



BANQUE DE FRANCE RATINGS

2021 PERFORMANCE ASSESSMENT

May 2022





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This document provides a series of indicators used by the Banque de France to monitor the performance of its rating system.

The objective of a rating system is to classify companies according to the probability of occurrence of a default event over a given horizon.

While deciding which rating to provide, financial analysts build their assessment on all relevant available information. The benchmark horizon for the Banque de France's assessment is three years, therefore financial analysts take into account the outlook for the medium-term horizon to capture predictive aspects. Such process provides some stability to the through-the-cycle assessment — at least in the case of the highest ratings. In addition, financial analysts will incorporate any significant new elements as soon as they come to their attention to deliver reactive up-to-date rating.

The measurement of a rating system's performance should meet three objectives:

- It must enable an outside observer to form an opinion on the rating system's ability to classify companies appropriately according to their level of credit risk.
- It must provide details on how the rating system achieves a balance between stability and responsiveness.
- The value of the indicators must be interpreted in relation to the rating system's parameters, such as the definition of "default" and the size of the portfolio of companies covered by the system.



1. DETAILS ON THE STATISTICAL METHODOLOGY USED

The Banque de France rating system is an assessment of a company's ability to meet its financial commitments over a three-year horizon. It is a measure of a company's credit risk, reflecting a judgement as to the degree of risk incurred by its lenders.

Ratings are assigned by analysts located throughout France, in compliance with the professional and ethical standards set out in the "Banque de France code of conduct for company rating activities".

Each year, companies meeting the qualifying criteria (i.e. with a turnover equal to or higher than 750,000, excluding tax) undergo a risk analysis, based on the following elements:

- an examination of the most recent company financial statements (no more than 20 months old);
- qualitative information, which, since 2015, includes a section on Environmental Social Governance (ESG).

The statistics presented in this document concern companies within this population, which have been assigned one of the following ratings: 3++, 3+, 3, 4+, 4, 5+, 5, 6, 7, 8, 9 or P.¹

These statistics are based on the notion of default which includes not only failure (opening of legal proceedings: receivership or judicial liquidation) but also the allocation of a credit rating of 9, resulting from payment incidents on trade bills declared by one or more credit institutions. Please note that this definition of default differs from the concept of default under Basel II, as defined in Regulation (EU) No 575/2013 of 26 June 2013.

A credit rating of 9 – the lowest rating before the launch of legal proceedings (P rating) – indicates that the company's ability to meet its financial commitments over a three-year horizon is seriously at risk. It should be noted that this definition of default differs from the definition of default under the Basel framework, which includes failures and defaults on bank credits. A rating of 9 is regarded as a default rating, and is assigned when a company's total payment incidents over the six preceding months exceed 10% of the total amount of its purchases (excluding VAT).²

¹ Since 8th January 2022, the Banque de France has implemented a new rating scale with 22 ratings compared to 13 ratings in the previous rating scale. The statistics in this document relate to the period prior to 31st December 2021, so the previous rating scale is used.

² If the amount of purchases is not known, the ratio is calculated as a percentage of total turnover excluding tax. In this case, a rating of 9 is assigned if the ratio exceeds 5%.

The statistics provided in this document do not cover the rating 0, which is assigned to companies whose financial statements have not been examined for the period under review.

Default and failure rates are called "fixed" as they are calculated from the 31st December of the year before the reference year for which the rates are calculated.³

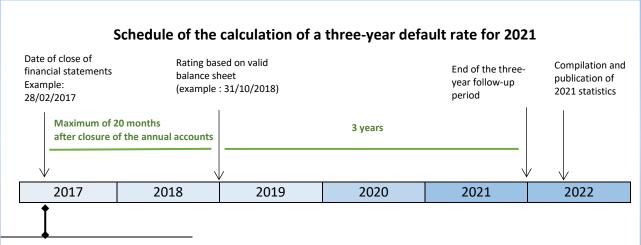
The analysis of the one-year and two-year default rates provides useful additional insight to the three-year default rate by incorporating shorter horizons.

The one-year default rate observed over the year Y under review is calculated on the non-defaulting companies at the end of the previous year (i.e. Y-1).

The two-year default rate observed over years (Y-1) and Y is calculated on the non-defaulting companies at the end of the (Y-2).

The three-year horizon default rate observed over years (Y-2), (Y-1) and Y is calculated on the non-defaulting companies at the end of the (Y-3).

This document provides the most recent statistics, i.e. those available at the start of 2022. As errors or changes can occur when payment incidents are declared (e.g. revisions to or cancellations of incidents, for example), statistics on failures and defaults are published a few months after the end of the period under review to ensure that data series are stable (including for the most recent data).



³ As of the publication of the 2016 statistics, default and failure rates are calculated using the "fixed rate" method and not the "rolling rate" method. All rates for previous years have been recalculated using this method (Section 2.2) to ensure comparability between different years.

2. 2022 STATISTICS BASED ON 2021 DATA

2.1. Predictive capacity of the rating system & compliance with ECAIs standards

The Banque de France has an Extrernal Credit Assessment Institution (ECAI) status. This status allows credit institutions to use Banque de France's rating to calculate their regulatory capital requirements for credit risk.

This status requires Banque de France to meet the ECAIs' risk rating standards for each credit level of fixed three-year default rates including lower and upper limits (Table 1).

The Banque de France fixed three-year default rates meet the ECAIs' risk rating limits for all credit ratings.

Moreover, an analysis of the data shows a consistent progression in default and failure rates across the rating scale and over the three time horizons taken into consideration.

Overall, the default rate for rated companies amounts to 0.45 % over a one-year horizon, 1.13 % over a two-year horizon and 2.09 % over a three-year horizon (see Table 1 and Appendix 2).

Table 1: Three-year Banque de France default rates

Credit rating	Number of		hin 3 years 19, 2020)	ECAIs' risk rating standards for fixed three-year default rates					
	companies	Number	Rate	lower limit	upper limit	mean			
3++	11 929	1	0,01%	0,00%	0,16%	0,10%			
3+	20 568	14	0,07%	0,17%	0,54%	0,25%			
3	31 945	34	0,11%	0,17%	0,54%	0,23%			
4+	43 050	128	0,30%	0,55%	2,39%	1,00%			
4	60 117	604	1,00%	2.409/	10.00%	7 500/			
5+	62 248	1 536	2,47%	2,40%	10,99%	7,50%			
5	20 973	1 341	6,39%	11 000/	26.400/	20.000/			
6	12 418	1167	9,40%	11,00%	26,49%	20,00%			
7	1 565	376	24,03%						
8	905	364	40,22%	26,50%	100,00%	34,00%			
9	0								
Total	Total 265 718		2,09%						

Source: Banque de France, Companies Directorate

2.2. Robustness of the system and discriminative capacity of the rating system

An examination of historical ratings data enables evaluation of the robustness of the system over time. Moreover, historical data on the one-year and three-year default and failure rates reveal a number of significant trends, notably an almost continuous decline in these rates over the past decade for those ratings classified as eligible for monetary policy operations.

To assess the robustness and consistency of the system over time, the table below shows data based on the closing accounts for 2008 to 2021. On average, and for each of the financial years presented, there is a satisfactory progression in the default and failure rates as we move along the ratings scale.

Long-term data on one-year rates show that, for those companies assessed after the 2008-09 financial crisis, one-year default and failure rates have decreased since 2010, both for individual credit ratings and on an aggregate basis (Graph 1 and 2). The (brief) upturn in 2012-2013 in average rates calculated for all credit ratings results from pressure on the lower ratings (lower than 5). Since 2014, the one-year rates have decreased significantly and have fallen below the long-term average. They reach their lowest level in 2021 owing mainly to the exceptional measures adopted to support businesses during the COVID crisis. However, the default and failure rates for the lower ratings (7, 8 and 9) increase in 2021, but this increase concerns only a limited number of companies (492 companies rated 7, 189 companies rated 8 and 21 companies rated 9 at 31 December 2020).

The trend in three-year rates continues the same downward trend as for one-year rates (Graph 1 and 2). It should be noted that the 10-year averages for the failure and default rates of ratings 5 and 6 are relatively close, for both the default rate and the failure rate, suggesting limited discrimination between companies in the two categories. However, the corrective measures implemented in 2013 helped to improve the differentiation between both ratings 5 and 6, and as a result, there is a more marked divergence between the two since 2013.

Graph 1. Failure rates since 2009 One-year failure rate Eligible one-year failure rate Non eligible one-year failure rate 33,33% 2,00% 1,40% 35,00% 1,80% 1,20% 30,00% 1,60% 1,00% 25,00% 1,40% 13,41% 0,80% 1,20% 20,00% 1,00% 0,60% 15,00% 0,80% 0,40% 10,00% 0,60% 2,77% 0,08% 0,20% 1,62% 5,00% 0,40% 0,38% 0,42% 0,00% 0,20% 0.00% ullimi... 0,00% 9 TOTAL 0,00% 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 ■ 2009 ■ 2010 ■ 2011 ■ 2012 ■ 2013 ■ 2014 ■ 2015 ■ 2009 ■ 2010 ■ 2011 ■ 2012 ■ 2013 ■ 2014 ■ 2015 ■ TOTAL ■ 2016 ■ 2017 ■ 2018 ■ 2019 ■ 2020 ■ 2021 ■ 2016 ■ 2017 ■ 2018 ■ 2019 ■ 2020 ■ 2021 Three-year failure rate Eligible three-year failure rate Non eligible three-year failure rate 5,00% 5,00% 60,00% 4,50% 4,50% 50,00% 4,00% 4,00% 29,83% 3,50% 3,50% 40,00% 3,00% 3,00% 24,21% 2,50% 30,00% 2,50% 2,00% 0,98% 2,00% 20,00% 1,50% 9,23% 1,50% 1,00% 6,23% 10,00% 1,00% 0,50% 2,01% 0,01% 0,00% 0,50% 3++ 9 TOTAL 0,00% 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 ■ 2007 ■ 2008 ■ 2009 ■ 2010 ■ 2011 ■ 2012 ■ 2013 ■ 2007 ■ 2008 ■ 2009 ■ 2010 ■ 2011 ■ 2012 ■ 2013 ■TOTAL ■ 2014 ■ 2015 ■ 2016 ■ 2017 ■ 2018 ■ 2019 ■ 2014 ■ 2015 ■ 2016 ■ 2017 ■ 2018 ■ 2019

Graph 2. Default rates since 2009 One-year default rate Eligible one-year default rate Non eligible one-year default rate 2,00% 45,00% 1,80% 40,00% 1,20% 1,60% 35,00% 23,28% 1,40% 1,00% 30,00% 1,20% 25,00% 0,80% 1,00% 20,00% 0,60% 16,26% 0,80% 15,00% 0,40% 0,60% 10,00% 1.69% 0,20% 0,40% 5,00% 0.00% 0,01% 0,00% 0,40% 0,45% 0,00% 0,20% 0,00% 3++ TOTAL 0,00% 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2009 2010 2011 2012 2013 2014 2015 ■ 2009 ■ 2010 ■ 2011 ■ 2012 ■ 2013 ■ 2014 ■ 2015 ■ TOTAL ■ 2016 ■ 2017 ■ 2018 ■ 2019 ■ 2020 ■ 2021 ■ 2016 ■ 2017 ■ 2018 ■ 2019 ■ 2020 ■ 2021 Three-year default rate Eligible three-year default rate Non eligible three-year default rate 6,00% 6,00% 70,00% 60,00% 5,00% 5,00% 40,22% 50,00% 4,00% 4,00% 40,00% 3,00% 3,00% 30,00% 2,00% 20,00% 2,00% 1,00% 10,00% _0,30% 1,00% 2,09% 0,11% 0,01% 0.00% 0.00% TOTAL 0,00% 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 ■ 2007 ■ 2008 ■ 2009 ■ 2010 ■ 2011 ■ 2012 ■ 2013 ■ 2007 ■ 2008 ■ 2009 ■ 2010 ■ 2011 ■ 2012 ■ 2013 ■ TOTAL ■ 2014 ■ 2015 ■ 2016 ■ 2017 ■ 2018 ■ 2019 **■** 2014 **■** 2015 **■** 2016 **■** 2017 **■** 2018 **■** 2019

The Gini index illustrates the discriminatory power of the rating system more synthetically. The higher the index, the greater the discriminatory power of the rating system. The table 2 shows that the Gini index trends increases over time.

Table 2. Gini index trend

Gini Inde	ex	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
One-year failui	re rate			70%	71%	70%	73%	72%	72%	75%	75%
Two-year failui	re rate		65%	65%	66%	67%	67%	67%	68%	71%	
Three-year fail	ure rate	59%	61%	61%	63%	62%	63%	63%	66%		

	Gini Index	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
0	ne-year default rate			71%	72%	71%	74%	73%	73%	75%	75%
T	wo-year default rate		65%	66%	67%	67%	68%	67%	69%	71%	
T	hree-year default rate	59%	61%	62%	63%	63%	64%	64%	66%		

Source: Banque de France, Companies Directorate

2.3. Stability of companies' rating within the risk classes (transition matrix)

The transition matrix below shows the evolution of companies' ratings from one rating notch to another between 1 January 2021 and 31 December 2021.⁴ Thus, this matrix allows to measure the scale of the shifts between ratings over a given period (both in terms of number of companies switching to a different rating and in terms of number of notches they moved up or down), as well as the stability of the individual ratings. The main diagonal shows companies that stayed in the same rating notch, while the rest of the matrix shows companies whose ratings have changed (Table 3).

Table 3: One-year transition matrix for companies rated on January 1st 2021

							At 31/1	2/2021						Incoming	Outcoming	Total	Default within 1
		3++	3+	3	4+	4	5+	5	6	7	8	9	P	3++ to P	Outcoming	Iotai	year
	3++	78,52%	8,95%	4,34%	1,45%	0,70%	0,87%	0,02%	0,28%	0,00%	0,00%	0,00%	0,00%	9 034	462	9 496	0
	3+	12,31%	60,75%	14,66%	4,31%	1,88%	0,83%	0,13%	0,23%	0,00%	0,01%	0,00%	0,00%	15 393	789	16 182	0
	3	1,93%	14,51%	59,93%	12,17%	4,14%	1,41%	0,18%	0,18%	0,00%	0,00%	0,00%	0,00%	25 298	1 492	26 790	1
	4+	0,31%	2,10%	19,30%	50,51%	15,41%	3,51%	0,44%	0,21%	0,01%	0,01%	0,00%	0,00%	33 028	2 949	35 977	5
7	4	0,08%	0,25%	3,13%	19,57%	54,37%	11,25%	1,36%	0,34%	0,07%	0,02%	0,00%	0,01%	48 392	5 111	53 503	47
720	5+	0,13%	0,16%	0,49%	2,38%	16,55%	50,91%	9,72%	2,21%	0,27%	0,12%	0,02%	0,09%	53 915	11 004	64 919	261
01/01/2021	5	0,10%	0,12%	0,26%	0,66%	5,19%	27,05%	37,36%	9,88%	0,71%	0,24%	0,03%	0,28%	16 405	3 626	20 031	338
	6	0,15%	0,12%	0,37%	0,47%	1,23%	11,64%	12,11%	48,55%	0,73%	0,31%	0,02%	0,43%	7 707	2 416	10 123	287
¥	7	0,00%	0,00%	0,00%	0,20%	0,81%	16,06%	14,84%	13,82%	10,57%	9,96%	0,61%	2,24%	340	152	492	80
	8	0,00%	0,00%	0,00%	0,00%	0,00%	6,35%	14,29%	10,05%	8,47%	22,75%	2,12%	2,12%	125	64	189	44
	9	0,00%	0,00%	0,00%	0,00%	0,00%	4,76%	14,29%	0,00%	23,81%	14,29%	9,52%	4,76%	15	6	21	
	P	0,00%	0,00%	0,00%	0,00%	0,00%	0,53%	1,07%	35,29%	0,80%	0,00%	0,00%	10,70%	181	193	374	
	Total	4,88%	7,4%	13,28%	16,42%	22,89%	22,69%	7,67%	4,25%	0,24%	0,13%	0,01%	0,10%	209 833	28 264	238 097	1 063

Source: Banque de France, Companies Directorate

Note: Due to the sample outcomings, the total of each row is less than 100%.

- The ratings taken into account at the beginning of the period (in this case January 1st 2021) are those attributed on the basis of company financial statements (which explains the absence of 0 ratings). This may not always be the case at the end of the period.
- The "Outcoming" column shows companies that were excluded from the sample over the period. Those companies were rated 3++ to P on 1 January, based on their financial statements, then attributed a rating of 0 on 31 December, meaning that the Banque de France no longer had any sufficiently recent financial assessments to carry out a meaningful analysis, and had not received any unfavourable information on the company.
- The "Default within 1 years" column reports the numbers of defaults during the year 2021 according to the rating at the beginning of the year, regardless of the rating at the end of the year or the exit from the scope of rating system.
- The "Total" row shows the breakdown of companies by credit rating at the end of the year.
- The diagonal shows, for each rating, the share of companies whose rating remained unchanged between the beginning and the end of the year.

⁴ The method used to compile the matrix is described in greater detail in Appendix 2.

• The tridiagonal shows companies whose rating changed by a maximum of one notch between the beginning and end of 2021. For example, a company rated 3 at 1 January and then 3+, 3 or 4+ at 31 December will appear in the tridiagonal.

The 2021 one-year transition matrix shows that a high percentage of ratings remains stable from one year to the next, especially for the eligible rating classes (tables 3 & 4). Overall, 60% of companies have the same rating from 1st January to 31 December 2021. The level of stability falls back to a level similar to the one seen at the pre-crisis period (59% in 2019), likewise, the improvement rate (Table and Graph 4).

The year 2020 was indeed exceptional, as the uncertainty created by the crisis led to an increase in the percentage of companies in the stability diagonal, and decrease in rating upgrades while rating downgrades remained relatively stable with respect to previous years.

This stability in the ratings can also be seen over the 2013-2021 period (main diagonals and tridiagonals).

Outside this stability diagonal, the darker the color of the lower triangle of this matrix, the greater the upgrading rate at the end of the period (column rating) (Table 3).

Moreover, the proportion of companies with the higher ratings as of 1 January 2021 (3+, 3+ and 3) and receiving a credit rating less favorable than 4 a year later ⁵ remains very low. Thus, out of 49,725 companies rated from 3 ++ to 3 as of 1 January 2021, only 778 were rated less favorable than 4 as of 31 December 2021, i.e. an overall proportion of nearly 1.6%.

Symmetrically, 0.8% of companies located in the least favorable risk classes as of 1 January 2021 (rating less than or equal to 5+) received, one year later, a rating higher than 4+ (i.e. 667 companies out of 78,688).

Table 4: Comparison of rating changes from 2013 to 2021

	2013	2014	2015	2016	2017	2018	2019	2020	2021
Diagonal	61%	62%	59%	60%	61%	59%	59%	69%	60%
Tridiagonal	90%	91%	91%	91%	92%	91%	91%	92%	92%
Upgrade rate ⁶	16%	18%	20%	21%	23%	24%	22%	11%	23%
Downgrade rate ⁷	22%	20%	21%	19%	17%	17%	19%	20%	16%

Source: Banque de France, Companies Directorate

⁵ Ratings less favorable than 4 are: 5+, 5, 6, 7, 8, 9 and P.

⁶ Expressed as the ratio of companies whose rating was upgraded over the year to the total number of companies.

⁷ Expressed as the ratio of companies whose rating was downgraded over the year to the total number of companies.

APPENDICES

Appendix 1 Definition and method of calculation of failure and default

Appendix 2 Failure and default rates for different time horizons (1, 2 or 3 years)

Appendix 3 Method used to create rating transition matrices

Appendix 1 Definition and method of calculation of failure and default

I. Definition of failure and default

In the context of its ECAI status, the Banque de France uses two definitions, corresponding to a more or less broad definition of default:

- A company is said to be "in failure" if legal proceedings have been initiated against it (receivership or judicial liquidation): in this case, the company is rated P. Even if the company is subsequently upgraded, for example after implementing a business continuity plan, it will still be classified as "in failure" for statistical calculations.
- A company is said to be "in default" if it meets the above criteria (i.e. legal proceedings have been initiated) or has been attributed a rating of 9 over the period due to the reporting of significant payment incidents by one or more credit institutions. The period taken into consideration in determining the rating is the six previous months. If, after receiving a rating of 9, a company once again resumes regular payments on its debts, it may be upgraded from the "default" category and assigned a higher rating, subject to a comprehensive assessment of its position by an analyst. For the purpose of statistical calculations, however, the company will continue to be classified as "in default".

This definition differs from the concept of default under Basel II, as defined in Regulation (EU) No 575/2013.

By definition, the default rate calculated for a given population is always greater than or equal to the failure rate, and the default rate for companies initially rated 9 is 100%.

The notion of failure constitutes an objective approach to credit risk⁸. It is widely and almost immediately available after the declaration has been made.

The notion of default, which is broader, is based on data from the national database of trade bill payment incidents (CIPE – fichier Central des Incidents de Paiement sur Effets), which is managed by the Banque de France under Regulation No. 86-08 of the Banking Regulation Committee of 27 February 1986. The CIPE contains details of all trade bill payment incidents⁹ reported by credit institutions. The materiality of these payment incidents will determine the rating attributed: a rating of 7¹⁰ indicates there have been relatively small-scale payment incidents in the previous six months where the company has found itself unable to pay; 8 indicates that, on the basis of the payment incidents reported over the previous six months, the company's solvency appears to be at risk; and 9 indicates that, on the basis of the payment incidents reported over the previous six months, the company's solvency is seriously compromised.

⁸ It is objective in the sense that it is based entirely on external information that is not open to interpretation by the analyst.

Accepted trade bills and electronic trade bills, promissory notes and electronic promissory notes, accepted bills issued for the collection of receivables giving rise to the mobilisation of unguaranteed commercial credit, tax credits, unaccepted trade bills and electronic trade bills, as well as unaccepted bills issued for the recovery of receivables giving rise to the mobilisation of unguaranteed commercial credit.

 $^{^{10}}$ Up to 31 December 2010, this rating was only used for companies whose financial statements had not been analysed.

Compared with "failure", using payment incidents to assess a company's financial health provides an earlier and more comprehensive indicator of default. Indeed, the high delinquency rate for companies rated 9, which have experienced major payment incidents and a low probability of return to profitability, justifies classifying this rating as a default. This type of default nonetheless differs from the definition set out in Article 178 of Regulation (EU) No. 575/2013 of the European Parliament and of the Council on prudential requirements for credit institutions and investment firms.¹¹

The Banque de France's definition of default is limited to trade bill payments and does not take into account all of a company's outstanding debts. However, given the importance of trade credit as a means of corporate financing, it is particularly useful to take these payment incidents into account when assessing a company's credit risk.

This notion of default also has a number of advantages in terms of its predictive capacity and stability – both of which are important requirements:

- It is sufficiently predictive, meaning a default on trade bills often precedes a default on bank loans, which in turn generally precedes a bond default and a "legal" default consisting in the opening of legal proceedings: a company's difficulties are generally brought to light during these two latter stages.
- It is sufficiently stable, in that there is no excessively rapid or high rate of return to the "sound" rating categories.

II. Method for quantifying failure and default rates for the different ratings

The ex-post observed default rate¹² is determined using a "fixed" method over a strictly defined time horizon (1, 2 or 3 years) starting from 1 January of the year in question. The observed default rate is calculated as the ratio between the following:

- the denominator, which takes into account all the companies rated by the Banque de France on the basis of their valid financial statements¹³ as at 1 January of the year under review;
- the numerator, which takes into account all companies which were downgraded to the default category during the period¹⁴ under review.

The ex-post observed failure rate is calculated using the same method, but in this case, the numerator consists of all companies for which legal proceedings were initiated during the period under review.

¹¹ Definition applied by the Eurosystem as a performance measure for the rating systems used by central banks with In-House Credit Assessment System (ICAS) status.

¹² Rates are calculated for the entire population of companies monitored by the Banque de France, broken down by rating. Thus, each of the ratings attributed by the Banque de France has its own specific failure and default rates.

Note: ratings are legally valid for a period of 20 months as of the closing date of the financial statements on which they are based. As a result, if the Banque de France receives no further financial statements after these 20 months have expired, the company loses its rating and is no longer taken into account in the default statistics for the subsequent period.

¹⁴ 1, 2 or 3 years, as of 1 January.



Appendix 2 Failure and default rates for different time horizons (1, 2 or 3 years)

	Number of	Failure wi	thin 1 year	Default wi	thin 1 year
Credit rating	companies rated as of 31 december 2020	Number	Rate	Number	Rate
3++	9 496	0	0,00%	0	0,00%
3+	16 182	0	0,00%	0	0,00%
3	26 790	1	0,00%	1	0,00%
4+	35 977	5	0,01%	5	0,01%
4	53 504	43	0,08%	47	0,09%
5+	64 918	246	0,38%	261	0,40%
5	20 031	325	1,62%	338	1,69%
6	10 123	280	2,77%	287	2,84%
7	492	66	13,41%	80	16,26%
8	189	23	12,17%	44	23,28%
9	21	7	33,33%		
Total	237 723	996	0,42%	1 063	0,45%

	Number of	Failure wit	hin 2 years	Default within 2 years			
Credit rating	companies rated as of 31 december 2019	Number	Rate	Number	Rate		
3++	12 371	0	0,00%	0	0,00%		
3+	20 753	3	0,01%	3	0,01%		
3	33 241	15	0,05%	15	0,05%		
4+	43 716	48	0,11%	51	0,12%		
4	60 289	221	0,37%	225	0,37%		
5+	63 831	715	1,12%	744	1,17%		
5	21 437	805	3,76%	821	3,83%		
6	12 532	790	6,30%	798	6,37%		
7	1 386	183	13,20%	200	14,43%		
8	748	134	17,91%	188	25,13%		
9	80	22	27,50%				
Total	270 384	2 936	1,09%	3 045	1,13%		

	Number of	Failure wit	hin 3 years	Default wit	thin 3 years
Credit rating	companies rated as of 31 december 2018	Number	Rate	Number	Rate
3++	11 929	1	0,01%	1	0,01%
3+	20 568	14	0,07%	14	0,07%
3	31 945	33	0,10%	34	0,11%
4+	43 050	125	0,29%	128	0,30%
4	60 117	591	0,98%	604	1,00%
5+	62 248	1 487	2,39%	1 536	2,47%
5	20 973	1 306	6,23%	1 341	6,39%
6	12 418	1 146	9,23%	1167	9,40%
7	1 565	340	21,73%	376	24,03%
8	905	270	29,83%	364	40,22%
9	95	23	24,21%		

Total	265 813	5 336	2,01%	5 565	2,09%
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Appendix 3 Method used to create rating transition matrices

The "transition matrix" refers to companies' ratings changes between two given dates (in this case 1 January and 31 December of a calendar year). The start date and end date are the same for all companies.

The objective is to provide a "snapshot" of the evolution of ratings at the given dates: events¹⁵ that may have occurred between those two dates are not taken into account. Only the ratings assigned at the start and at the end of the period are taken into account in the transition matrix.

Example

A company rated C5+ at the start of the period (1 January) was downgraded to C8 during the period, then upgraded to D5, which was its rating as on 31 December.

The matrix only takes into account the change from 5+ to 5.

In addition, no distinction is made between a company whose rating at 1 January was assigned six months previously and a company assigned that rating just two days prior to 1 January.

Evolution of companies' ratings:

- The companies taken into account at **the beginning of the period** are rated on the basis of their latest financial statements. As a result, only those with the following ratings are included: 3++, 3+, 3, 4+, 4, 5+, 5, 6, 7, 8, 9 or P.
- At the end of the period, some companies may no longer be rated for various reasons. ¹⁶ As a result, the following ratings may be included: 3++, 3+, 3, 4+, 4, 5+, 5, 6, 7, 8, 9, P and 0. A credit rating attributed without recent financial statements will always be lower than 4.

The share of companies in each rating category that were no longer rated on the basis of their financial statements on 31 December 2021 is shown below (in %):

Rating as of 1 Jan. 2021	3++	3+	3	4+	4	5+	5	6	7	8	9	Р	Overall
No recent financial statements	4,85%	4,87%	5,56%	8,19%	9,53%	16,85%	17,98%	23,64%	31,31%	33,68%	28,57%	63,79%	11,98%

¹⁵ Including a failure (P rating) or payment default (9 rating).

- the company has not provided the Banque de France with financial statements for the subsequent year;
- the company no longer meets the minimum turnover requirement to be assessed (i.e. EUR 750,000);
- the company no longer exists;
- other (particularly long financial year, etc.).

¹⁶ There are various reasons why a company might no longer be rated on the basis of its financial statements after a year:

as <u>of</u> at							
31 Dec. 2021							

The proportion of companies no longer rated on the basis of their financial statements rises as we move down the rating scale: the lower the rating at the start of the year, the greater the likelihood that a company will not provide financial statements for the following year. The 63.79% share for the P rating is thus attributable to the fact that, on January 1, the companies concerned were already dealing with the start of legal proceedings such as a restructuring or liquidation and as a result the majority were unable to submit financial statements over the year.

Sub-total of the matrix

Rows

The matrix rows show the breakdown of companies by credit rating (3++, etc.) at the start of the period.

The "Total" row shows the breakdown of companies by credit rating at the end of the period.

Columns

The matrix columns show the breakdown of companies by credit rating (or "status") at the end of the period.

The "Incoming 3++ to P" column shows the number of companies with a rating given at the start of the period and a significant rating at the end of the period.

The "Outgoing" column shows the number of companies in each rating category that exited the sample, i.e. whose rating based on their financial statements was no longer significant at the end of the period.

The "Total" column shows the number of companies in each rating category at the beginning of the period.