

HOW MOODY'S CALCULATES CREDIT RISK.

EXPLAINING EDF

MOODY'S KMV EXPECTED DEFAULT FREQUENCY (EDF) is a measure of the probability that a company will fail to make scheduled debt payments over a specified period—typically one year. EDF scores range from 0.02% (the safest credit) to 20% (imminent default). Conservative financial policies have pushed the EDFs of Europe's 100 largest debt issuers to historic lows, with 37 companies achieving a 0.02% EDF score this year, up from 16 two years ago. Here is a closer look at the key values that MKMV uses, via a proprietary model, to determine a company's EDF.

First, MKMV measures the level of a company's obligations. This is the company-specific level of the market value of its assets, below which it would fail to make scheduled debt payments. The estimate reflects the observation of thousands of defaulting companies since 1974, and of how each firm's "default point" acted in relation to the market value of its assets at the time.

Next, MKMV calculates the current market value of the

company's assets. This measure reflects the market's view of the enterprise value of the company, as determined by its equity value, equity volatility and liability structure. MKMV treats the company's equity value as a call option on its underlying assets, allowing it to determine a company's market value from the market characteristics of its equity value and the book value of its liabilities.

The ratio of a company's default point to the market value of its assets is its "market leverage."

The vulnerability of market value to large changes ("asset volatility") is a measure of the business risk of the company—technically, the standard deviation of the annual percentage change in the market value of assets. The higher the asset volatility, the less certain investors are about the market value of the company, and the more likely its value will fall below its default point. ■

WHERE CREDIT IS DUE

Ranking Europe's 100 largest debt issuers by their Expected Default Frequency

COMPANY	EXPECTED DEFAULT FREQUENCY (EDF)		MARKET LEVERAGE*		ASSET VOLATILITY**	
	CURRENT %	% CHANGE***	CURRENT %	% CHANGE***	CURRENT %	% CHANGE***
CHRISTIAN DIOR (France)	0.02%	-97.27%	48.18%	-34.85%	8.06%	-27.45%
TELECOM ITALIA (Italy)	0.02	-96.71	61.94	-28.92	7.64	-17.87
LVMH (France)	0.02	-95.24	27.79	-38.40	13.62	-32.59
SAINT GOBAIN (France)	0.02	-94.47	58.26	-7.03	6.64	-50.75
BMW (Germany)	0.02	-94.03	66.65	0.03	6.76	-45.57
ARCELOR (Luxembourg)	0.02	-92.50	48.25	-37.42	8.41	-0.07
ACS (Spain)	0.02	-93.05	57.04	-1.11	5.95	-45.08
ANGLO AMERICAN (UK)	0.02	-91.08	24.52	-36.63	15.23	-19.09
TELEFONICA (Spain)	0.02	-90.10	48.35	1.57	10.68	-38.78
BHP BILLITON (UK/Australia)	0.02	-88.73	17.25	-48.24	17.54	-16.50
ROYAL DUTCH SHELL (UK/Netherlands)	0.02	-83.83	34.50	-0.43	12.36	-21.45
LAFARGE (France)	0.02	-82.97	47.12	-29.99	8.71	-10.21
ELECTRABEL (Belgium)	0.02	-82.40	40.11	-18.91	8.52	-27.95
IBERDROLA (Spain)	0.02	-82.33	47.09	-12.55	9.23	-16.91
TESCO (UK)	0.02	-80.56	30.14	-27.54	10.81	-29.68
BRITISH AMERICAN TOBACCO (UK)	0.02	-80.52	29.44	-35.92	10.36	-27.74
REPSOL-YPF (Spain)	0.02	-74.85	44.70	-31.31	9.84	11.10
BP (UK)	0.02	-70.07	34.32	-1.88	10.18	-29.60
TOTAL (France)	0.02	-67.48	30.72	-17.94	10.21	-30.05
HOLCIM (Switzerland)	0.02	-65.84	48.70	-21.20	8.51	-14.29
NORSK HYDRO (Norway)	0.02	-60.41	29.61	-46.64	13.59	40.71
INBEV (Belgium/Brazil)	0.02	-55.49	32.64	-19.23	12.28	0.32
E.ON (Germany)	0.02	-55.29	52.84	-27.96	7.24	0.31
BASF (Germany)	0.02	-51.91	34.77	-22.50	10.89	-11.99
ENEL (Italy)	0.02	-51.34	40.92	-26.84	9.42	19.31
ELF (France)	0.02	-44.78	32.60	-38.55	10.25	9.09
DANONE (France)	0.02	-32.97	31.81	-13.83	9.98	-26.07
STATOIL (Norway)	0.02	-30.16	24.29	-48.33	11.65	21.62
DIAGEO (UK)	0.02	-13.66	21.51	-39.51	9.58	-22.57

* Market leverage is the ratio of a company's default point to the market value of its assets ** Asset volatility is the standard deviation of the annual percentage change in the market value of a company's assets *** Change from same measure three years ago. Time frame of study: April 2003 to April 2006.

COMPANY	EXPECTED DEFAULT FREQUENCY (EDF)		MARKET LEVERAGE*		ASSET VOLATILITY**	
	CURRENT %	% CHANGE***	CURRENT %	% CHANGE***	CURRENT %	% CHANGE***
ROCHE (Switzerland)	0.02	0.00	13.18	-60.10	12.67	2.65
NOVARTIS (Switzerland)	0.02	0.00	14.52	3.32	10.74	-17.67
GLAXOSMITHKLINE (UK)	0.02	0.00	17.81	9.01	11.66	-7.61
SANOFI-AVENTIS (France)	0.02	0.00	21.86	104.09	12.54	-36.29
NESTLE (Switzerland)	0.02	0.00	26.29	-20.02	8.20	-23.02
ENI (Italy)	0.02	0.00	31.21	-20.08	9.64	-8.73
UNILEVER (UK/Netherlands)	0.02	0.00	35.31	-6.21	9.67	-13.10
AUTOSTRADA (Italy)	0.02	0.00	48.27	121.35	10.21	-28.28
KPN (Netherlands)	0.03	-98.02	44.98	-19.83	11.85	-51.06
DAIMLERCHRYSLER (Germany)	0.03	-95.69	78.62	-5.64	5.26	-44.34
VOLVO (Sweden)	0.03	-79.44	54.54	-22.03	8.53	-7.89
VINCI (France)	0.03	-76.24	56.99	-26.79	7.59	8.29
TELEFONICA MOVILES (Spain)	0.03	-60.54	30.89	-5.33	14.29	-21.21
VIVENDI (France)	0.04	-99.06	37.20	-55.73	12.55	-3.29
ROLLS-ROYCE (UK)	0.04	-97.53	48.30	-37.67	11.77	-12.11
LAGARDERE (France)	0.04	-95.34	59.98	-18.85	7.72	-38.69
MICHELIN (France)	0.04	-82.52	60.60	-15.51	8.90	-10.56
VODAFONE (UK)	0.04	-71.62	27.63	11.52	16.71	-28.88
NATIONAL GRID (UK)	0.04	-20.64	57.40	14.46	8.98	-12.96
BAE SYSTEMS (UK)	0.05	-97.89	57.40	-18.95	9.79	-39.16
DEUTSCHE TELEKOM (Germany)	0.05	-97.67	54.41	-12.93	10.67	-53.43
BT (UK)	0.05	-95.24	53.75	-12.79	9.73	-51.73
SUEZ (France)	0.05	-92.18	60.64	-25.18	8.62	-2.54
PORTUGAL TELECOM (Portugal)	0.05	-83.30	55.48	0.89	11.04	-31.44
ENBW (Germany)	0.05	-52.33	62.82	-15.61	8.10	14.00
THYSENKRUPP (Germany)	0.06	-95.90	66.85	-17.93	7.82	-32.47
EADS (Netherlands)	0.06	-95.10	59.89	-28.97	10.04	2.87
AIR FRANCE-KLM (France/Netherlands)	0.06	-95.09	76.01	-5.60	6.96	-38.24
VEOLIA ENVIRONNEMENT (France)	0.06	-89.22	61.94	-22.40	9.13	-3.55
ENDESA (Spain)	0.06	-79.96	56.57	-23.39	9.39	4.85
CASINO (France)	0.06	-74.06	63.64	3.42	8.78	-26.93
BOUYGUES (France)	0.07	-95.90	56.86	-19.03	9.17	-36.88
VOLKSWAGEN (Germany)	0.07	-89.68	82.23	-5.17	5.83	-29.24
EDP (Portugal)	0.07	-88.39	62.01	-0.45	8.45	-27.60
RWE (Germany)	0.07	-86.61	70.59	-17.73	7.56	-10.83
SCOTTISH POWER (UK)	0.07	-83.18	47.13	-17.36	11.18	-9.43
CARREFOUR (France)	0.07	-66.94	53.40	1.20	9.44	-24.92
FERROVIAL (Spain)	0.07	-35.83	66.78	-9.44	9.28	6.58
ABB (Switzerland/Sweden)	0.08	-99.31	39.53	-56.18	14.54	4.57
PPR (France)	0.08	-95.05	51.46	-28.94	10.92	-23.62
BAYER (Germany)	0.08	-93.55	49.52	-23.91	13.30	-23.84
PHILIPS (Netherlands)	0.08	-90.58	35.32	-22.15	16.41	-30.22
LUFTHANSA (Germany)	0.09	-90.32	68.31	-15.03	8.67	-31.20
CENTRICA (UK)	0.09	-77.61	49.05	9.91	10.56	-34.49
BRITISH AIRWAYS (UK)	0.10	-98.07	66.64	-23.00	10.12	-31.32
METRO (Germany)	0.10	-95.37	61.39	-10.75	8.84	-45.63
SIEMENS (Germany)	0.10	-92.44	46.81	-17.94	12.24	-36.38
MAN (Germany)	0.10	-87.23	54.26	-29.53	10.27	-15.40
RENAULT (France)	0.10	-87.02	65.89	-16.50	6.87	-26.31
UNION FENOSA (Spain)	0.12	-91.14	57.07	-23.62	10.70	-6.32
DEUTSCHE POST (Germany)	0.15	-18.32	86.35	-7.00	4.40	7.19
MITTAL STEEL (Netherlands)	0.16	-97.94	44.73	-50.82	17.20	12.16
AHOLD (Netherlands)	0.17	-93.69	62.12	-27.63	12.39	-8.93
FINMECCANICA (Italy)	0.17	-87.11	68.01	-7.10	8.82	-29.60
ERICSSON (Sweden)	0.21	-94.86	19.92	-60.00	26.56	-28.52
TUI (Germany)	0.27	-92.04	72.37	-13.32	9.62	-21.92
THALES (France)	0.31	-76.44	66.94	-16.85	9.21	-1.43
PEUGEOT (France)	0.33	-46.06	81.52	1.60	5.08	-31.24
FRANCE TELECOM (France)	0.35	-84.75	61.49	-10.00	14.29	-32.67
WPP (UK)	0.37	-71.84	55.36	1.96	13.89	-34.15
ALCATEL (France)	0.38	-95.91	46.77	-27.95	17.20	-50.36
FONCIERE EURIS (France)	0.39	-41.03	94.78	-0.38	5.97	-0.31
RALLYE (France)	0.53	-1.86	92.54	0.39	6.34	0.95
FIAT (Italy)	0.74	-50.14	81.17	-14.44	9.12	34.19
FINATIS (France)	0.88	16.39	95.68	-0.84	6.80	26.83
ALSTOM (France)	0.90	-95.51	62.10	-36.49	16.18	105.86
IFI (Italy)	1.87	5.73	93.75	-5.67	6.02	27.10

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