

# Idealized Rates Benchmark

Fedafin's annual update on idealized rates for expected loss (EL) and probability of default (PD)

January 2023

## Scope of application

Fedafin's idealized rates benchmark is used for both model based rating assignment and validation purposes. Model based expected loss (EL) analysis is a particularly powerful contribution to rating assignments to, for example, structured finance debt instruments, structured transaction's debt instruments, asset secured loans and bonds or investment companies.

## Construction

The benchmark is generated by performing matrix exponentiation based on an underlying rating transition matrix built on both internal and external data for historical transition rate evidence. Further adjustments are made for computational consistency and smoothing purposes. Therefore, an "idealized" benchmark for PD is produced.

By multiplying the resulting benchmark rates for PD with the common assumption for LGD being 50%, we arrive at the

idealized expected loss rate benchmark for each rating category. The assignment of an expected loss rating corresponds to the idealized rate benchmark of the rated instrument's weighted average remaining life to maturity. A model based EL estimate of 4.65% for a debt instrument with tenor of 10 years would, for example, lead to an expected loss rating assignment of Ba+ (see annex).

## Rating assignment and TTC

Fedafin acknowledges the somewhat arbitrary element of idealized benchmark rates. Nevertheless, a final rating assignment relies on complementary criteria as well including, at least, forward-looking qualitative risk factors. Also, the benchmark approach builds on rates averaged over several decades of data history. This contributes significantly to stability in rating assignments in accordance with through-the-cycle (TTC) requirements.

**Annex 1: Idealized cumulative EL benchmark**

Years	Aaa	Aa+	Aa	Aa-	A+	A	A-	Baa+	Baa	Baa-	Ba+	Ba	Ba-	B+	B	B-	C
1	0.00%	0.00%	0.01%	0.02%	0.03%	0.03%	0.03%	0.06%	0.09%	0.16%	0.23%	0.35%	0.66%	1.34%	2.16%	4.23%	13.64%
2	0.00%	0.01%	0.03%	0.04%	0.06%	0.07%	0.08%	0.13%	0.20%	0.36%	0.55%	0.85%	1.54%	2.99%	4.84%	8.82%	21.94%
3	0.01%	0.01%	0.05%	0.07%	0.10%	0.11%	0.13%	0.23%	0.33%	0.61%	0.96%	1.47%	2.59%	4.82%	7.72%	13.14%	27.29%
4	0.01%	0.03%	0.07%	0.10%	0.14%	0.16%	0.20%	0.33%	0.49%	0.90%	1.44%	2.20%	3.78%	6.77%	10.61%	16.98%	30.94%
5	0.02%	0.04%	0.10%	0.13%	0.18%	0.22%	0.29%	0.46%	0.68%	1.23%	1.99%	3.03%	5.06%	8.75%	13.40%	20.31%	33.57%
6	0.03%	0.06%	0.13%	0.17%	0.24%	0.29%	0.38%	0.61%	0.90%	1.61%	2.59%	3.93%	6.41%	10.73%	16.02%	23.18%	35.56%
7	0.04%	0.08%	0.17%	0.22%	0.30%	0.37%	0.49%	0.77%	1.14%	2.01%	3.24%	4.88%	7.80%	12.66%	18.46%	25.65%	37.13%
8	0.06%	0.11%	0.22%	0.27%	0.36%	0.46%	0.62%	0.96%	1.41%	2.45%	3.94%	5.88%	9.21%	14.53%	20.70%	27.79%	38.40%
9	0.08%	0.14%	0.26%	0.33%	0.44%	0.57%	0.75%	1.16%	1.70%	2.93%	4.67%	6.91%	10.62%	16.32%	22.74%	29.65%	39.46%
10	0.10%	0.18%	0.32%	0.40%	0.52%	0.68%	0.91%	1.38%	2.02%	3.42%	5.42%	7.96%	12.00%	18.03%	24.61%	31.28%	40.36%

**Annex 2: Idealized cumulative PD benchmark**

Years	Aaa	Aa+	Aa	Aa-	A+	A	A-	Baa+	Baa	Baa-	Ba+	Ba	Ba-	B+	B	B-	C
1	0.00%	0.00%	0.02%	0.04%	0.06%	0.06%	0.07%	0.12%	0.18%	0.31%	0.46%	0.70%	1.33%	2.69%	4.33%	8.45%	27.27%
2	0.01%	0.01%	0.06%	0.08%	0.12%	0.13%	0.16%	0.27%	0.40%	0.72%	1.11%	1.69%	3.08%	5.98%	9.68%	17.64%	43.89%
3	0.01%	0.03%	0.10%	0.13%	0.19%	0.22%	0.27%	0.45%	0.67%	1.22%	1.92%	2.94%	5.19%	9.65%	15.44%	26.28%	54.59%
4	0.03%	0.05%	0.14%	0.19%	0.27%	0.32%	0.41%	0.67%	0.99%	1.80%	2.88%	4.41%	7.56%	13.53%	21.22%	33.95%	61.89%
5	0.04%	0.08%	0.20%	0.27%	0.37%	0.44%	0.57%	0.93%	1.37%	2.47%	3.97%	6.05%	10.13%	17.50%	26.80%	40.61%	67.15%
6	0.06%	0.12%	0.27%	0.35%	0.47%	0.58%	0.76%	1.22%	1.80%	3.21%	5.18%	7.85%	12.83%	21.45%	32.05%	46.35%	71.13%
7	0.09%	0.17%	0.34%	0.44%	0.59%	0.74%	0.98%	1.55%	2.28%	4.03%	6.48%	9.76%	15.61%	25.32%	36.92%	51.30%	74.26%
8	0.12%	0.22%	0.43%	0.54%	0.73%	0.93%	1.23%	1.92%	2.82%	4.91%	7.87%	11.76%	18.42%	29.06%	41.39%	55.58%	76.80%
9	0.16%	0.29%	0.53%	0.66%	0.88%	1.13%	1.51%	2.32%	3.41%	5.85%	9.33%	13.82%	21.23%	32.65%	45.49%	59.30%	78.92%
10	0.20%	0.36%	0.64%	0.79%	1.05%	1.36%	1.81%	2.77%	4.04%	6.85%	10.84%	15.92%	24.01%	36.06%	49.22%	62.56%	80.72%

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