55	SPFI	Special Purpose Financial Institution
22	HAPP	Household Appliance & Office Equipment	56	SPRT	Seaport
23	HEAL	Healthcare	57	SUBN	Subnational Entity
24	HLDC	Investment Holding Company	58	SUGA	Sugar Refinery
25	HLDF	Investment Holding Company	59	TEXT	Textile
26	HLDG	Holding Company	60	TIMB	Woodbase and Agro
27	HLDI	Investment Holding Company	61	TLCO	Telecommunication
28	HOTL	Hotel	62	TOBA	Tobacco
29	IBRO	Insurance Brokers	63	TOLL	Toll Road
30	INSR	Insurance and Guarantee	64	TOWR	Telecommunications Tower
31	ITEQ	Information Technology and Services	65	TRAD	Trading and Distribution
32	LESR	Tourism and Leisure	66	WASE	Waste Management
33	MEDA	Media	67	WATR	Clean Water Processing
34	METL	Metal			

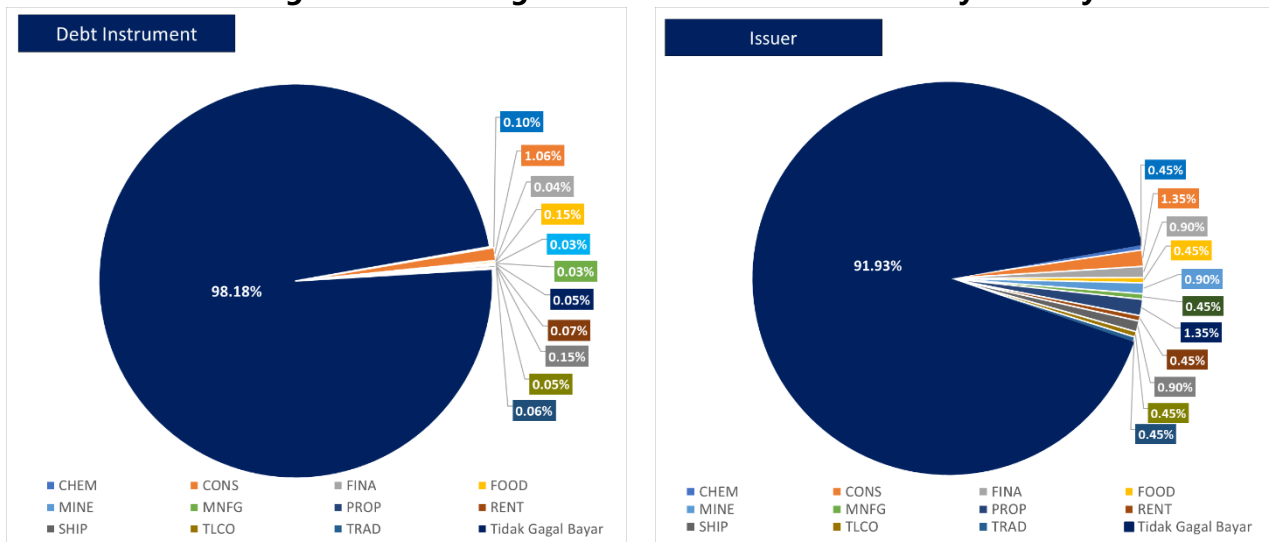
Note: ** Industries that are not in the Publishing Company's Industry classification.

Source: PEFINDO Database (2026)

As of 2025, PEFINDO recorded that defaults have occurred across 11 industries, both in debt instruments and issuing companies. Meanwhile, other industries have never experienced defaults during the observation period, resulting in a default rate of 0.00%. The 11 industries that experienced defaults are Chemicals (CHEM), Construction (CONS), Multifinance (FINA), Food and Beverages (FOOD), Manufacturing (MNFG), Property (PROP), Vehicle Rental and Transportation (RENT), Shipping (SHIP), Telecommunications (TLCO), Trade and Distribution (TRAD), and Mining (MINE).

From 2007 to 2025, PEFINDO indicates that corporate bond default cases in Indonesia have generally been concentrated in a limited number of sectors. Of all rated issuing companies during the period, approximately 91.93% of which originated from industries outside the 11 industries that have previously experienced defaults. This suggests that, overall, the majority of industry sectors have been able to maintain credit quality and fulfill their debt obligations.

Figure 4. Percentage of Default and Non-Default by Industry



Source: PEFINDO Database (2026)

A similar pattern is also observed on the instrument side. A total of 98.18% of the debt instruments issued were in sectors outside the 11 sectors that recorded default events. This finding indicates that default occurrences in the domestic corporate bond market are relatively limited and do not reflect overall market conditions, but are instead more specific to certain sectors or issuers. Among the sectors that have experienced defaults, the shipping industry (SHIP) recorded the highest default rate over the 2007–2025 period, at 65.31%. This elevated ratio was largely driven by several large-scale default cases in the early 2010s, notably defaults by PT Arpeni Pratama Ocean Line Tbk in 2010 and 2011, with a value of around IDR0.75 trillion, and by PT Berlian Laju Tanker Tbk in 2012, amounting to approximately IDR1.40 trillion.

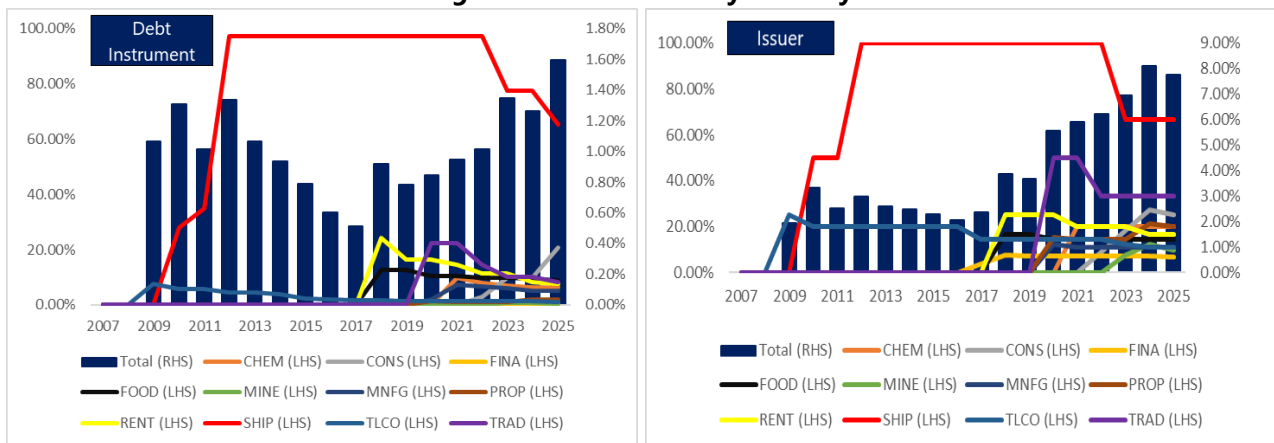
Nevertheless, recent developments indicate an improvement in the risk profile of the shipping sector. Its default rate has declined significantly since 2023. Previously reaching as high as 97.21%, the sector’s default rate decreased to 65.31% in 2025. This decline was mainly driven by an increase in the number of shipping companies rated by PEFINDO in 2023 and 2025, which expanded the issuer base and reduced the proportion of defaulted instruments relative to the sector’s total outstanding instruments.

On the other hand, the Multifinance industry (FINA) recorded the lowest default rate among sectors that have experienced defaults up to 2025. The sector’s default rate has shown a gradual decline, from 0.24% in 2024 to 0.22% in 2025. This improvement is closely linked to the high level of debt issuance activity within the sector, which significantly increased the total outstanding instruments. In fact, in 2025, the financing industry became the largest contributor to corporate bond issuance, with additional issuance reaching approximately IDR24.69 trillion. This dominance structurally contributed to lowering the sector’s default ratio.

Meanwhile, the other nine industries that have also recorded default events showed varying movements in default rates up to 2025. Based on debt instruments, the construction sector (CONS) saw its default ratio rise to 20.83% from 9.97% in 2024. In contrast, several other sectors showed improving trends, including food and beverages (FOOD), which declined to 8.83% (2024: 9.56%), trade

(TRAD) at 8.18% (2024: 10.28%), and rental (RENT), which decreased to 7.60% from 8.23% in the previous year. The manufacturing sector (MNFG) also declined to 5.03% from 5.22% in 2024. Meanwhile, the property (PROP) and telecommunications (TLCO) sectors recorded relatively low default ratios of 1.83% and 1.13%, respectively, both showing declines compared to the previous year. The mining sector (MINE) continued to record a very low default ratio of 0.42%, down from 0.58% in 2024. The chemical sector (CHEM), on the other hand, remained relatively stable with a default rate of 6.49%. Overall, these developments indicate that default risk in Indonesia's corporate bond market remains relatively concentrated in certain sectors, while most other sectors continue to demonstrate stable credit performance. In addition, variations in default ratios across sectors are influenced by changes in the number of issuers, new debt issuance activity, and the underlying fundamentals of each industry.

Figure 5. Default Rate by Industry



Source: PEFINDO Database (2026)

Among issuing companies, within industries that have experienced defaults, the highest and lowest default rates from 2007 to 2025 are held by the same industries as observed on the debt instrument side, namely the shipping and financing industries. However, their default rate percentages differ from those calculated based on debt instruments, as they are derived using the population of issuing companies.

From 2007 to 2025, the default rate of issuing companies in the shipping industry (SHIP) stood at 66.67%. Meanwhile, the multifinance industry (FINA) recorded a default rate of 6.90% (2024: 7.41%), with two companies experiencing defaults, occurring in 2017 and 2018, respectively. For the remaining nine industries, the default rates over the 2007–2025 period are as follows: TRAD: 33.33%; CONS: 25.00% (2024: 27.27%); PROP: 20.00% (2023: 21.43%); CHEM: 20.00%; RENT: 16.67%; FOOD: 14.29%; MINE: 10.00% (2024: 12.50%); TLCO: 11.11%; and MNFG: 11.11%.

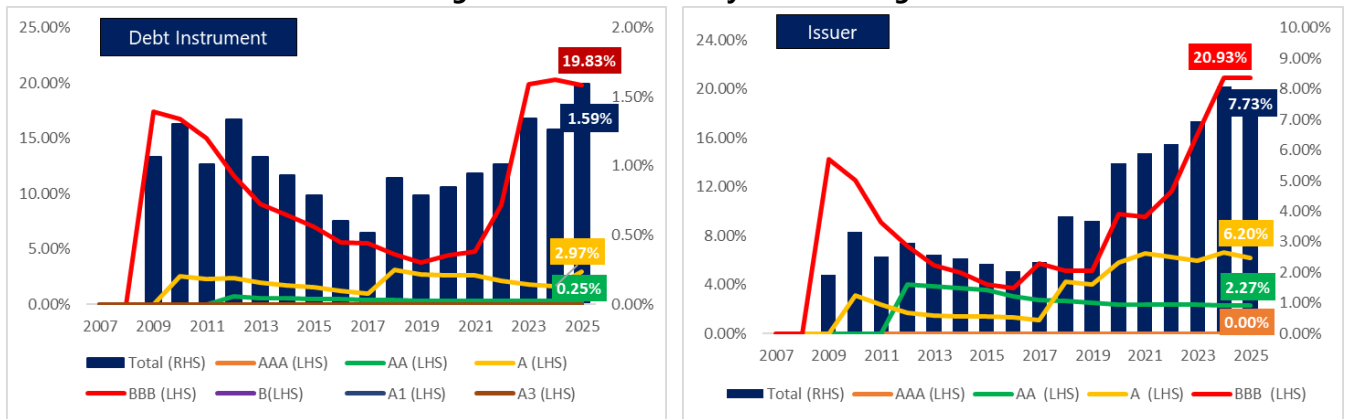
2.5 Default Rate by Initial Rating

Initial Rating refers to the credit rating assigned to a bond or issuer at the time of its first listing or issuance. For issuer-based calculations, the initial rating is the one assigned when a company first

issues a debt instrument, marking its debut as a bond issuer. Conversely, for debt instruments, the initial rating is the one assigned when the instrument is first listed or issued in the capital market. During the observation period, the recorded initial ratings for debt instruments were AAA, AA, A, BBB, A1, and A3. Ratings A1 and A3 pertain to short-term instruments, while the initial ratings for issuers were AAA, AA, A, and BBB.

Calculating default rates based on initial ratings provides insights into the inherent risk associated with each rating tier. In other words, it illustrates the likelihood of corporate debt instruments defaulting given a particular initial rating.

Figure 6. Default Rate by Initial Rating



Source: PEFINDO Database (2026).

For debt instruments, default rates through 2025 declined from the previous year for initial ratings of AA and BBB. The default rate for AA decreased to 0.25% (2024: 0.27%), while the default rate for BBB was 19.83% (2024: 20.27%). In contrast, the default rate for instruments with an initial rating of A increased to 2.97% in 2025 (2024: 1.64%), in line with the rise in default cases among debt instruments issued by companies in the construction industry with an A (single-A) initial rating.

On the other hand, instruments with initial ratings of AAA, A1, and A3 recorded no default events during the observation period, maintaining default rates of 0.00%. This condition further reinforces the hypothesis that instruments with higher ratings and shorter tenors tend to carry lower default risk compared to those with lower ratings and longer tenors.

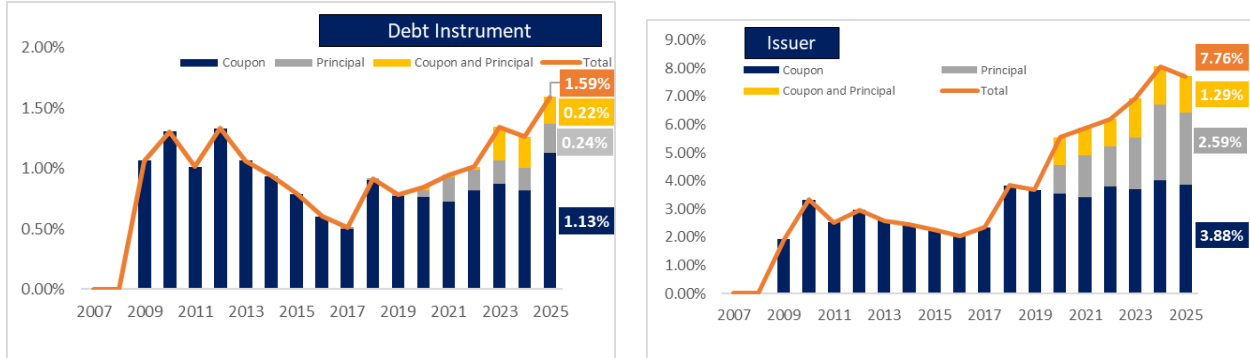
Meanwhile, at the issuing company level, the default rate for the BBB rating reached 20.93% as of 2025. The default rates for initial ratings of AA and A were 2.27% (2024: 2.33%) and 6.20% (2024: 6.61%), respectively. The AAA initial rating has consistently maintained a 0.00% default rate from 2007 to 2025, indicating that no issuing companies with an initial AAA rating experienced defaults on their debt instruments during this period.

2.6 Default Rate by Cause

Estimating the default rate by cause provides information on the magnitude of default across several reasons that cause debt instruments and companies to default. Under the general definition, debt securities and companies are considered in default if a company fails to pay one or more of its

financial obligations that are due. Specifically, default occurs if you fail to fulfill coupon payments, meet principal payments, or fulfill both interest and principal payments.

Figure 7. Default Rate by Cause



Source: PEFINDO Database (2026).

From 2007 to 2025, on a cumulative basis, the total value of debt instruments that experienced default amounted to IDR24.70 trillion. Meanwhile, the number of issuing companies that experienced default reached 18 companies.

For debt instruments, from the default rate of 1.59% up to 2025, 1.13% was attributed to companies' failure to meet coupon payments, while 0.24% failed to meet principal payments, and 0.22% failed to meet both (principal and coupon) obligations. Default cases in debt instruments in 2025 were predominantly caused by failures to meet coupon payments at maturity, accounting for approximately 85.19% of the total issuance value that experienced default in 2025. Meanwhile, from the default rate of issuing companies at 7.73%, 3.86% (or nine companies) experienced default due to failure to meet coupon payments, 2.58% (or six companies) due to failure to meet principal payments, and 1.29% (or three companies) due to failure to meet both principal and coupon payments..

2.7 One-Year Rating Transition Matrix

The Rating Transition Matrix is a matrix that shows the percentage of rating changes over a given period. The rows of the Rating Transition Matrix represent the initial ratings, while the columns represent the rating changes at a later time. The elements within the matrix indicate the proportion of rating category changes from the row to the column. This study uses a One-Year Rating Transition Matrix; therefore, the changes reflected in the matrix represent rating movements over a one-year period.

Higher ratings tend to demonstrate greater consistency in remaining at the same rating level compared to lower ratings. They are more likely to stay unchanged in the following year. For debt instruments, the strongest consistency is shown by the AAA rating, which remains at the same level in the following year, with a percentage of 81.99%. This implies that out of IDR2,536.78 trillion in issuance value rated AAA, approximately IDR2,079.95 trillion will remain at AAA in the following year.

Figure 8. One-Year Transition Matrix of the Debt Instrument

From/ To	Σ Issuance Amount (IDR billion)	AAA	AA	A	BBB	BB	B	CCC	D	NR
2025										
AAA	2,536,784.09	81.99%	0.48%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	17.53%
AA	1,478,096.54	6.16%	76.72%	1.07%	0.00%	0.12%	0.00%	0.00%	0.00%	15.92%
A	1,210,355.00	0.21%	3.67%	76.64%	2.33%	0.21%	0.01%	0.95%	0.25%	15.73%
BBB	230,790.32	0.00%	0.25%	4.31%	69.09%	1.85%	1.04%	0.35%	4.62%	18.50%
BB	23,022.70	0.00%	0.00%	0.00%	0.00%	9.61%	0.00%	18.25%	40.98%	31.15%
B	8,889.50	0.00%	0.00%	0.00%	0.00%	0.00%	86.71%	3.15%	0.00%	10.14%
CCC	15,780.70	0.00%	0.00%	0.00%	5.68%	65.94%	4.95%	10.99%	9.07%	3.36%
2024										
AAA	2,279,515.18	82.37%	0.53%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	17.10%
AA	1,397,384.78	5.86%	77.36%	1.14%	0.00%	0.13%	0.00%	0.00%	0.00%	15.52%
A	1,043,042.37	0.24%	4.26%	75.73%	2.71%	0.24%	0.01%	1.10%	0.28%	15.42%
BBB	218,945.65	0.00%	0.26%	4.54%	70.30%	1.95%	0.13%	0.36%	4.87%	17.58%
BB	11,121.50	0.00%	0.00%	0.00%	0.00%	19.90%	0.00%	11.97%	17.08%	51.05%
B	3,358.38	0.00%	0.00%	0.00%	0.00%	0.00%	64.83%	8.34%	0.00%	26.83%
CCC	15,757.70	0.00%	0.00%	0.00%	5.69%	66.04%	4.96%	10.86%	9.09%	3.36%

Source: PEFINDO Database (2026)

Figure 9. One-Year Transition Matrix of the Issuer Company

From/ To	Σ Issuing companies (Unit)	AAA	AA	A	BBB	BB	B	CCC	D	NR
2025										
AAA	277	95.31%	1.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.61%
AA	458	5.02%	85.81%	2.62%	0.00%	0.00%	0.00%	0.00%	0.00%	6.55%
A	685	0.15%	4.67%	85.11%	4.09%	0.44%	0.00%	0.15%	0.58%	4.82%
BBB	273	0.00%	0.37%	4.03%	74.73%	3.30%	0.73%	1.10%	2.93%	12.82%
BB	23	0.00%	0.00%	0.00%	0.00%	34.78%	0.00%	8.70%	17.39%	39.13%
B	4	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	25.00%	0.00%	25.00%
CCC	9	0.00%	0.00%	0.00%	0.00%	0.00%	11.11%	22.22%	44.44%	22.22%
2024										
AAA	246	95.12%	1.22%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.66%
AA	437	4.81%	86.04%	2.75%	0.00%	0.00%	0.00%	0.00%	0.00%	6.41%
A	641	0.16%	4.99%	84.09%	4.37%	0.47%	0.00%	0.16%	0.62%	5.15%
BBB	263	0.00%	0.38%	4.18%	75.67%	3.42%	0.38%	1.14%	3.04%	11.79%
BB	21	0.00%	0.00%	0.00%	0.00%	38.10%	0.00%	9.52%	14.29%	38.10%
B	3	0.00%	0.00%	0.00%	0.00%	0.00%	33.33%	33.33%	0.00%	33.33%
CCC	9	0.00%	0.00%	0.00%	0.00%	0.00%	11.11%	22.22%	44.44%	22.22%

Source: PEFINDO Database (2026)

Meanwhile, based on issuing companies, the AAA rating also demonstrates the highest consistency compared to lower ratings. AAA-rated issuers have a 95.31% probability of remaining at AAA in the following year. This means that, out of 277 AAA-rated issuers, around 264 will maintain their AAA rating in the subsequent year.

In addition to demonstrating strong consistency, higher ratings also tend to have a greater likelihood of experiencing upgrades compared to lower ratings. In the Debt Instrument Transition Matrix, the percentage of AA-rated instruments upgraded to AAA in the following year is 6.16%, while the percentage downgraded to A is 1.07%. From the cumulative issuance value of AA-rated debt instruments amounting to IDR1,478.10 trillion, approximately IDR91.05 trillion was upgraded to AAA in the following year, while only IDR15.86 trillion was downgraded to A. Meanwhile, in the Issuer Transition Matrix, 5.02% of AA-rated issuers were upgraded to AAA, whereas 2.62% were downgraded to A. Out of 458 AA-rated issuing companies, 23 experienced rating upgrades from AA to AAA, while 12 experienced downgrades from AA to A in the following year.

The opposite pattern is observed for lower ratings. Lower-rated entities tend to have a higher probability of migrating to a D rating (default) in the following year compared to higher-rated entities. The ratings with the highest likelihood of transitioning to D (default), both for debt instruments and issuing companies, are those below investment grade (BB to CCC).

The percentage of rating transitions from BB to D (default) in the following year for debt instruments was recorded at 40.98% in 2025. Compared to the end of 2024, this figure shows a significant increase, as the BB-to-D transition stood at 17.08% in 2024. This rise occurred amid default cases by WIKA, which had a relatively significant issuance value.

However, for the CCC rating, a different pattern emerges. In 2025, CCC-rated instruments showed a higher probability of being upgraded to BB (66.04%) than of being downgraded. This reflects the rating actions taken in 2024 on the debt instruments of PT Wijaya Karya (Persero) Tbk, supported by government capital injections (PMN) during its financial distress. Although only one issuer experienced an upgrade, WIKA's significant issuance size had a notable impact on the transition matrix. Nevertheless, by 2025, most of WIKA's instruments had defaulted.

At the issuing company level, the rating with the highest probability of migrating to D (default) in the following year remains CCC, at 44.44%.

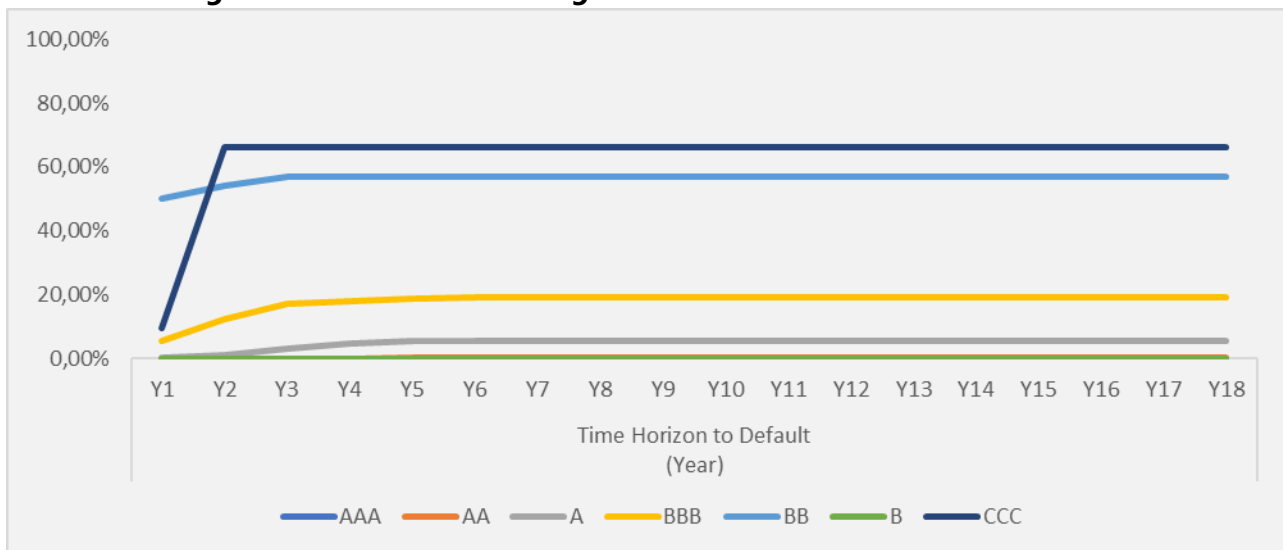
Meanwhile, the B rating for both debt instruments and issuing companies shows a 0.00% probability of transitioning to D (default). This low percentage is primarily due to limited monitoring coverage by PEFINDO for B-rated instruments and issuers, with only four companies observed in the past three years. However, this rating still carries a 22.22% probability of being downgraded to CCC in 2025 for issuing companies, while for debt instruments, the probability of being downgraded to CCC stands at 3.15%.

2.8 Cumulative Average Default Rate

This study calculates the Cumulative Average Default Rate for the ratings of AAA, AA, A, BBB, BB, B, CCC, and the time horizon from the first year to the seventeenth year. The default rate with an 18-year time horizon is the default rate based on historical data for that period. Overall, the Cumulative Average Default Rate between debt instrument ratings and issuing company ratings

shows the same pattern. As the time horizon lengthens, the default rate for each rating category increases. Additionally, the lower the rating (below investment grade), the higher the default rate.

Figure 10. Cumulative Average Default Rate of the Debt Instrument



Source: PEFINDO Database (2026)

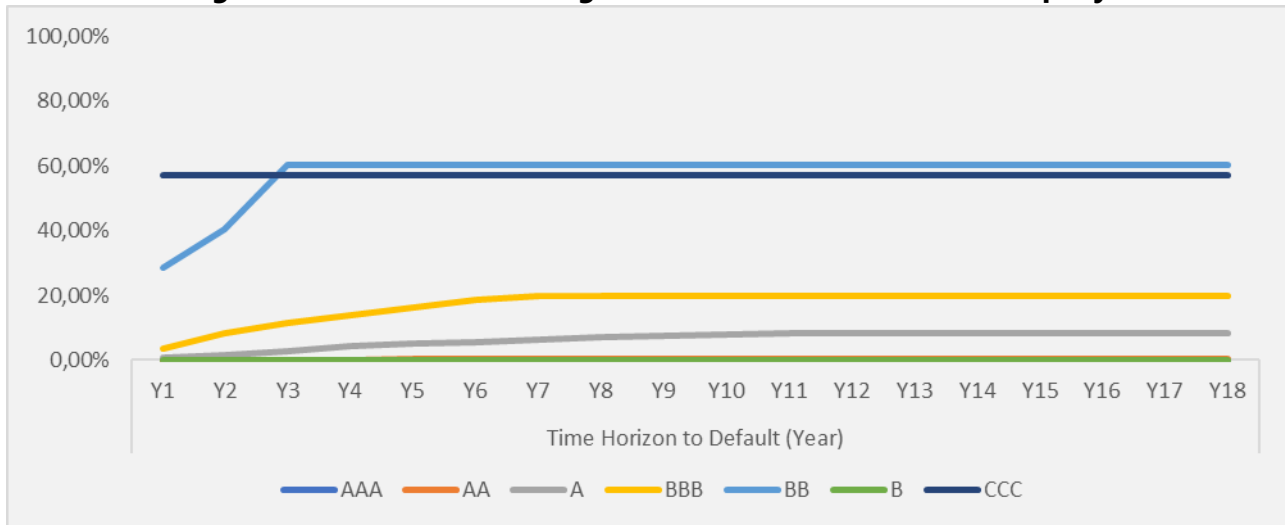
Debt instruments rated AAA and B recorded a constant default rate of 0.00% over the 18-year time horizon. The low default rate for AAA (0.00%) indicates that there were no default events observed for this rating during the observation period. Meanwhile, debt instruments rated B also showed a 0.00% default rate, which is largely attributable to PEFINDO’s limited monitoring population for B-rated instruments during the period, and within this limited sample, no instruments were downgraded to D or experienced default.

The percentage of AA-rated debt instruments showed a constant default rate of 0.00% from the first to the fourth year, before experiencing its first default in the fifth year, increasing the rate to 0.20%. This rate remained constant at the same level through to the eighteenth year. The default case for AA-rated instruments occurred only once, in 2012, involving a shipping company, with no additional cases recorded through 2025.

Meanwhile, the default rates for A-rated debt instruments in the first through fourth years were 0.31%, 1.01%, 2.90%, and 4.82%, respectively. The rate then increased to 5.49% in the fifth year and remained unchanged through to the eighteenth year. The probability of default for both AA- and A-rated debt instruments is relatively low and tends to occur over a longer time horizon after the rating is assigned. A-rated instruments are widely favored by the market as they offer higher coupons while still maintaining relatively lower risk compared to lower-rated categories. This is reflected in their relatively low probability of default, even over longer time horizons.

In comparison, BBB-rated instruments recorded a default rate of 5.67% in the first year, which continued to rise to 19.34% by the sixth year and then remained unchanged through to the eighteenth year.

Figure 11. Cumulative Average Default Rate of the Issuer Company



Source: PEFINDO Database (2026)

Ratings below investment grade exhibit relatively high default probabilities over a short time horizon. BB-rated instruments recorded a cumulative default rate of 50.08% in the first year, increasing to 56.83% by the third year, and remaining at that level through to the eighteenth year. Meanwhile, CCC-rated instruments had a cumulative default rate of 9.39% in the first year, which rose sharply to 66.33% in the second year and remained unchanged through to the eighteenth year.

Issuing companies with ratings of AAA, B, and CCC showed constant default rates over the 18-year period. AAA and B ratings recorded default rates of 0.00%, while CCC-rated issuers had a default rate of 57.14%. The 0.00% default rate for B-rated issuers is largely due to PEFINDO's limited monitoring population, with only two companies observed over the last three years of the period.

AA-rated issuing companies experienced their first default in the fifth year at 0.31%, and this rate remained constant through to the eighteenth year. Meanwhile, BBB-rated issuers saw default rates increase from 3.36% in the first year to 18.48% by the sixth year, before stabilizing at 19.64% from the seventh year onward. In contrast, BB-rated issuers recorded a default rate of 28.57% in the first year, rising to 60.32% by the third year, and remaining at that level through to the eighteenth year.



Appendix 1: Research Methodology

A1.1 Assumptions

This report uses several assumptions as a reference for collecting, processing, analyzing, and interpreting data based on the required debt instrument data. The assumptions used are as follows:

1. The following term for data entry:
 - a. The debt instrument is all types of debt instruments issued by a company. The unit used to measure the instrument is the "issuance value".
 - b. The issuing company is the company issuing the debt instruments. The unit used is the "company unit".
2. The rating of each year during the observation period (2007–2025), either the rating of the debt instrument or the issuing company, is the rating as of December 31 of that year.

Example : If a debt instrument or issuing company is rated AA+ (Double A Plus) in 2020, it is the rating of the debt instrument or issuing company as of December 31, 2020.
3. Ratings with the same letter but different modifiers, whether for debt instruments or issuing companies, are grouped into the same or equivalent rating category in the analysis.

Example : Rating A+ (Single A Plus), A (Single A), and A- (Single A Minus) will be considered as A.
4. Conditions of default:
 - 4.1. The default for the debt instrument is a condition in which it is declared as in default during the period it is held by the investor. The default on the debt instrument occurs if the issuing company is unable to meet part or all of the principal or coupon on the debt instrument when (or even before) it is due.
 - 4.2. The default for the issuing company is a condition in which the issuer experiences default on the debt instrument it issued.

In the calculation of the Rating Transition Matrix and the Cumulative Average Default Rate, if the issuing company is declared in default, the issuing company will be considered as the new entity when the company issues a new debt instrument or if the company has another instrument that is still outstanding (not matured yet). Meanwhile, using the same analogy, if the instrument defaults and is restructured, or if other factors cause the instrument to remain active, the instrument will be treated as a new instrument with the same issuance value until it matures.

5. Conditions of Not Rated (NR):

- 5.1. NR for the debt instrument is where it is no longer rated by PEFINDO. NR will be given under one of two conditions: one year after the maturity year or one year after the year of the early repayment.
- 5.2. NR for issuing companies is where the issuing company is no longer rated by PEFINDO. NR will be given to an issuing company one year after its rating expires, and it is not rated again by PEFINDO after the expiration year.

In the case of the rating of the debt instrument being withdrawn after experiencing default, it is still categorized as a default debt instrument or is not included in NR (not rated).

A1.2 Default Rate Theory

The default rate is calculated based on the debt instrument and the issuing company on an annual basis during the observation period. The calculation of the default rate for debt instruments and issuing companies on an annual basis during the observation period is also carried out by dividing by sector, industry, initial rating, and reason for default.

Cutler and Edeler (1958) said that the default rate is the ratio of cumulative values based on discrete time, which is commonly used by global credit rating agencies. The default rate at time t will be in the form of a percentage of the ratio between the cumulative value of the default value up to time t , compared to the cumulative value of the total value up to time t . For the debt instrument, the value used for the calculation of the default rate is the "issuance value" of the debt instrument, while for the issuing company, the value used for the calculation of the default rate is the "unit" of the issuing company. The formulation for calculating the default rate for debt instruments and issuing companies is as follows:

1. Debt instrument

$$DeR_t = \frac{\sum_{k=1}^t DIV_k}{\sum_{k=1}^t IV_k}, k = 1, 2, \dots, t \quad (1)$$

Explanation:

DeR_t : Default rate at time t .

DIV_k : Total issuance value of the debt instruments that defaulted at time k .

IV_k : Total issuance value of debt instruments at time k .

2. Issuing companies

$$DeR_t = \frac{\sum_{k=1}^t DI_k}{\sum_{k=1}^t I_k}, k = 1, 2, \dots, t \quad (2)$$

Explanation:

DeR_t : Default rate at time t .

- DI_k : Total issuing companies that have defaulted at time k .
 I_k : Total issuing companies at time k .

A1.3 Theory of Rating Transition Matrix

The Rating Transition Matrix is a matrix used to calculate the percentage of transitional ratings occurring within a given period. The rating transition matrix is typically used in the global rating agencies' default study report only to measure the percentage of rating transitions for companies rated by the rating agencies, and this percentage is calculated based on the company/entity unit. The rating transition matrix only considers ranking migration at a specific time, so a company/entity may be counted more than once in its calculations. However, in this study, PEFINDO has created a Rating Transition Matrix for debt instruments in addition to measuring the percentage of rating transitions for issuing companies within a specific time frame. The ranking transition percentage is calculated in the same manner as the calculation based on company/entity units, but with different units. The issuance value for each rating is used to calculate the rating transition percentage for debt instruments. Because it uses the same analogy as calculations based on company/entity units, a debt instrument value may be calculated more than once in the calculation.

The Markov Chain approach is used in this study to calculate the percentage in the rating transition matrix for both debt instruments and issuing companies. A Markov chain is a technical approach used to estimate changes that may occur in the future. Transition measurement with the Markov Chain uses a stochastic approach based on historical data held during the observation period. Measurement of the transition with the Markov Chain uses a stochastic approach based on historical data held during the observation period. Mathematically, the stochastic process $(X_t, t = 0, 1, 2, 3, \dots)$ is done by taking a finite number, or it can be counted, and if $X_t = i$ is state i at time t , and the process can move from state i to state j with P_{ij} that equals:

$$P_{ij} = P(X_{t+1} = j | X_t = i, X_{t-1} = i_{t-1}, \dots, X_1 = i_1, X_0 = i_0) \quad (3)$$

where for all conditions of $i_0, i_1, i_2, \dots, i_{n-1}, i_n = i, j$ and all $t \geq 0$, then the process in equation (3) is called the Markov Chain.

In this equation, it can be said that for the Markov Chain, the conditional distribution for the condition X_{t+1} is independent of the previous state $X_0, X_1, X_2, \dots, X_{t-1}$ and only depends on the present state. The value of P_{ij} represents that the process, when in the state i , will make a transition into the state j (Ross, 2007).

Based on equation (3), we can write $P_{ij} = P(X_1 = j | X_0 = i)$ as a one-step transition from state i to state j on the Markov Chain. Values of P_{ij} can also be expressed in the form of a matrix $N \times N$ expressed as the one-step transition matrix as follows:

$$\mathbf{P} = \begin{bmatrix} P_{11} & P_{12} & \dots & P_{1N} \\ P_{21} & P_{22} & \dots & P_{2N} \\ \vdots & \vdots & \ddots & \vdots \\ P_{N1} & P_{N2} & \dots & P_{NN} \end{bmatrix}, \text{ with } P_{ij} \geq 0; \sum_{j=1}^N P_{ij} = 1; i, j = 1, 2, \dots, N \quad (4)$$

One of the estimation methods for calculating the P_{ij} value that will be used to fill the elements contained in the matrix \mathbf{P} is the Cohort Method. According to Christensen et al. (2004), the estimator for $p_{ij}(t_k)$ in one time period with $t_0, t_1, t_2, \dots, t_T$ is a discrete time point with time intervals $\Delta t_k = t_{k+1} - t_k$ and can be written as follows:

$$\hat{p}_{ij}(t_k) = \frac{n_{ij}(\Delta t_k)}{n_i(t_k)} \quad (5)$$

Where $n(\Delta t_k)$ is the number of observations that move from condition i to condition j between periods t_k and t_{k+1} and $n_i(t_k)$ is the number of observations in the state i at time t_k . If it is assumed that the period is homogeneous, and we have data from time t_0 to time t_T , the most likely predictors for p_{ij} are as follows:

$$\hat{p}_{ij}(t_k) = \frac{\sum_{k=0}^{n-1} n_{ij}(\Delta t_k)}{\sum_{k=0}^{n-1} n_i(t_k)} \quad (6)$$

A1.4 Theory of Cumulative Average Default Rate

The cumulative average default rate describes the default rate of the debt instrument or the issuing company in a year within a specific time horizon. In general, the first step is to create a static pool to calculate the cumulative average default rate. The static pool is a change in the rating of the instrument debt or the issuing company within a certain period. After creating a static pool, the second step is calculating the marginal default rate.

If $m_t^Y(R)$ is the amount of issuance value of the debt instrument or the number of the issuing company rated R (AAA, AA, A, BBB, BB, B, CCC), which is still the amount of issuance value of the debt instrument or the number of the issuing company rated R (AAA, AA, A, BBB, BB, B, CCC) until year Y (2007, 2008, ..., 2020) and then defaulted in year t. If $n_t^Y(R)$ is the issuance value of the debt instrument or the number of the issuing company rated R (AAA, AA, A, BBB, BB, B, CCC) up to year Y (2007, 2008, ..., 2020) and not defaulted until year t. According to Fons (1994), the marginal default rate is calculated with the formulation as follows:

$$d_t(R) = \frac{\sum_{Y=2007}^T m_t^Y(R)}{\sum_{Y=2007}^T n_t^Y(R)} \quad (7)$$

After the marginal default rate is obtained, the cumulative average default rate for year t is obtained by the formula:

$$D_t(R) = D_{t-1}(R) + d_t(R) \quad (8)$$

**Appendix 2: Survival Pool Cumulative Average Default Rate
(Based on Debt Instrument)**

A2.1. AAA Rating (triple-A)

AAA		Time Horizon to Default																	
Year Pool	Issuance Value (Rp Billion)	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18
2007	1.000,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	1.000,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	5.310,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	11.348,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	15.034,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	22.809,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	42.771,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	89.832,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	114.055,60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	164.474,85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	237.813,35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	257.608,14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	294.347,90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	283.903,08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2021	246.486,47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	253.061,19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	237.551,41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024	257.268,91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025	303.477,91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary Statistic																			
Withdrawn Issuance Value	444.749	430.969	288.154	267.995	133.861	128.640	37.708	34.635	7.859	6.006	3.811	0	0	0	0	0	0	0	0
Defaultable Issuance Value	2.090.928	1.659.959	1.371.804	1.103.809	969.948	841.308	803.600	768.965	761.106	755.100	751.289	751.289	751.289	751.289	751.289	751.289	751.289	751.289	751.289
Default Issuance Value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marginal Default Probabilities	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Cumulative Default Probabilities	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%

A2.2. AA Rating (double-A)

AA		Time Horizon to Default																
Year Pool	Issuance Value (Rp Billion)	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17
2007	10.500,00	0	0	0	0	900	0	0	0	0	0	0	0	0	0	0	0	0
2008	16.600,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	36.511,74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	65.009,76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	89.995,96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	126.754,40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	130.128,51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	87.716,78	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	72.900,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	84.033,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	85.691,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	94.904,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	96.764,41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	93.066,17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2021	110.625,91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	113.136,90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	83.046,25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024	80.711,76	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary Statistic																		
Withdrawn Issuance Value	235.330	243.724	214.212	201.700	127.450	125.344	47.121	46.685	17.920	17.870	16.565	2.195	2.195	0	0	0	0	0
Defaultable Issuance Value	1.242.767	999.043	784.831	583.131	455.681	329.437	282.316	235.631	217.711	199.841	183.276	181.081	178.886	178.886	178.886	178.886	178.886	178.886
Default Issuance Value	0	0	0	0	900	0	0	0	0	0	0	0	0	0	0	0	0	0
Marginal Default Probabilities	0,00%	0,00%	0,00%	0,00%	0,20%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Cumulative Default Probabilities	0,00%	0,00%	0,00%	0,00%	0,20%	0,20%	0,20%	0,20%	0,20%	0,20%	0,20%	0,20%	0,20%	0,20%	0,20%	0,20%	0,20%	0,20%

A2.3. A Rating (single-A)

A		Time Horizon to Default																
Year Pool	Issuance Value (Rp Billion)	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17
2007	11.525,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	15.000,00	0	600	150	900	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	16.817,00	0	0	1340	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	14.469,00	0	1340	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	20.834,00	1340	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	33.432,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	38.278,00	0	0	0	0	900	0	0	0	0	0	0	0	0	0	0	0	0
2014	43.754,00	0	0	0	1900	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	52.608,78	0	0	1900	0	150	0	0	0	0	0	0	0	0	0	0	0	0
2016	62.798,47	0	2100	0	260	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	80.931,39	50	0	491	266,12	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	78.419,96	0	150	926,12	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	86.619,46	150	1426,12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	95.237,82	1426,12	0	184	0	1816	0	0	0	0	0	0	0	0	0	0	0	0
2021	108.715,38	0	184	0	6419,5	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	138.120,12	184	0	7535,68	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	145.482,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024	167.312,63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025	210.276,65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary Statistic																		
Withdrawn Issuance Value	190.379	196.854	155.115	153.690	75.909	68.346	11.002	12.823	781	781	2.281	0	0	0	0	0	0	0
Defaultable Issuance Value	1.019.976	819.972	659.057	492.840	407.185	335.974	324.972	312.149	311.368	310.587	308.306	308.306	308.306	308.306	308.306	308.306	308.306	308.306
Default Issuance Value	3.150	5.800	12.527	9.746	2.866	0	0	0	0	0	0	0	0	0	0	0	0	0
Marginal Default Probabilities	0,31%	0,71%	1,90%	1,98%	0,70%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Cumulative Default Probabilities	0,31%	1,01%	2,90%	4,82%	5,49%	5,49%	5,49%	5,49%	5,49%	5,49%	5,49%	5,49%	5,49%	5,49%	5,49%	5,49%	5,49%	5,49%

A2.4. BBB Rating (triple-B)

BBB		Time Horizon to Default																
Year Pool	Issuance Value (Rp Billion)	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17
2007	2.275,00	0	675	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	2.625,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	2.450,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	1.610,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	2.410,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	2.310,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	3.970,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	5.183,80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	5.967,88	0	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	11.462,88	332	1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	17.962,88	2100	0	200	200	0	400	0	0	0	0	0	0	0	0	0	0	0
2018	21.945,26	0	541	300	0	400	23	0	0	0	0	0	0	0	0	0	0	0
2019	23.679,26	1141	300	0	400	23	0	0	0	0	0	0	0	0	0	0	0	0
2020	36.104,02	0	2000	4715,5	70,9	0	0	0	0	0	0	0	0	0	0	0	0	0
2021	36.518,19	2000	4715,5	234,9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	27.788,87	4715,5	398,4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	14.682,64	374,4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024	11.844,67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025	6.586,51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary Statistic																		
Withdrawn Issuance Value	42.704	42.281	28.349	19.457	9.016	11.521	4.911	3.506	0	0	0	0	0	0	0	0	0	0
Defaultable Issuance Value	188.086	135.143	97.122	72.215	62.528	50.584	45.250	41.745	41.745	41.745	41.745	41.745	41.745	41.745	41.745	41.745	41.745	41.745
Default Issuance Value	10.663	9.672	5.450	671	423	423	0	0	0	0	0	0	0	0	0	0	0	0
Marginal Default Probabilities	5,67%	7,16%	5,61%	0,93%	0,68%	0,84%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Cumulative Default Probabilities	5,67%	12,42%	17,34%	18,10%	18,66%	19,34%	19,34%	19,34%	19,34%	19,34%	19,34%	19,34%	19,34%	19,34%	19,34%	19,34%	19,34%	19,34%

A2.5. BB Rating (double-B)

BB		Time Horizon to Default																	
Year Pool	Issuance Value (Rp Billion)	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	750,00	600	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	200,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	740,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	328,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	181,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	1.962,00	1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	1.795,50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	570,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	3.695,00	300	0	400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2021	600,00	0	400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	300,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	1495	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024	11901	7535,68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary Statistic																			
Withdrawn Issuance Value	5.678	2.246	281	0	781	781	0	0	0	0	0	0	0	0	0	0	0	0	0
Defaultable Issuance Value	18.840	7.159	6.328	5.928	5.147	4.366	4.366	4.366	4.366	4.366	4.366	4.366	4.366	4.366	4.366	4.366	4.366	4.366	4.366
Default Issuance Value	9.436	550	400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marginal Default Probabilities	50,08%	7,68%	6,32%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Cumulative Default Probabilities	50,08%	53,92%	56,83%	56,83%	56,83%	56,83%	56,83%	56,83%	56,83%	56,83%	56,83%	56,83%	56,83%	56,83%	56,83%	56,83%	56,83%	56,83%	56,83%

A2.6. B Rating (single-B)

B		Time Horizon to Default																	
Year Pool	Issuance Value (Rp Billion)	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	280,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	120,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	781	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	2177	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024	5531	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025	7641	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary Statistic																			
Withdrawn Issuance Value	901	280	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Defaultable Issuance Value	7.989	7.709	7.709	7.709	7.709	7.709	7.709	7.709	7.709	7.709	7.709	7.709	7.709	7.709	7.709	7.709	7.709	7.709	7.709
Default Issuance Value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marginal Default Probabilities	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Cumulative Default Probabilities	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%

A2.7. CCC Rating (triple-C)

CCC		Time Horizon to Default																	
Year Pool	Issuance Value (Rp Billion)	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	675,00	675	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	150,00	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	280,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	100,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	781,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	931,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2021	931,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	400,00	400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	11.509,70	207	7535,68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024	23,00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025	3.477,29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary Statistic																			
Withdrawn Issuance Value	530	1.828	781	781	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Defaultable Issuance Value	15.251	11.991	3.675	2.894	2.894	2.894	2.894	2.894	2.894	2.894	2.894	2.894	2.894	2.894	2.894	2.894	2.894	2.894	2.894
Default Issuance Value	1.432	7.536	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marginal Default Probabilities	9,39%	62,84%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Cumulative Default Probabilities	9,39%	66,33%	66,33%	66,33%	66,33%	66,33%	66,33%	66,33%	66,33%	66,33%	66,33%	66,33%	66,33%	66,33%	66,33%	66,33%	66,33%	66,33%	66,33%

Appendix 3: Survival Pool Cumulative Average Default Rate (Based on Issuing Companies)

A3.1 AAA Rating (triple-A)

AAA		Time Horizon to Default																	
Year Pool	Total Issuer (Unit)	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2021	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary Statistic																			
Withdrawn Issuer	10	8	6	7	5	5	4	4	2	1	0	0	0	0	0	0	0	0	0
Defaultable Issuer	267	259	253	246	241	236	232	228	226	225	225	225	225	225	225	225	225	225	225
Default Issuer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marginal Default Probabilities	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Cumulative Default Probabilities	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%

A3.2. AA Rating (double-A)

AA		Time Horizon to Default																	
Year Pool	Total Issuer (Unit)	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18
2007	7	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2021	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary Statistic																			
Withdrawn Issuer		30	30	29	26	23	17	11	9	8	8	8	5	5	4	1	1	0	0
Defaultable Issuer		428	398	369	343	320	302	291	282	274	266	258	253	248	244	243	242	242	242
Default Issuer		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Marginal Default Probabilities		0,00%	0,00%	0,00%	0,00%	0,31%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Cumulative Default Probabilities		0,00%	0,00%	0,00%	0,00%	0,31%	0,31%	0,31%	0,31%	0,31%	0,31%	0,31%	0,31%	0,31%	0,31%	0,31%	0,31%	0,31%	0,31%

A3.3. A Rating (single-A)

A		Time Horizon to Default																	
Year Pool	Total Issuer (Unit)	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18
2007	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	20	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	22	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	24	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	32	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	41	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
2013	46	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0
2014	45	0	0	0	2	0	1	0	0	1	1	0	0	0	0	0	0	0	0
2015	47	0	0	2	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0
2016	46	0	1	0	2	0	0	1	2	0	0	0	0	0	0	0	0	0	0
2017	47	1	0	2	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0
2018	45	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	46	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	45	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2021	41	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	37	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary Statistic																			
Withdrawn Issuer	33	38	40	36	32	30	19	17	11	6	7	4	2	1	1	1	0	0	0
Defaultable Issuer	652	610	564	521	481	447	426	406	391	383	374	369	367	366	365	364	364	364	364
Default Issuer	4	6	7	8	4	2	3	4	2	2	1	0	0	0	0	0	0	0	0
Marginal Default Probabilities	0,61%	0,98%	1,24%	1,54%	0,83%	0,45%	0,70%	0,99%	0,51%	0,52%	0,27%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Cumulative Default Probabilities	0,61%	1,59%	2,81%	4,30%	5,10%	5,53%	6,19%	7,11%	7,59%	8,07%	8,32%	8,32%	8,32%	8,32%	8,32%	8,32%	8,32%	8,32%	8,32%

A3.4. BBB Rating (triple-B)

BBB		Time Horizon to Default																	
Year Pool	Total Issuer (Unit)	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18
2007	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	17	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	19	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	25	1	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2018	28	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
2019	26	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	26	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2021	23	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	18	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary Statistic																			
Withdrawn Issuer	35	36	33	31	16	13	8	6	6	5	2	1	0	0	0	0	0	0	0
Defaultable Issuer	238	194	151	115	96	80	70	63	57	52	50	49	49	49	49	49	49	49	49
Default Issuer	8	10	5	3	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0
Marginal Default Probabilities	3,36%	5,15%	3,31%	2,61%	3,13%	2,50%	1,43%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Cumulative Default Probabilities	3,36%	8,34%	11,38%	13,69%	16,39%	18,48%	19,64%	19,64%	19,64%	19,64%	19,64%	19,64%	19,64%	19,64%	19,64%	19,64%	19,64%	19,64%	19,64%

A2.5. BB Rating (double-B)

BB		Time Horizon to Default																	
Year Pool	Total Issuer (Unit)	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	5	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2021	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary Statistic																			
Withdrawn Issuer	9	4	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Defaultable Issuer	14	6	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Default Issuer	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marginal Default Probabilities	28,57%	16,67%	33,33%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Cumulative Default Probabilities	28,57%	40,48%	60,32%	60,32%	60,32%	60,32%	60,32%	60,32%	60,32%	60,32%	60,32%	60,32%	60,32%	60,32%	60,32%	60,32%	60,32%	60,32%	60,32%

A2.6. B Rating (single-B)

B		Time Horizon to Default																	
Year Pool	Total Issuer (Unit)	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary Statistic																			
Withdrawn Issuer		2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Defaultable Issuer		2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Default Issuer		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marginal Default Probabilities		0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Cumulative Default Probabilities		0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%

A2.7. CCC Rating (triple-C)

CCC		Time Horizon to Default																	
Year Pool	Total Issuer (Unit)	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10	Y11	Y12	Y13	Y14	Y15	Y16	Y17	Y18
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2020	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2021	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2022	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2023	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2025	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary Statistic																			
Withdrawn Issuer		2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Defaultable Issuer		7	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Default Issuer		4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marginal Default Probabilities		57,14%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Cumulative Default Probabilities		57,14%	57,14%	57,14%	57,14%	57,14%	57,14%	57,14%	57,14%	57,14%	57,14%	57,14%	57,14%	57,14%	57,14%	57,14%	57,14%	57,14%	57,14%

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