# Πιστοληπτική Αξιολόγηση Κρατικών Ομολόγων

Θετικές Προοπτικές για το 2026



- Introduction
- Global Model-Implied Sovereign Ratings
- Selected Rating Projections
- Appendix I: Data Description
- Appendix II: Sovereign Ratings Description
- Appendix III: Ratings Methodology

## Εισαγωγή

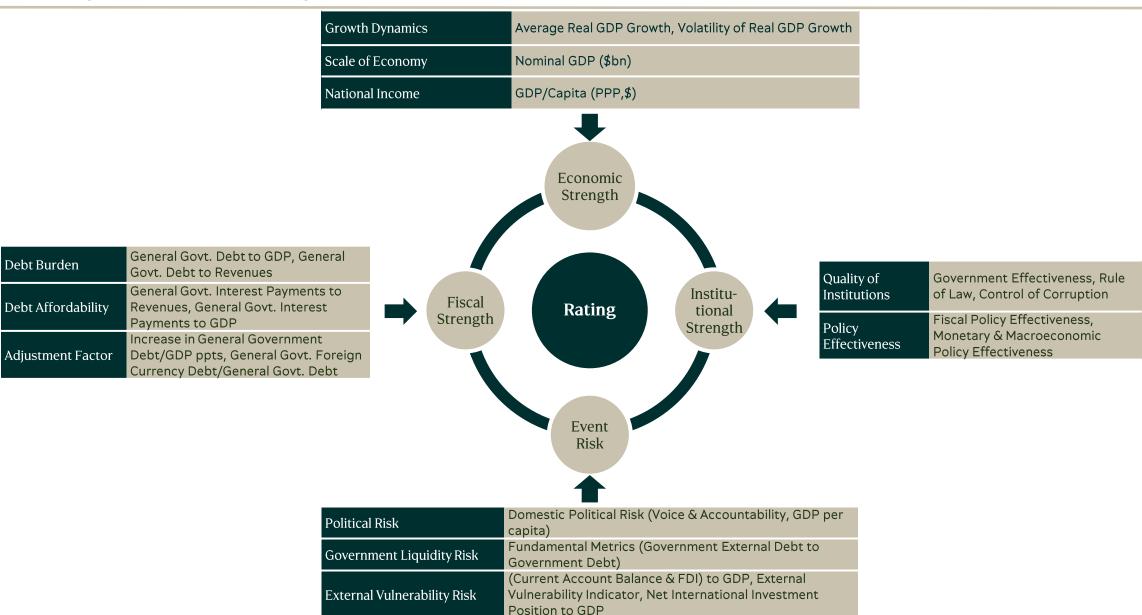
- Η αξιολόγηση της πιστοληπτικής βαθμίδας των κρατικών ομολόγων διαδραματίζει καθοριστικό ρόλο για την πορεία ανάπτυξης της κάθε οικονομίας καθώς επηρεάζει όχι μόνο το κόστος δανεισμού της κάθε οικονομίας - και σε εξαιρετικές περιπτώσεις ακόμα και τη δυνατότητα αυτής καθαυτής της πρόσβασης στις αγορές - αλλά και το κόστος δανεισμού ολόκληρης της οικονομίας, τραπεζών, επιχειρήσεων και εν τέλη νοικοκυριών.
- Για το λόγο αυτό είναι πολύ σημαντικό να μπορούμε να εκτιμήσουμε τόσο το εάν η πιστοληπτική βαθμίδα των κρατικών ομολόγων από τους διεθνείς οίκους αξιολόγησης αντανακλά με ορθό και αντικειμενικό τρόπο τα μακροοικονομικά δεδομένα και τα θεσμικά και (γεω)πολιτικά χαρακτηριστικά κάθε οικονομίας.
- Παράλληλα, είναι σημαντικό τόσο για λόγους χάραξης οικονομικής πολιτικής όσο και για λόγους εντοπισμού επενδυτικών ευκαιριών να μπορούμε να προβλέψουμε έγκαιρα τις μελλοντικές αποφάσεις των οίκων πιστοληπτικής αξιολόγησης.
- Τα γενικά συμπεράσματα του υποδείγματός μας μετά τη ανάλυση των δεδομένων 123 οικονομιών είναι ότι σε 27 περιπτώσεις η Moody's αποδίδει υψηλότερη αξιολόγηση από αυτή του υποδείγματός μας που είναι βασισμένο στα θεμελιώδη μεγέθη. Ευθυγράμμιση υπάρχει για 35 οικονομίες, ενώ 61 χώρες λαμβάνουν πιο συντηρητικές αξιολογήσεις σε σχέση με ό,τι υποδεικνύουν οι βασικοί τους δείκτες. Το υπόδειγμα τεσσάρων παραγόντων που χρησιμοποιούμε βασίζεται σε προβλέψεις σημαντικών μακροοικονομικών μεγεθών, ώστε να εκτιμήσει την πιθανότητα κάθε χώρας να πετύχει συγκεκριμένη πιστοληπτική βαθμίδα έως το 2026. Παρότι συνολικά αναμένεται περαιτέρω βελτίωση της πιστοληπτικής διαβάθμισης το 2026, προβλέπουμε επίσης αυξημένη συσσώρευση στις χαμηλότερες κατηγορίες της επενδυτικής βαθμίδας, καθώς και μεγαλύτερη συγκέντρωση στα ανώτερα επίπεδα της κατηγορίας υψηλής απόδοσης.
- Τέλος, εστιάζοντας στην ελληνική οικονομία συμπεραίνουμε ότι, μετά από μια μακρά περίοδο όπου η αξιολόγηση της πιστοληπτικής βαθμίδας των ελληνικών κρατικών ομολόγων δεν αντανακλούσαν μόνο την επιδείνωση των μακροοικονομικών δεδομένων αλλά και εξωγενείς παράγοντες και ιδιοσυγκρατικά ρίσκα, η πρόσφατη αναβάθμιση του ελληνικού δημοσίου σε Baa3 έρχεται να ευθυγραμμίσει πλήρως την «επίσημη» αξιολόγηση του ελληνικού αξιόχρεου με τις «θεωρητικές» εκτιμήσεις του υποδείγματος μας. Κοιτώντας στο μέλλον, εάν η θετική πορεία της ελληνικής οικονομίας διατηρηθεί, τότε η πρόβλεψη μας είναι για μια επιπλέον αναβάθμιση σε Baa2 κατά τη διάρκεια του 2026.

## Introduction

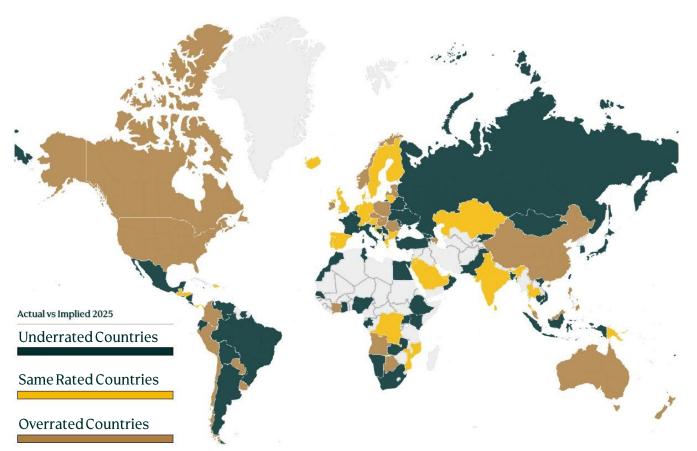
- Sovereign ratings play a vital role in determining funding costs for the public sector, corporations and financial institutions while also influencing investment decisions. When a nation's sovereign rating is strong, it typically facilitates easier and more affordable access to capital for both the government and private sector entities. Conversely, a lower sovereign rating can increase borrowing costs across the economy. We have updated our Global Sovereign Ratings Model to better identify discrepancies between agency sovereign ratings and those our assessments predict.
- o Since the publication of our previous report, "Rating Agencies Remain Conservative on a Global Level" in November 2023, several new challenges have emerged that affect sovereign ratings. Among these are heightened trade uncertainty and persistent geopolitical tensions, which have compounded the lingering secondary effects of the Covid-19 pandemic and the significant changes within the global energy landscape. These developments can have profound consequences for a country's fiscal health and stability. The Covid-19 pandemic led to widespread disruptions in economic activity, prompting increased government spending in many countries. This combination of reduced economic output and higher fiscal outlays has had a direct impact on national economic growth and investment decisions. Furthermore, ongoing geopolitical and trade tensions continue to cloud the economic outlook for many countries, adding layers of uncertainty to macroeconomic planning and investment strategies.
- o After examining data from 123 countries, we found that Moody's ratings align with ours in 35 cases. In 27 instances, Moody's assigns a higher rating than our fundamentals-based four-factor model, while 61 countries receive more conservative ratings than what their core indicators would indicate. Our Ratings Model uses forecasts of important financial metrics to predict how likely each country is to reach specific credit ratings by 2026. While overall credit quality is anticipated to improve further in 2026, we also foresee increased clustering within the lower quality segments of the Investment Grade category, alongside a higher concentration in the upper tiers of the High Yield classification.
- o Finally, we examine the four model factors influencing implied ratings across several focus countries and provide an analysis of Greece's sovereign credit developments since the release of our previous report.

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# Sovereign Four-Factor Ratings Model



# The Global Bird's-Eye View | Where Implied Ratings and Actual Ratings Differ



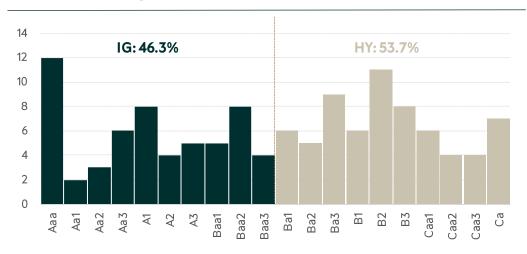
2025	Same Rating	Underrated	Overrated
# countries	35	61	27
% of total	28.5	49.5	22

Based on our results out of a total sample of 123 countries we rate, 35 match Moody's rating, 27 are given a "premium" rating by Moody's vs our fundamental rating and 61 are rated more conservative that what our model (fundamentals) imply.

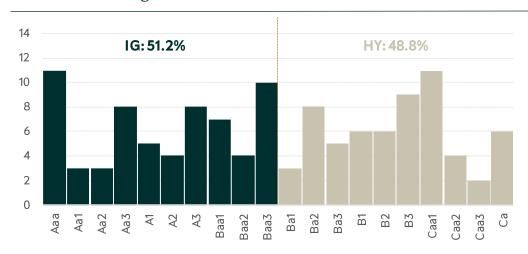


# Rating Distribution Trends | Overall Credit Quality is expected to continue to improve in 2026

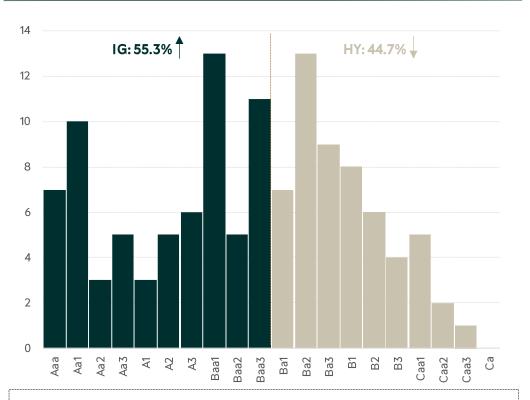
## 2022 Actual Ratings Distribution



## 2025 Actual Ratings Distribution



## 2026f Implied Ratings Distribution (# of countries per rating)



In 2026, implied ratings are expected to increase for 28 countries, decline for 7 and remain unchanged for 88, resulting in an Upgrade/Downgrade Ratio of 4.

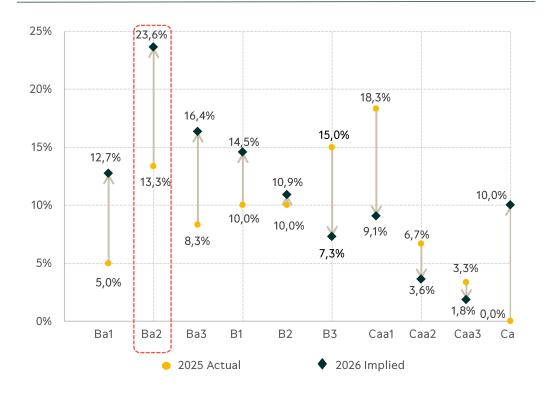
# Ratings Distribution | Implied Ratings Skew: Baa1 Dominance in IG, Ba2 Strength in HY

### IG Ratings Breakdown | Actual 2025 – 2026f implied



Implied ratings within the IG space are more concentrated in the lower quality range.

## HY Ratings Breakdown | Actual 2025 – 2026f implied



Implied ratings within the HY space are more concentrated in the upper quality range.



# Model-Driven Rating Decisions and Actual Ratings | Full Sample 1/3

Countries	Implied	l Rating	Actual	Non-Investment	Investment Grade	Confidence	Economic	Institutional	Fiscal	Event
	2026	2025	Rating	Grade Probability	Probability	2025	Strength	Strength	Strength	Risk
ALBANIA	Baa3	Baa3	Ba3	44.6	55.4	18.8	9.2	10.2	11.5	8.0
ANGOLA	Caa1	Caa1	В3	99.7	0.3	20.7	16.7	15.1	20.6	12.2
ARGENTINA	Ba1	Ba1	Caa1	60.6	39.3	16.1	6.1	13.5	14.6	11.0
ARMENIA	Ba1	Ba1	Ba3	60.6	39.5	16.2	7.9	10.6	14.4	11.6
AUSTRALIA	Aa1	Aa1		0	99.8	42.3	4.0	7.6	3.8	3.8
AUSTRIA	Aa1	Aa1	Aaa Aa1	0	99.7	46.3	5.5	8.9	6.4	3.0
AZERBAIJAN	Ba1	Ba1	Baa3	55.8	44.1	17.3	8.8	12.5	6.2	15.4
	Baa3	Baa3		36.3	63.6	18.8	8.7	7.3	17.7	3.4
BAHAMAS	B2	B1	B1 B2	91.7	8.3	28.9	7.3	10.1	26.0	14.3
BAHRAIN	Ba3	Ba3		85.8	14	27	6.6	16.3	15.6	14.0
BANGLADESH			B2		45.7	17.5	11.5	5.9	17.9	4.1
BARBADOS	Baa3	Ba1	B2	54.4	•	27.2			9.5	
BELARUS	Ba3	Ba3	Ca	86.3	13.8		9.3	15.4		16.7
BELGIUM	Aa1	Aa2	Aa3	0.1	99.8	36.5	5.3	8.8	8.5	4.1
BELIZE	Ba2	Ba3	Caa1	79.9	19.9	23.4	12.7	10.2	15.1	6.3
BOLIVIA	Caa1	Caa1	Ca	99.5	0.5	24.1	13.0	18.9	18.9	15.2
BOSNIA HERZEGOVINA	Ba1	Ba1	B3	63.5	36.6	16.8	9.5	13.4	8.7	11.0
BOTSWANA	Ba2	Ba2	Baa1	65.1	34.8	17.2	12.1	12.4	10.2	4.4
BRAZIL	Baa3	Baa3	Ba1	39.4	60.7	18.9	6.3	15.1	14.9	9.1
BULGARIA	Baa1	Baa1	Baa1	16.7	83.3	16.7	5.5	12.5	8.4	6.8
CAMBODIA	Ba2	Ba2	B2	77	23	21.7	12.1	11.0	9.2	12.8
CANADA	Aa2	Aa2	Aaa	0.1	99.8	28.8	4.8	5.1	9.6	3.1
CHILE	Baa1	Baa1	A1	12.8	87.3	17.2	2.7	12.7	12.2	15.0
CHINA	Baa1	Baa2	A2	26.1	73.8	16.8	6.9	11.0	7.8	11.1
COLOMBIA	Ba2	Ba2	Baa3	76.4	23.7	21.3	7.5	14.9	14.6	10.5
CONGO	В3	B3	B3	98.4	1.5	30.3	15.5	11.1	19.8	12.4
COSTA RICA	Baa1	Baa2	Ba2	20.9	79.2	17	7.0	7.0	14.6	6.5
COTE D'IVOIRE	Ba2	Ba3	Ba2	78.6	21.5	22.6	9.0	11.3	16.1	12.0
CROATIA	A3	A3	A3	6.1	93.7	18.8	5.5	11.3	4.8	5.5
CYPRUS	A2	A3	A3	5.6	94.4	19.9	8.2	5.6	4.6	4.9
CZECH REPUBLIC	A2	A3	Aa3	4.7	95.3	21.8	5.1	9.7	3.8	8.5
DEMOCRATIC REP. OF CONGO	B3	В3	Caa2	98.7	1.2	30.4	15.9	17.5	7.2	18.1
DENMARK	Aaa	Aaa	Aaa	0	100	86.1	5.3	4.0	2.3	2.5
DOMINICAN REP.	Ba2	Ba2	Ba2	70.5	29.5	18.5	6.8	12.7	19.6	7.3
ECUADOR	Ba3	Ba2	Caa3	72	28	18.9	9.8	9.3	16.5	10.2
EGYPT	B1	B2	Caa1	95.1	5	26.7	5.4	18.0	21.1	15.8
EL SALVADOR	B1	B1	В3	91.2	8.9	28.9	11.2	10.2	20.2	10.7
ESTONIA	A3	A2	A1	4.1	95.8	23.4	7.5	9.4	2.2	3.6
ETHIOPIA	B2	В3	Caa3	98	1.8	29.7	10.9	15.6	17.6	17.7
FIJI	Ba2	Ba3	B1	84.2	15.8	26	12.1	10.0	15.3	10.0
FINLAND	Aa1	Aa1	Aa1	0	99.9	58.3	5.7	5.7	7.3	3.4
FRANCE	Aa1	Aa1	Aa3	0	100	59.9	4.4	7.7	5.6	4.7

#### **Definitions**

#### Non-Investment Grade probability

- o Calculated by summing the probabilities assigned by the model to non-investment grade ratings, specifically: Ba1, Ba2, Ba1, B1, B2, B3, Caa1, Caa2, Caa3, Ca, C.
- o A higher non-investment grade probability signals a greater perceived credit risk.

#### Investment Grade probability

- o Calculated by summing the probabilities assigned to investment grade ratings, specifically: Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1, Baa2, Baa3.
- o A higher investment grade probability indicates enhanced stronger creditworthiness and lower default risk.

#### Confidence

- The maximum probability assigned by the model across all rating categories for 2025.
- o It reflects the model's confidence level in the estimation of the implied rating for 2025.



# Model-Driven Rating Decisions and Actual Ratings | Full Sample 2/3

Countries	Implied	Rating	Actual Rating	Non-Investment Grade Probability	Investment Grade Probability	Confidence	Economic Strength	Institutional Strength	Fiscal Strength	Event Risk	
	2026	2025			1100 400 1110 7	2025				11.011	
GABON	B1	Ba3	Caa2	84.5	15.4	26.3	9.7	11.1	16.9	12.8	
GEORGIA	Baa1	Baa3	Ba2	35.6	64.4	18.7	7.9	8.8	9.5	13.6	
GERMANY	Aaa	Aaa	Aaa	0	99.9	81.2	3.7	7.1	2.8	3.3	
GHANA	Ba3	B1	Caa1	90.7	9.2	28.9	9.6	15.4	16.0	10.9	
GREECE	Baa2	Baa3	Baa3	38.6	61.5	18.9	7.7	9.5	11.9	7.8	
GUATEMALA	Ba1	Ba1	Ba1	63.2	36.7	16.7	8.5	13.0	11.0	11.3	
HONDURAS	B1	B1	B1	90.2	9.7	28.8	12.0	14.3	11.7	11.7	
HONG KONG	Aa1	Aa1	Aa3	0	99.9	45	4.2	5.4	2.7	8.0	
HUNGARY	Ba2	Ba2	Baa2	68.2	31.5	18	6.6	13.8	13.0	10.8	
ICELAND	Aa3	A1	A1	1	98.9	28.3	7.1	8.5	6.5	7.8	
INDIA	Baa2	Baa3	Baa3	34.5	65.6	18.6	5.7	14.0	15.2	10.7	
INDONESIA	Baa1	Baa1	Baa2	17.2	82.9	16.6	5.4	8.8	11.7	9.8	 N
IRELAND	A1	A1	Aa3	1	99	28.5	4.1	5.6	3.1	5.1	I
ISRAEL	A1	A1	Baa1	1	99	28.1	4.4	8.5	9.1	11.5	C
ITALY	Baa1	Baa2	Baa3	21.3	78.8	17.1	5.7	10.2	12.7	4.0	
JAMAICA	Ba3	Ba3	B1	83.7	16.3	25.7	11.5	11.0	17.5	6.7	
JAPAN	Aa1	Aa1	A1	0	100	64.5	2.7	5.0	5.2	2.9	
JORDAN	Ba3	Ba3	Ba3	83	16.8	25.4	10.0	9.9	17.8	11.9	
KAZAKHSTAN	Baa1	Baa1	Baa1	17.9	82	16.5	4.8	14.1	3.7	12.8	C
KENYA	B1	B2	Caa1	95.3	4.7	26.5	9.2	15.4	19.7	12.2	
KOREA	Aa1	Aa1	Aa2	0	100.1	61.5	0.9	5.1	5.9	7.9	
KUWAIT	A1	A1	A1	0.9	99	27.8	8.5	6.4	7.2	9.5	
KYRGYZ REPUBLIC	B1	B1	В3	93.2	6.6	28.4	12.8	14.9	9.9	14.0	- I
LATVIA	A3	Baa1	A3	10.7	89.2	16.8	8.3	11.2	3.8	4.3	
LEBANON	Caa2	Caa2	Ca	99.9	0.1	33.4	16.4	19.5	18.4	15.2	
LITHUANIA	A2	A2	A2	3.6	96.3	24.7	6.5	9.4	3.4	3.6	
LUXEMBOURG	Aaa	Aaa	Aaa	0	100	86.1	5.2	4.7	2.0	1.9	
MALAYSIA	Baa1	Baa1	A3	12.1	88	16.7	4.8	7.6	12.4	9.3	
MALTA	A3	A3	A2	6.3	93.6	18.6	6.9	8.9	4.2	3.7	
MAURITIUS	Baa3	Baa3	Baa3	45	55	18.7	9.6	10.6	12.6	4.8	.001
MEXICO	A3	A3	Baa2	6.3	93.6	18.6	5.7	14.2	12.0	11.3	
MONGOLIA	Ba2	Ba3	B1	82.9	17	25.3	13.3	12.3	12.5	5.7	.001
MONTENEGRO	Ba2	Ba2	B1	75.3	24.6	20.7	10.5	12.7	10.3	11.9	
MOROCCO	Ba2	Ba3	Ba3	79.1	20.9	22.9	9.6	12.1	11.8	14.9	(
MOZAMBIQUE	Baa2	Baa3	Ba1	37	63.1	18.8	9.5	11.6	9.3	11.6	0
NAMIBIA	Caa2	Caa2	Caa2	99.9	0.1	35.7	16.0	16.3	24.6	14.6	(
NETHERLANDS	Aaa	Aaa	Aaa	0	99.8	85.3	2.9	6.8	3.3	3.0	000
NEW ZEALAND	Aa3	Aa3	Aaa	0.5	99.6	25.1	6.0	8.2	5.1	6.5	.001
NICARAGUA	B1	B1	B2	94.3	5.6	27.5	13.6	14.1	10.7	13.6	··· (
NIGERIA	B2	B2	B3	97.8	2	29.2	12.7	16.2	13.9	16.2	1001
NORWAY	Aaa	Aa1	Aaa	0	100	75.7	2.9	9.4	4.0	2.3	10.00

#### Definitions

#### Non-Investment Grade probability

- Calculated by summing the probabilities assigned by the model to non-investment grade ratings, specifically: Ba1, Ba2, Ba1, B1, B2, B3, Caa1, Caa2, Caa3, Ca, C.
- o A higher non-investment grade probability signals a greater perceived credit risk.

#### **Investment Grade probability**

- Calculated by summing the probabilities assigned to investment grade ratings, specifically: Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1, Baa2, Baa3.
- o A higher investment grade probability indicates enhanced stronger creditworthiness and lower default risk.

#### Confidence

- The maximum probability assigned by the model across all rating categories for 2025.
- o It reflects the model's confidence level in the estimation of the implied rating for 2025.



# Model-Driven Rating Decisions and Actual Ratings | Full Sample 3/3

Countries	Implied	d Rating	Actual Rating	Non-Investment Grade Probability	Investment Grade Probability	Confidence	Economic Strength	Institutional Strength	Fiscal Strength	Event Risk	
	2026	2025				2025					
OMAN	Baa1	Baa1	Baa3	11.4	88.5	16.6	6.8	5.0	11.0	10.2	
PAKISTAN	В3	В3	Caa1	98.8	1.2	30.4	9.5	17.8	20.1	17.4	
PANAMA	Baa3	Baa3	Baa3	38.9	61.1	18.9	6.1	9.2	18.6	6.7	
PAPUA NEW GUINEA	B2	B2	B2	96.8	3.1	26.1	16.2	12.3	14.1	10.4	
PARAGUAY	ВаЗ	Ba3	Baa3	84.3	15.6	26.1	11.2	13.1	14.0	8.6	
PERU	Baa3	Baa3	Baa1	44.9	55.3	18.8	8.4	11.9	8.9	10.4	
PHILIPPINES	Baa3	Ba1	Baa2	55.7	44.2	17.3	7.4	11.9	13.1	10.8	
POLAND	Baa1	Baa1	A2	10.1	89.9	17	3.1	12.2	8.2	6.9	
PORTUGAL	A2	A3	A3	4.7	95.3	21.9	5.2	7.0	7.9	4.5	
QATAR	Aa2	Aa2	Aa2	0.3	99.6	23.1	5.0	4.2	9.3	10.2	Ī
REPUBLIC OF MOLDOVA	Ba3	ВаЗ	В3	82.9	16.9	25.4	11.7	14.1	9.8	10.3	
ROMANIA	Ba2	Ba1	Baa3	62.4	37.7	16.5	5.7	14.8	13.7	11.4	
RUSSIAN FEDERATION	Baa2	Baa2	Ca	20.9	79	17	6.1	15.9	3.6	16.3	
SAUDI ARABIA	Aa3	Aa3	Aa3	0.3	99.6	24.3	3.8	7.2	6.1	13.9	(
SENEGAL	B2	В3	Caa1	98.8	1.1	30.3	11.8	14.4	25.8	10.1	
SERBIA	Baa3	Baa3	Ba2	41.3	58.7	18.9	6.7	13.1	10.8	9.3	
SINGAPORE	Aa1	Aa2	Aaa	0.1	99.9	40.8	0.6	4.9	13.4	5.4	
SLOVAKIA	Baa1	Baa1	A3	10.5	89.4	16.9	6.6	11.6	5.1	5.8	
SLOVENIA	A2	A2	A3	3.2	97	26.2	7.3	6.2	5.3	3.4	~ (
SOLOMON ISLANDS	Ba3	ВаЗ	Caa1	87.9	12.1	28	16.3	12.3	8.1	6.6	
SOUTH AFRICA	Ba1	Ba1	Ba2	59.9	40.1	16.4	10.1	12.9	15.2	8.8	VI.
SPAIN	A3	A3	A3	7.9	92	17.4	5.0	8.7	9.1	4.8	
SRI LANKA	Caa1	Caa1	Caa1	99.5	0.3	22.6	14.4	17.1	22.0	11.2	" I
ST. VINCENT	Ba2	Ba2	В3	77.6	22.4	22.1	12.8	11.5	12.3	6.2	
SURINAME	B1	B1	Caa1	93.4	6.6	28.4	11.7	13.6	19.4	6.7	VI.
SWEDEN	Aaa	Aaa	Aaa	0	99.9	88.2	3.3	5.9	2.6	2.7	10
SWITZERLAND	Aa1	Aaa	Aaa	0	100	84	-0.6	2.4	1.6	1.9	in.
TAIWAN	Aaa	Aaa	Aa3	0	100	79.2	2.3	3.9	2.8	3.5	101
THAILAND	Baa2	Baa1	Baa1	16.8	83	16.6	7.2	8.2	7.6	11.2	. (
TRINIDAD & TOBAGO	Ba1	Ba1	Ba2	58.2	41.9	16.8	10.7	10.0	13.3	6.0	101
TUNISIA	В3	В3	Caa1	97.9	1.9	29.5	12.6	15.6	16.9	14.0	in.
TURKEY	Baa3	Baa3	Ba3	33.8	66.2	18.5	2.5	14.8	10.9	14.6	
UGANDA	B2	B2	B3	96.6	3.4	25	11.9	15.1	16.1	13.2	
UKRAINE	Caa1	Caa1	Ca	99.5	0.5	24.5	12.1	17.7	23.2	13.6	. (
UNITED ARAB EMIRATES	Aa2	Aa2	Aa2	0.1	99.7	30.5	4.3	3.7	9.1	10.2	(
UNITED KINGDOM	Aa3	Aa3	Aa3	0.7	99.4	25.7	5.4	9.5	8.4	5.0	
UNITED STATES	Aa3	Aa3	Aa1	0.6	99.4	24.9	1.5	10.3	12.6	7.0	
URUGUAY	Baa3	Ba1	Baa1	49.2	50.7	18.3	9.1	9.6	12.5	9.3	
VENEZUELA	Caa3	Caa3	Ca	99.8	0	59.6	16.3	21.4	20.3	18.1	- (
VIETNAM	Baa1	Baa1	Ba2	16	83.9	16.7	5.6	10.4	6.4	12.8	
ZAMBIA	Caa1	Caa1	Caa2	99.5	0.3	19.8	14.6	16.2	22.1	14.6	
											-

#### Definitions

#### Non-Investment Grade probability

- Calculated by summing the probabilities assigned by the model to non-investment grade ratings, specifically: Ba1, Ba2, Ba1, B1, B2, B3, Caa1, Caa2, Caa3,Ca, C.
- o A higher non-investment grade probability signals a greater perceived credit risk.

#### **Investment Grade probability**

- Calculated by summing the probabilities assigned to investment grade ratings, specifically: Aaa, Aa1, Aa2, Aa3, A1, A2, A3, Baa1, Baa2, Ваа3.
- o A higher investment grade probability indicates enhanced stronger creditworthiness and lower default risk.

#### Confidence

- The maximum probability assigned by the model across all rating categories for 2025.
- o It reflects the model's confidence level in the estimation of the implied rating for 2025.



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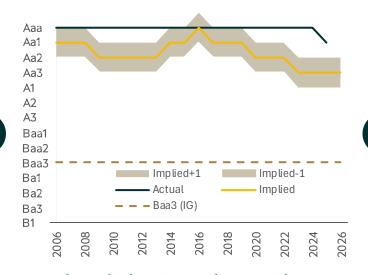
#### **USA Factor Analysis**

Dates	Economic Factor	Institutional Factor	Fiscal Factor	Event Risk Factor
2022	1.77	10.08	7.82	6.39
2023	1.82	10.44	9.74	6.65
2024	1.86	10.78	11.82	7.04
2025	1.52	10.27	12.63	7.03
2026f	1.81	8.07	14.06	7.03

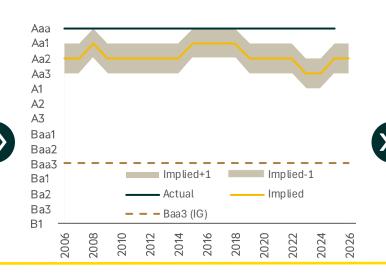
#### Canada Factor Analysis

Dates	Economic Factor	Institutional Factor	Fiscal Factor	Event Risk Factor
2022	5.36	5.30	7.96	3.46
2023	5.48	5.52	10.99	3.30
2024	5.49	6.07	9.74	2.84
2025	4.75	5.10	9.56	3.07
2026f	5.12	3.43	9.72	3.13

#### USA Implied Ratings Path vs Actual



## Canada Implied Ratings Path vs Actual



USA's implied ratings have typically been lower than its actual ratings. In fact, the implied rating has been consistently at least two levels below actual. This assessment is consistent with Moody's recent action in May 2025, when the agency downgraded the rating from Aaa to Aa1.

Focusing on the underlying factors, the Economic Strength and Event Risk factors have remained relatively stable. The Fiscal factor has consistently increased year after year signaling more stress on the country's debt levels. In contrast, the Institutional factor is estimated to decline in 2026.

As per our analysis, our model also suggests that Canada should have a rating that is at least two levels below its current Aaa rating.

Looking at the underlying factors, the Economic Strength and Event Risk factors have remained broadly stable over the past five years. The Institutional Factor is anticipated to decline next year, underpinned by improved revenue performance. However, the Fiscal factor remains elevated, indicating ongoing stress, though less than in the US.



## Focus | Mexico & Brazil

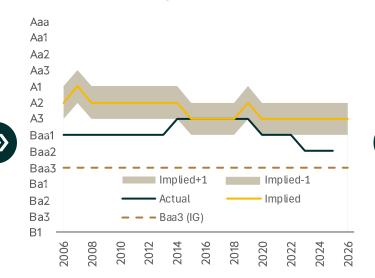
Mexico Factor Analysis

Dates	Economic Factor	Institutional Factor	Fiscal Factor	Event Risk Factor
2022	7.26	13.89	9.48	11.43
2023	7.11	14.35	10.56	11.25
2024	6.79	14.58	11.76	11.25
2025	5.67	14.24	11.96	11.25
2026f	5.91	13.39	12.05	11.25

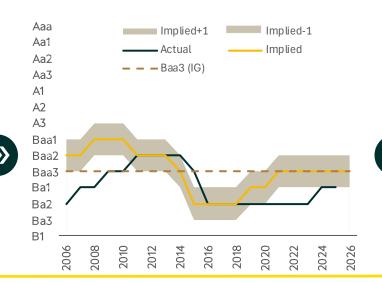
#### **Brazil Factor Analysis**

Dates	Economic Factor	Institutional Factor	Fiscal Factor	Event Risk Factor
2022	7.41	15.18	12.43	9.51
2023	7.15	15.33	12.93	9.09
2024	6.99	15.85	13.47	9.09
2025	6.27	15.10	14.89	9.09
2026f	5.99	14.27	15.91	9.09

## Mexico Implied Ratings Path vs Actual



## Brazil Implied Ratings Path vs Actual



Mexico's implied ratings have generally stayed above its actual ratings, with both remaining within investment-grade space (above Baa3). However, Mexico's actual rating has moved close to the lower bound of investment grade.

The ongoing decrease in the economic strength factor is primarily attributed to the consistent growth in nominal GDP and GDP per capita, both of which bolster the country's economic fundamentals and reduce associated risks. Nevertheless, the Fiscal factor reflects mounting fiscal pressures.

Our model has placed Brazil in the investment grade zone (at Baa3) since 2021, but its actual rating has remained one notch lower at Ba1 (non-investment grade) for the past two years.

From 2022 to 2025, the Fiscal factor consistently worsened due to a significant increase in the interest-to-revenue ratio, which signals higher debt-servicing costs and limits space for development. In contrast, the Economic factor has gradually improved, and both the Institutional and Event Risk factors remained largely unchanged.



# Focus | China & India

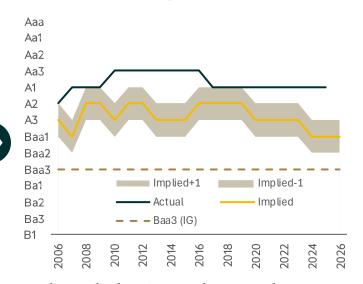
China Factor Analysis

Dates	Economic Factor	Institutional Factor	Fiscal Factor	Event Risk Factor
2022	3.22	10.64	10.12	15.85
2023	3.11	10.37	10.73	15.03
2024	2.96	12.65	11.40	15.03
2025	2.70	12.74	12.15	15.03
2026f	2.79	13.21	12.54	15.03

#### **India Factor Analysis**

Dates	Economic Factor	Institutional Factor	Fiscal Factor	Event Risk Factor
2022	6.49	14.88	16.60	10.71
2023	6.23	14.88	15.38	10.65
2024	5.96	14.28	15.27	10.65
2025	5.66	14.00	15.19	10.65
2026f	5.49	13.48	15.16	10.65

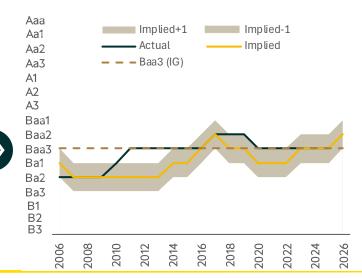
## China Implied Ratings Path vs Actual



China's implied ratings have historically trailed behind actual ratings, indicating a discrepancy between the fundamental data and assigned ratings.

China continues to face notable Institutional, Fiscal and especially Event Risks. Despite steady
Economic growth outpacing other nations, the three other factors negatively impact its overall implied rating.

## India Implied Ratings Path vs Actual



In India, our model aligned with the actual sovereign rating in 2023 and projects an additional upgrade to Baa2 (moving further up the investment grade scale) by 2026.

The Economic Factor has steadily declined, indicating increased stability and economic resilience over the past five years. Additionally, improved Institutional performance has supported increases in the implied sovereign rating.





## Focus | Germany & France

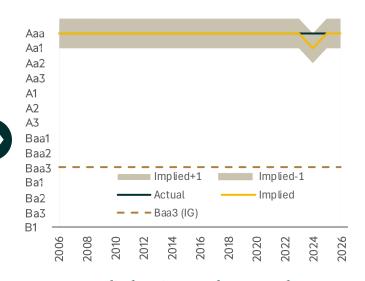
**Germany Factor Analysis** 

Dates	Economic Factor	Institutional Factor	Fiscal Factor	Event Risk Factor
2022	4.30	6.22	2.36	3.29
2023	4.34	6.79	2.53	3.31
2024	4.35	7.32	2.78	3.31
2025	3.73	7.05	2.80	3.31
2026f	4.08	4.94	3.03	3.31

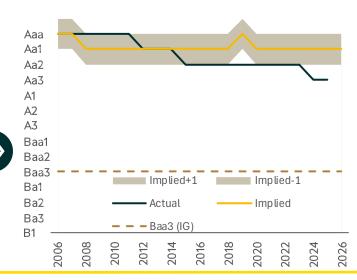
#### France Factor Analysis

Dates	Economic Factor	Institutional Factor	Fiscal Factor	Event Risk Factor
2022	5.32	6.66	5.69	4.69
2023	5.34	7.39	5.56	5.40
2024	5.43	7.91	5.03	4.68
2025	4.44	7.70	5.64	4.74
2026f	4.99	6.34	7.33	4.68

## Germany Implied Ratings Path vs Actual



## France Implied Ratings Path vs Actual



Germany's implied ratings have consistently mirrored actual ratings over the observed sample period, maintaining a position at the highest level (Aaa).

All factors remain at low levels, indicating a robust overall risk profile. The Economic factor reflects resilience in the economy despite global uncertainties. The Institutional Factor is expected to improve further in 2026 and the Event Risk factor to remain stable. However, the Fiscal factor is gradually worsening due to a higher interest-to-revenue ratio.

Since 2014, our model has consistently assigned France a higher credit rating than its actual ratings (Aa1 for 2025/26).

Although there has been progress regarding Economic and Event risk factors over the past year, significant challenges persist in the areas of Institutional and Fiscal factors. These ongoing issues continue to undermine investor confidence and are marked by persistent delays in implementing critical reforms necessary to stimulate domestic economic activity.





## Focus | Greece & Italy

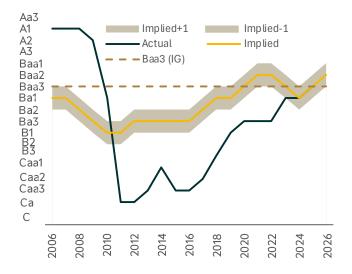
**Greece Factor Analysis** 

Greece Factor Analysis					
Dates	Economic Factor	Institutional Factor	Fiscal Factor	Event Risk Factor	
2022	9.10	5.94	11.09	8.16	
2023	8.86	7.33	12.52	8.60	
2024	8.76	9.18	12.41	8.13	'
2025	7.66	9.53	11.86	7.78	
2026f	7.92	7.32	11.07	7.63	

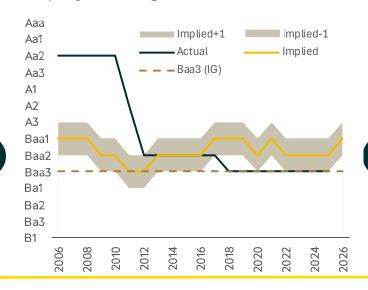
**Italy Factor Analysis** 

Dates	Economic Factor	Institutional Factor	Fiscal Factor	Event Risk Factor
2022	6.92	9.33	12.77	4.45
2023	6.88	9.39	12.19	4.02
2024	6.83	10.24	12.41	4.02
2025	5.74	10.23	12.66	4.02
2026f	6.58	7.41	12.81	4.02

## Greece Implied Ratings Path vs Actual



Italy Implied Ratings Path vs Actual





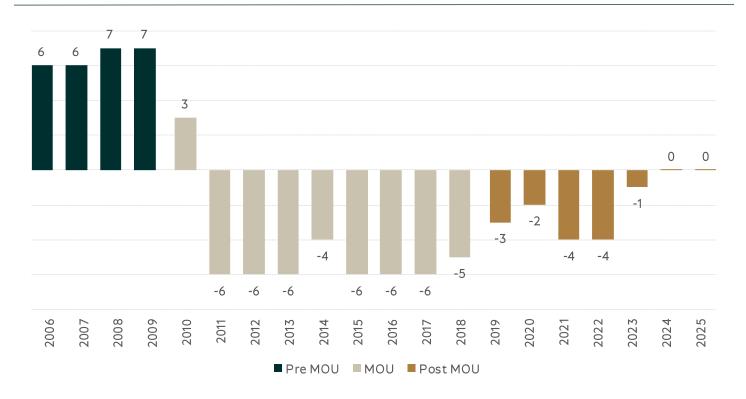
In 2024/25, Moody's rating for Greece aligned with our implied rating, thereby closing a longstanding gap. This convergence reflects growing confidence in Greece's creditworthiness and a more stable assessment of its economic fundamentals. The Economic factor has strengthened, supported by rising nominal GDP and GDP per capita, indicating improved performance and living standards. These developments affirm Greece's steady recovery and upward credit trajectory over the past decade, while according to our estimation Greece's rating is likely to further increase in 2026 by one notch.

Italy's implied credit ratings have historically exceeded Moody's assigned ratings. Specifically, our model suggests that the rating should be two notches higher than the investment grade lower bound, where it was placed by Moody's since 2018. The Economic and Fiscal factors are the two areas that face most of the challenges ahead, as an increase is estimated signaling more stress.



# Focus | Greece

#### Difference Between Actual and Implied Ratings



- Over time, there has been a noticeable discrepancy between Moody's sovereign credit rating and Piraeus Bank implied rating for Greece. During the Pre-Memorandum of Understanding (MOU) period the difference was positive, suggesting that Moody's rating was up to 7 levels higher than what the fundamentals implied. However, during the MOU period, the difference turned negative, reflecting a more conservative stance by Moody's relative to Greece's economic fundamentals.
- In our report "Rating Agencies remain conservative on a Global Level" (November 2023) we gauged Moody's stance as still cautious despite the rating upgrade to Ba1 in Sept 2023, as according to our estimates Greece had 'conquered' the Baa3 investment grade since 2020.
- In March 2025, Moody's upgraded Greece's credit rating to Baa3, thereby restoring its investment grade status for the first time since 2010 and bringing it in line with our implied rating.
- For 2026, our model signals that one more upgrade to Baa2 is likely.



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# Data Description

# of Countries	123
# of Years	20 years
Time Span	2006-2025
Outliers	To facilitate the statistical properties of our scoring model we truncate outliers in each of the four factor variables. As a result, we avoid extreme values that distort the statistical analysis. The maximum and minimum values used for truncation purposes are decided on a factor-by-factor case and follow the qualitative and judgmental criteria described in Moody's methodology (Updated Version November 22, 2022).
Standardisations	In order to construct the factors on which implied rating scores are based we follow Moody's standardization process in which the numeric representation of each sub-factor is based on a 20-level scoring scale that matches sub-factor gauges to numeric scores. As a final step, sub-factors are weighted appropriately under the weighting scheme provided by Moody's to end up at the four main factors utilized in the scorecard framework.
Data Sources	Moody's Rating Agency, International Monetary Fund, World Bank, UNCDAT



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# Sovereign Ratings | Description

Analytical Rating	Indicates	
Aaa	Highest quality with minimal risk.	
Aa1 Aa2 Aa3	High quality, subject to very low default risk.	
A1 A2 A3	Upper-medium grade, subject to low credit risk.	
Baa1 Baa2 Baa3	Medium-grade, moderate credit risk, may have speculative characteristics.	
Ba1 Ba2 Ba3	Substantial credit risk, have speculative characteristics.	
B1 B2 B3	High credit risk, considered speculative.	
Caa1 Caa2 Caa3	Very high credit risk, poor standing.	
Ca	Highly speculative. Likely in or very near default with some prospect of recovery of principal or interest.	
С	Lowest rated class of bonds. Typically, in default with little prospect for recovery of principal or interest.	



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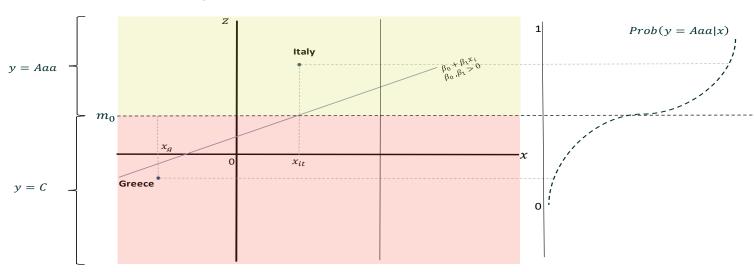
## From Data to Ratings | Ordered Choice Models

- o Rating agency decisions fit naturally with ordered choice models where an individual, i.e. the rating agency in our case, must choose among an ordered set of discrete scores that characterise the capacity of a country to pay off its debt obligations. By ordered set, we mean that the scores follow a natural ordering from low ability (C) to high ability of debt repayment (Aaa). Ordered choice models can be thought of as an indirect regression of the observed rating decisions (y) to a set of instrument variables (x) that define several economic and qualitative characteristics of the country's debt repayment ability.
- The difference with the standard linear regression framework is that it is not possible to relate discrete rating scores in a linear way with the continuum of values observed in x. In order to overcome this problem we assume that the underlying process of choosing a country's discrete rating score is driven by a continuous preference strength random variable (z) that relates indirectly the rating decision y with the economic characteristics of each country x. In particular we relate the observed rating decisions y with the unobserved preference strength z which in turn is related with the observed characteristics in x.
- Perhaps the notion of ordered choice models can be better understood in the context of two country-two-rating scores example (binary choice model). For the sake of simplicity lets say that the rating agency must choose between two scores for Greece and Italy, C and Aaa, where the first rating indicates low ability of debt repayment and the second a high ability of debt repayment. For each country the rating agency observes a single characteristic that indicates the country's GDP growth  $x_G$  for Greece and  $x_I$ for Italy. We further assume that the rating agency assigns an Aaa rating to Italy and an C rating to Greece based on the GDP growth and on some other unobserved factors that we cannot measure accurately or are not available publicly.
- Our goal is to estimate how the rating score outcome is related to the observed characteristic. For this reason we assume that the rating agency makes decisions according to a preference index z that is positively related to the observed characteristic (GDP growth) and the unobserved factors. In other words we assume that as GDP growth increases, the tendency (or preference) of the rating agency to assign an Aaa rating is greater. Additionally, preferences are also affected (positively or negatively) by some other unknown factor  $\varepsilon$ ,  $(z_i = \beta_0 + \beta_1 * x_i + \varepsilon_i)$ .
- Now assume that the values of z can be partitioned into two areas representing the two observed rating score choices, those that lie above a specific threshold  $m_0$  and those that lie below. For example, since  $z_G < m_0$  then  $y_G = C$  while for Italy  $z_I > m_0$  so  $y_{\rm I} = {\rm Aaa.}$
- o Up to now we managed to relate the rating decisions for the two countries with their GDP growth indirectly through the preference strength variable z. Since z depends also on the unobserved term  $\varepsilon$  which is random, the next step is to make assumptions on the distribution of this unobserved term.

# Ordered Choice Models v = Aaa $\chi_I$ Greece y = C

# From Data to Ratings | The Ordered Logit Model

## Logit Transformation and Error Distribution



- o The model suggested provides a crude description of the mechanism underlying an observed rating decision. The next crucial assumption is that of the distribution of the random error component  $\varepsilon$ , i.e. the country's unobserved or unmeasured features.
- The standard assumption here is that errors are randomly drawn from some theoretical distribution allowing us to attach probabilities to each rating decision. In other words, by specifying the error distribution in the model we transform the rating score preferences z to a probability function of the rating score outcome conditional on x,  $\beta_0$ ,  $\beta_1$  and  $m_0$ . Intuitively, the conditional probability function works as the preference strength variable transformed in such a way so that it takes values between zero and one and changes analogously with the economic characteristics of the country. That is, if  $x_c$  increases, then the probability of assigning a higher rating to Greece increases as well.
- o For each choice of error distribution we should apply an appropriate transformation. Usually these transformations are non-linear function and the most common are the probit function (for normally distributed errors) and the logit function (for errors drawn from a logistic distribution). In our study we prefer to work with the latter S-shaped function as shown in the figure above.
- o Ordered logit or probit models are extensions of this simple binary choice example to a setting where the rating agency has to choose among more than two rating scores. The parameters that we estimate in the ordered logit model are the  $\beta$  from the linear equation as well as the n-1 threshold parameters m that correspond to the n rating scores.

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