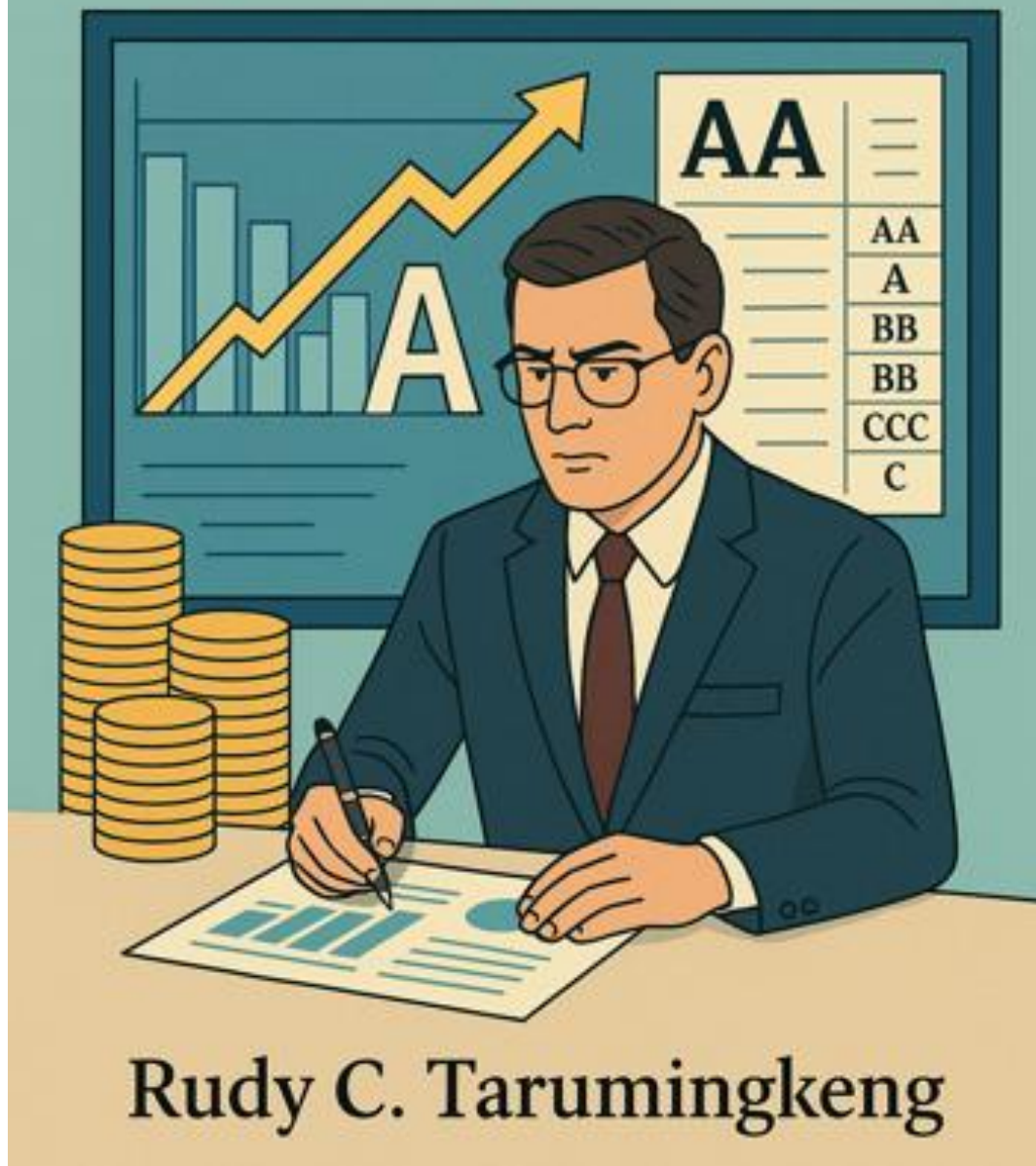


Credit Rating Agency (CRA)



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Credit Rating Agencies

Introduction

A Credit Rating Agency (CRA) is one of the key pillars of the global financial architecture. In brief, a CRA is an independent firm that assesses the credit-worthiness of debt issuers—whether corporations, financial institutions, or governments—as well as debt instruments such as bonds and structured credit products. These assessments are expressed as published rating notations that are officially recognized around the world.

Definition and Core Functions

At its core, a CRA conducts a comprehensive analysis of a borrower's or issuer's ability to meet principal and interest obligations. This process includes:

1. **Financial Analysis:** Evaluating historical financial statements and cash-flow projections to gauge liquidity, leverage, and solvency.
2. **Qualitative Analysis:** Reviewing non-financial factors such as corporate governance, operational risk, risk management practices, and macroeconomic conditions.
3. **Scoring/Rating:** Combining quantitative and qualitative factors, the CRA assigns ratings—for example, AAA (very low risk), AA, A, BBB (investment grade), down to BB, B, CCC, CC, C (high-yield/junk).

These ratings serve as a universal “language” of credit risk. Institutional investors, banks, and asset managers rely on them to:

- **Set Yields/Coupons:** High ratings (AAA–AA) allow issuers to borrow at lower interest rates, whereas lower ratings (BB and below) compel issuers to offer higher yields to compensate for greater risk.
 - **Regulatory Compliance:** Many banking and pension-fund regulations require that investments meet a minimum rating threshold (commonly at least investment grade).
 - **Diversification and Asset Allocation:** Global portfolios are structured around risk limits and return targets that often reference CRA ratings.
-

Dominance of “The Big Three”

Although hundreds of CRAs operate worldwide, since the 1990s the global market has been dominated by three major agencies:

- Standard & Poor’s (S&P)
- Moody’s Investors Service
- Fitch Ratings

Together, they control approximately 90–95 % of corporate and sovereign debt ratings. This dominance creates a “network effect”: the more investors rely on their ratings, the harder it is for smaller agencies to gain traction, further strengthening the Big Three’s influence over methodologies and standards.

Conflicts of Interest and Controversies

The typical CRA business model is “issuer-paid,” meaning that issuers of debt pay the agency for its assessment. This setup introduces potential conflicts of interest:

- **Commercial Pressure:** Issuers dissatisfied with a rating can “shop” among agencies in search of a higher grade or lower fees.

Credit Rating Agency Overview

Definition



Analyzes and issues an officially recognized assessment of the quality of a debt or debtor

The Big Three

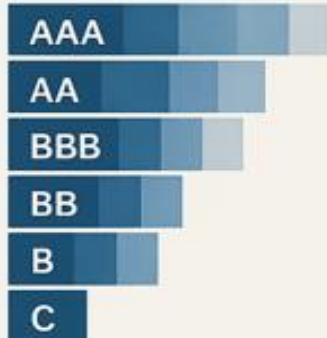
STANDARD
& POOR'S



MOODY'S

Fitch

Rating Scale



Rating Process



Data Collection



Quantitative Analysis



Qualitative Analysis



Rating Committee



Publication

Key Controversies

- Conflict of interest
- Pro-cyclicality
- 2008 crisis



Future Trends



Digitalization & AI

ESG integration

Regulatory reform

- **Advisory Services:** Many CRAs also offer risk-management consulting, making them both consultants and arbiters in the same credit transactions.
- **Complex-Product Revolutions:** In 2007–2008, CRAs awarded top ratings (AAA) to trillions of dollars in CDOs (Collateralized Debt Obligations) backed by U.S. subprime mortgages. When the housing bubble burst, these instruments collapsed in value, triggering a global liquidity crisis and recession. Critics argue that CRAs failed to capture the complexity and risk of these products, influenced by the large fees paid by structured-product issuers.

Case Study: The 2008 Global Financial Crisis

Between 2005 and 2007, CRAs rated hundreds of billions of dollars of subprime-backed CDOs as AAA. Consider this illustrative anecdote:

A European portfolio manager purchased €200 million of AAA-rated CDOs, confident in their perceived safety. When subprime defaults surged, those CDOs lost 70 % of their value within six months, triggering margin calls and liquidity strains across multiple financial institutions.

In the aftermath, the U.S. Congress sued S&P and Moody's for negligence and misrepresentation. Many lawsuits ended in multi-hundred-million-dollar settlements, forcing the industry to revamp methodologies and increase transparency—though criticism of commercial bias remains.

Economic and Social Impacts

CRAs influence both macro- and microeconomic outcomes simultaneously:

- **Emerging-Market Governments:** Sovereign downgrades can push up a country's borrowing costs, straining public finances and social budgets. For instance, when S&P downgraded Indonesia's

sovereign rating from BBB to BBB– in 2014, the 10-year government bond yield rose from 6.5 % to nearly 7.2 % within a month.

- **SMEs and Corporates:** Small and medium enterprises often lack ratings, forcing reliance on costlier bank financing rather than bond markets.
 - **Retail Investors:** Even if not directly buying foreign debt, retail investors feel the impact through mutual funds and derivatives that adjust allocations based on ratings.
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Academic Discussion and Perspectives

1. Transparency vs. Model Complexity

- Greater methodological transparency aids oversight but can also make it easier for market participants to game the models. Scholars debate the merits of **bottom-up** approaches (cash-flow and fundamental risk) versus **top-down** approaches (macroeconomic and sentiment indicators).

2. Role of Regulation

- Post-2008, Basel III requires banks to hold more capital against bonds rated below investment grade. Over-regulation, however, can stifle market liquidity.

3. Rise of New CRAs

- Countries such as China, India, and Brazil have established local CRAs to reduce dependence on the Big Three. Their challenge lies in building credibility and perceptions of impartiality.

4. Digital Innovation and Data Analytics

- Leveraging big data, machine learning, and alternative data sources (e.g., satellite imagery, social-media signals) can enrich credit assessments but also risk creating opaque “black-box” models.

Conclusion

Credit Rating Agencies play a central role in shaping global borrowing costs and capital flows. While they provide vital risk signals to markets, their concentrated market power and issuer-paid model raise ongoing concerns about conflicts of interest and reliability—as starkly illustrated by the 2008 crisis. Moving forward, balancing analytical rigor, methodological transparency, and commercial independence will be critical for CRAs to remain relevant and trusted by stakeholders worldwide.

Credit rating exploration

Process and Methodology of Rating

After a debt issuer submits an application, a CRA begins a series of steps:

1. Engagement & Due Diligence

- The CRA signs an engagement letter with the issuer, defining scope, fees, and data confidentiality.
- The CRA collects historical data—audited financial statements, cash-flow projections, capital structure—as well as qualitative information: business strategy, management profile, industry conditions, and the regulatory framework.

2. Quantitative Analysis

- **Cash-Flow Modeling:** Building projections of revenues, expenses, capital expenditures, and outstanding debt.
- **Key Ratios:** Calculating leverage (Debt / EBITDA), interest coverage (EBITDA / Interest Expense), liquidity (Current Ratio), and conducting stress tests under adverse scenarios.

3. Qualitative Analysis

- **Corporate Governance:** Assessing board independence, compensation policy, and accountability mechanisms.
- **External Risks:** Evaluating currency volatility, regulatory changes, political upheaval, and commodity-market dynamics.
- **Industry Factors:** Considering the industry life-cycle stage (maturity vs. growth), competitive intensity, and technology substitution risks.

4. Rating Committee

- The analytical team presents its findings to an internal committee of senior analysts and decision-makers.
- Through in-depth discussion of assumptions, factor weightings, and methodological consistency, the committee determines the final rating and the outlook (positive, negative, or stable).

5. Publication & Surveillance

- The rating is published in an official report, accompanied by narrative commentary and key rating drivers.
- The CRA conducts periodic monitoring (quarterly or annual reviews) and may place the rating on "watch" if a material event occurs (e.g., a disappointing quarterly report, an unexpected downgrade by another agency, or major regulatory shifts).

Rating Types

- **Sovereign Rating:** Assesses a country's fiscal and monetary health—public debt levels, budget deficits, foreign-exchange reserves, and institutional quality.
 - **Corporate Rating:** Focuses on non-financial companies—industry outlook, operational performance, dividend policy, and capital structure.
 - **Financial Institution Rating:** Evaluates banks and other financial intermediaries—asset quality (e.g., non-performing loan ratio), capital adequacy (CAR), short-term liquidity, and market exposures.
 - **Structured Finance (CDO, ABS, MBS):** Analyzes securitized pools—cash-flow waterfall structure, tranche subordination levels, and default risk of underlying assets (e.g., mortgage portfolios).
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Case Study 1: U.S. Sovereign Downgrade (August 2011)

- **Event (5 August 2011):** S&P lowered the U.S. sovereign rating from AAA to AA+.
- **Key Reasons:**
 - Fiscal deadlock in Congress delaying the debt-ceiling increase.
 - S&P's view that deficit-reduction measures lacked long-term credibility.
- **Narrative Impact:**

A London-based fixed-income fund manager overseeing a U.S. Treasury ETF saw the 10-year Treasury yield jump from 2.8 % to 3.0 % in a single day. Though modest, this move triggered global

portfolio rebalancing and raised corporate borrowing costs worldwide.

Case Study 2: Greek Debt Crisis (2010–2012)

- **Rating Actions:** From late 2009, Moody's, S&P, and Fitch gradually downgraded Greece from investment grade (BBB) to junk status (BB/B).
- **Triggers:**
 - A budget deficit swelling to 15 % of GDP.
 - EU bailout packages tied to austerity conditions.
- **Discussion Perspective:**

The gap between sovereign ratings and on-the-ground political realities fueled prolonged uncertainty. Peripheral Eurozone countries struggled to access capital markets, prompting interventions by the European Stability Mechanism (ESM) and the IMF.

Impact of the COVID-19 Pandemic

In March–April 2020, CRAs executed hundreds of rating actions—downgrading outlooks and ratings across corporate issuers and sovereigns (e.g., Italy, Spain, Brazil). For example:

- **Italy:** Sovereign outlook shifted from “stable” to “negative” in April 2020.
 - **Global Corporates:** The energy and transportation sectors saw mass downgrades, driving high-yield bond yields up by 700 bps.
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Regulation and International Standards

- **IOSCO Code of Conduct:** Sets principles of independence, methodological transparency, and conflict-of-interest management for member CRAs.
 - **Dodd-Frank Act (U.S.):** Strengthened SEC oversight of CRAs, introducing the Credit Rating Agency Reform Act to boost accountability.
 - **EU CRA Regulation (CRA III):** Requires CRA registration with ESMA, regular methodology audits, and separation of issuer-paid fees for structured finance ratings.
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Innovation and Future Challenges

- **Digitalization & AI**
Integrating machine learning to analyze alternative data (e.g., social media, satellite imagery, transaction data) can deepen insights but may reduce model explainability.
- **ESG Rating Integration**
Growing demand from ESG-focused investors to incorporate environmental, social, and governance factors into credit ratings—prompting CRAs to develop “ESG-adjusted credit scores.”
- **DeFi & On-Chain Credit Scoring**
Experimental blockchain platforms employing “proof of on-chain repayment” to assess peer-to-peer borrower reputations, challenging traditional CRA monopolies.
- **Independence and Transparency**
Continued regulatory pressure to separate advisory services from rating activities and to strengthen third-party audits of methodologies.

Final Thoughts and Discussion

The CRA industry stands at the crossroads of established methodologies and the push for digital innovation. On one hand, the reputation and credibility of the Big Three remain unmatched. On the other, modern stakeholders—governments, institutional investors, and the public—demand greater transparency, real-time, data-driven approaches, and integration of sustainability values. Balancing historical rigor, commercial independence, and predictive accuracy will be essential for CRAs to thrive and adapt in the latter half of the 21st century.

Here are several additional points that can enrich the discussion of Credit Rating Agencies (CRAs):

1. **Pro-cyclicality and Systemic Risk**

CRAs are often criticized for amplifying business cycles:

- **Boom:** During expansion phases, the financial performance of companies and governments improves, so CRAs tend to upgrade ratings, lowering borrowing costs and encouraging cheaper credit.
- **Bust:** When a recession arrives, CRAs downgrade ratings—sometimes with only a short “lag”—forcing investors to sell bonds (a fire-sale), depressing market prices and deepening liquidity stress.

As a result, ratings can exacerbate market volatility and create a feedback loop that triggers liquidity crunches and systemic risk, as seen in the 2008 crisis and the tightening of corporate bond liquidity (Blume, Lim & Mack, 1998).

2. **Shadow Ratings and Internal Ratings under Basel II**

In addition to external CRAs, many large banks develop Internal Ratings-Based (IRB) models as part of Basel II requirements:

- **Advanced IRB:** Banks calculate their own Probability of Default (PD), Loss Given Default (LGD), and Exposure at Default (EAD) using internal historical data.
- **Foundation IRB:** Banks internally estimate PD, while LGD and EAD are set by regulators.
These IRB models are called “shadow ratings” because they often parallel CRA ratings but are used to determine regulatory capital needs. Differences between CRA methodologies and IRB models spark debate over consistency and risk calibration.

3. Fintech Alternatives and Open Credit Scoring

Financial-technology (Fintech) developments have given rise to alternative credit assessment methods:

- **Peer-to-Peer Lending Platforms:** Use digital transaction data (e-commerce, e-wallet activity) to assess the credit reputations of individuals and SMEs.
- **On-chain Credit Scoring:** On public blockchains, on-chain transaction histories serve as reputation proxies, enabling loans without traditional CRA involvement.
- **Open-Source Rating Methodologies:** Some academic and non-profit initiatives publish transparent rating approaches to reduce the “black-box” nature of traditional CRAs.

4. ESG & Climate-Risk Credit Ratings

With growing focus on sustainability, CRAs have begun adding ESG overlays:

- **Green Bond Ratings:** Assess how well a bond issuance aligns with green-finance principles.
- **Climate-Adjusted Credit Scores:** Measure an issuer’s exposure to physical risks (natural disasters) and transition risks (shift to a low-carbon economy).

- *Example:* DBRS Morningstar launched its “Green Bond Assessment,” separating financial-credit risk from environmental risk to give ESG investors multi-dimensional insights.

5. Rating Migration and Default Statistics

Investors look beyond “point-in-time” ratings to historical migration and default data:

- **Migration Matrix:** Tables showing the probabilities of moving between rating categories (e.g., AAA to AA within one year).
- **Cumulative Default Rates:** Average percentages of issuers in each rating class that default over 1-, 3-, or 5-year horizons.
These data inform risk-management, credit-derivative pricing, and bank stress testing.

6. Regulatory Reform and the Future

Several reform measures are underway:

- **Separating Advisory Fees from Rating Fees:** Regulators in some jurisdictions require CRAs to bill consulting services and rating services separately, preventing cross-subsidization.
- **Third-Party Methodology Audits:** Registered CRAs must undergo regular external audits of their rating methodologies.
- **“Mechanistic De-Emphasis” Approach:** Regulators are reducing mechanical reliance on credit ratings in capital-and-pension-fund rules, encouraging institutions to perform their own internal credit assessments.

Case Study: Chronological Timeline of the 2008 Crisis

Timeline of Key Events

- **Mid-2006: Peak of the Subprime Expansion**

The U.S. housing market peaked in mid-2006, when subprime loans accounted for nearly 20 % of total mortgage originations—compared with only 8 % in 2007—marking the high-risk credit boom before the collapse (originations then plummeted from 20 % in 2006 to 8 % in 2007).

- **February–March 2007: Subprime Lender Bankruptcies**

More than 25 subprime lenders—including New Century Financial—filed for bankruptcy or liquidation due to surging defaults and tightened credit conditions (New Century Financial filed for Chapter 11 on April 2, 2007).

- **10 July 2007: Wave of CDO Downgrades**

Moody's downgraded \$5.2 billion of mortgage-backed bonds, while S&P placed \$7.35 billion of MBS/CDOs on "credit watch negative," the first signal that once-"safe" structured products were being seen as high-risk.

- **9 August 2007: Global Liquidity Crisis**

BNP Paribas announced it had frozen three of its hedge funds because there was no liquidity in the MBS market—marking the spread of the crisis to Europe and Asia.

- **Q3 2007 (July–September): Massive MBS Downgrades**

In the third quarter of 2007 alone, CRAs downgraded about \$1.9 trillion of mortgage-backed securities, accelerating the repricing of risk in the housing-securitization markets.

- **March 2008: Large-Scale Subprime Tranche Downgrades**
By March 2008, S&P had downgraded 44.3 % of the subprime RMBS issued between Q1 2005 and Q3 2007, reflecting the widespread collapse in credit quality.
- **15 September 2008: Lehman Brothers Bankruptcy**
Lehman Brothers filed for Chapter 11 bankruptcy, triggering global market panic and massive liquidity withdrawals across the financial system—the “Lehman moment” that delivered a worldwide shock within hours.
- **3 October 2008: Authorization of TARP (Bailout)**
The U.S. Congress passed the Emergency Economic Stabilization Act of 2008, authorizing the \$700 billion Troubled Asset Relief Program to buy troubled assets and inject capital into banks—TARP was established under EESA on October 3, 2008.

Impact of Rating Actions on CDO Yields and CDS Spreads

1. CDO Yields

- **Risk Repricing:** As mass downgrades unfolded, investors forced fire-sales of CDOs in the secondary market at steep discounts. For example, in late July 2008, Merrill Lynch sold over \$30 billion of CDOs for just \$0.22 on the dollar—a 78 % discount, implying yields in the hundreds of percent as the market demanded far higher compensations for rapidly rising credit risk.
- **Price vs. Risk:** Pre-crisis, AAA-rated CDO tranches typically traded at yields below 6 %. Between Q3 2007 and Q1 2008, those yields jumped into double-digit territory (15–20 % or more), as issuers had to offer much higher coupons to find buyers.

2. CDS Spreads

- **Dramatic Widening:** The spread on investment-grade CDS indices such as CDX.NA.IG, which pre-crisis hovered around 30 basis points, widened beyond 100 bps by mid-2008—a reflection of collective fear over potential defaults by major entities. This elevated risk premium persisted through year-end.
- **Late-2008 Peak:** By December 2008, the CDX.NA.IG spread reached about 270 bps—over eight times its pre-crisis level—peaking global credit uncertainty before starting to narrow as governments and central banks intervened aggressively.

Concise Narrative Conclusion

The widespread downgrades of CDOs and MBS by CRAs not only marked a psychological inflection point in the markets but directly drove structured-instrument yields higher and credit-default-swap spreads dramatically wider. The combination of steep CDO fire-sale discounts, double-digit yield spikes, and multi-fold CDS-spread increases created a liquidity spiral and margin-call cascade that deepened the crisis—ultimately necessitating government intervention through TARP to quell systemic panic.

ESG & Climate-Risk Credit Ratings: An In-Depth Exploration

1. Background and Rationale

Over the past decade, investors and regulators have recognized that environmental, social, and governance (ESG) factors—and, in particular, climate-related risks—can materially affect an issuer's credit profile. Traditional credit ratings focused solely on financial metrics (leverage, cash flow, liquidity) are now being supplemented by ESG-adjusted assessments that capture:

- **Physical Climate Risk:** Losses or cost shocks from increasingly frequent extreme-weather events (floods, hurricanes, wildfires).
- **Transition Risk:** Regulatory, technological, or market shifts aimed at decarbonizing the economy (carbon pricing, clean-energy mandates, asset stranding).

By integrating ESG considerations, CRAs aim to provide a more forward-looking, comprehensive view of an issuer's ability—and willingness—to service its debt over both the short and long term.

2. Integration Approaches

CRAs generally adopt one of three methods for incorporating ESG and climate risk into credit assessments:

1. Overlay Approach

A standalone credit score is first determined on financial fundamentals; ESG or climate factors then adjust that score up or down.

- *Example:* S&P Global's "ESG Impact Score" applies an additive or deductive factor to the issuer's baseline credit rating.

2. Holistic Integration

Financial and ESG metrics are blended into a single, unified credit-rating process from the outset.

- *Example:* Moody's "ESG Continuous Assessment" weaves climate and governance indicators directly into all rating committee discussions.

3. Separate Green/Climate Evaluations

In parallel to credit ratings, agencies issue non-rated opinions such as Green Bond Assessments or Climate Vulnerability Scores. These do not change the credit rating itself but inform investors about sustainability credentials.

- *Example:* DBRS Morningstar's Green Bond Assessment provides an "environmental impact" score alongside a traditional credit rating.

3. Key Methodological Elements

CRA's typically evaluate a broad set of climate-related metrics, including:

Dimension	Indicators
Physical Risk Exposure	Geographic concentration of assets in flood zones, wildfire perimeters, coastal regions
Transition Risk Profile	Carbon intensity (CO ₂ e emissions per revenue), share of assets subject to carbon pricing, R&D in low-carbon technologies

Dimension	Indicators
Policy & Regulatory Risk	Exposure to country-level climate policies, sector-specific mandates (e.g., automotive emissions standards)
Governance & Strategy	Board oversight of climate risk, net-zero targets, climate scenario planning, capex allocation to renewable solutions

4. Case Study: Oil & Gas Corporate Issuer

Issuer: GlobalEnergy PLC (fictional example)

- **Baseline Rating (2021):** BBB+
- **ESG Findings:**
 - **High Carbon Intensity:** 350 kt CO₂e per million USD revenue, well above peer average of 200 ktCO₂e.
 - **Weak Governance Oversight:** No dedicated climate-risk committee at board level.
- **ESG Adjustment:** S&P applies a “negative ESG modifier” of one notch, lowering the rating to BBB.
- **Outlook Revision:** “Negative” outlook assigned due to limited visibility on the company’s transition plan.

Investor Implications:

- Borrowing costs increase by ~20 bps on new bond issuances.
 - Some sustainability-mandated funds restrict purchases below a BBB rating, reducing investor demand and secondary-market liquidity.
-

5. Regulatory Drivers and Standards

- **Task Force on Climate-Related Financial Disclosures (TCFD):** Recommends that issuers disclose governance, strategy, risk management, and metrics related to climate. CRAs use TCFD disclosures as input to their assessments.
 - **EU Sustainable Finance Disclosure Regulation (SFDR):** Requires asset managers to report how they integrate ESG into investment decisions; many turn to ESG-adjusted credit ratings for consistency.
 - **IFRS S2 (Climate-Related Disclosures):** Sets reporting standards for climate risk that will further standardize data inputs over the next few years.
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6. Challenges and Critiques

1. Data Quality & Consistency

- Emissions data are self-reported, vary by methodology, and may be restated retroactively.

2. Standardization of Metrics

- No single global taxonomy for climate risk—different CRAs may weight factors differently, causing divergent outcomes.

3. Greenwashing Risk

- Issuers may exaggerate low-carbon initiatives; CRAs must guard against overly optimistic assessments.

4. Model Explainability

- As CRAs incorporate machine-learning models on alternative data (satellite imagery, social-media sentiment), the resulting “black-box” scoring can hinder investors’ understanding.
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7. Future Outlook

- **Dynamic, Scenario-Based Stress Testing:** CRAs are piloting multi-scenario climate stress models (e.g., 1.5 °C vs. 2 °C warming pathways) to gauge potential P&L impacts under different transition speeds.
 - **Net-Zero Alignment Metrics:** Integration of Science Based Targets initiative (SBTi) commitments into credit analytics, adjusting ratings based on progress toward decarbonization goals.
 - **Enhanced Regulatory Oversight:** Expect greater specification on how CRAs must disclose their ESG methodologies, mirroring financial-rating transparency requirements.
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8. Discussion

The integration of ESG and climate risk into credit ratings represents a critical evolution in fixed-income analysis, aligning capital costs with long-term sustainability. Yet it also raises questions about model comparability, potential pro-cyclicality in green sectors, and the need for continuous methodological refinement. For issuers, a robust transition strategy—backed by transparent disclosures—will become as important as traditional financial health in determining borrowing costs and market access.

Conclusion

ESG-adjusted and climate-risk credit ratings offer investors and policymakers a richer understanding of creditworthiness in an era of unprecedented environmental and regulatory change. As methodologies mature and data quality improves, these assessments will play an increasingly central role in pricing risk, guiding capital allocation, and ultimately steering the global economy toward a more resilient, low-carbon future.

Pro-cyclical and Systemic Risk

Conceptual Foundations

Pro-cyclical refers to the tendency of financial variables or behaviors to move in tandem with the business cycle—rising in booms and falling in busts. In the context of Credit Rating Agencies (CRAs), pro-cyclical means that ratings (or rating changes) tend to be higher during economic expansions and lower during contractions. This dynamic can amplify systemic risk: when ratings loosen in a boom, credit flows expand; when ratings tighten in a downturn, funding dries up, exacerbating the recessionary spiral [Bank for International Settlements](#).

2. Empirical Evidence of Pro-cyclical

- **Blume, Lim & MacKinlay (1998)** find that, after controlling for firm fundamentals, ratings tend to deteriorate over time in line with macroeconomic weakness—indicating excess sensitivity of rating changes to the business cycle [Bank for International Settlements](#).
 - **Amato & Furfine (2004)** extend this analysis and show that while point-in-time ratings appear pro-cyclical, a “through-the-cycle” methodology (adjusting for systematic risk factors) can substantially mitigate observed cyclical biases [IDEAS/RePEc](#).
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3. Mechanisms Linking Ratings to Business Cycles

1. **Lagged Reaction:** CRAs rely on audited financials and management guidance, which reflect past or current conditions—so changes often occur after the cycle has turned.

2. **Model Risk:** Rating models stress tested under benign conditions may understate risk in downturns, delaying downgrades until after losses materialize.
 3. **Rating Reviews & Watchlists:** During downturns, CRAs place ratings “on watch” before downgrading en masse, causing sudden spikes in downgrades once confirmation arrives.
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4. Case Example: Early 2008 CDO Downgrades

- **Timeline:** In Q3 2007, after U.S. housing starts declined, CRAs began downgrading tranches of mortgage-backed CDOs en masse—over US\$ 1.9 trillion in Q3 alone. These downgrades triggered fire-sales of CDOs at steep discounts, sharply repricing yields and draining liquidity from financial markets [ScienceDirect](#).
 - **Systemic Impact:** Major banks faced margin calls on CDO positions; funding markets froze as counter-parties withdrew, illustrating how pro-cyclical rating actions can cascade into full-blown liquidity crises.
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5. Amplification of Systemic Risk

- **Feedback Loop:** Downgrades force investors to sell assets (due to investment mandates), which depresses prices, harming balance sheets and triggering further downgrades—perpetuating a downward spiral.
 - **Regulatory Capital:** Under Basel II’s IRB approach, banks’ capital requirements rose automatically when asset ratings fell, compounding credit tightening just as loan losses surged [Bank for International Settlements](#).
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6. Mitigation and Regulatory Responses

1. **Through-the-Cycle Rating:** CRAs adjust ratings for anticipated cyclical effects, aiming to anchor ratings on long-run credit risk rather than transitory shocks.
 2. **Macro-Overlays:** Incorporating forward-looking macroeconomic indicators (e.g., GDP growth forecasts) into rating models can smooth out sharp cyclical swings.
 3. **Basel III Counter-Cyclicality:** New capital buffers (CCyB) allow supervisors to build capital in booms that can be released in busts, reducing pro-cyclical lending pressures tied to rating changes.
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7. Discussion

While complete elimination of pro-cyclicality is neither feasible nor necessarily desirable—since ratings should reflect genuine shifts in risk—the goal is to prevent ratings from unduly magnifying economic fluctuations. A careful balance between timely risk signaling and sustainable capital flows underpins efforts by CRAs and regulators to contain systemic vulnerabilities in an inherently cyclical world.

Regulatory Reform and the Future

1. Drivers of Reform

The 2008 crisis starkly revealed weaknesses in CRA governance and the outsized market impact of their ratings. Since then, regulators and standard-setters worldwide have pursued reforms to:

- Reduce conflicts of interest in the issuer-paid model.
 - Enhance transparency of rating methodologies and assumptions.
 - Mitigate pro-cyclical effects of ratings on capital flows.
 - Incorporate emerging risks (e.g., ESG, climate) in a consistent, auditable manner.
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2. Major Post-Crisis Reforms

1. Dodd-Frank Act (U.S., 2010)

- **SEC Oversight:** Expanded the SEC's authority to register and supervise CRAs under the Credit Rating Agency Reform Act.
- **Internal Controls & Disclosure:** CRAs must publicly disclose conflicts of interest policies, performance statistics (e.g., rating timeliness), and key assumptions in their methodologies.
- **Civil Liability:** Eased investor ability to sue CRAs for negligent ratings by lowering the standard for pleading misrepresentation.

2. EU CRA Regulation (CRA III, 2013 & 2021 Updates)

- **ESMA Registration:** Requires all CRAs operating in the EU to register with the European Securities and Markets Authority (ESMA) and comply with its code of conduct.

- **Separation of Fees:** Mandates separate fee arrangements for structured-finance ratings versus advisory services, reducing cross-subsidization.
- **Audit & Review:** Introduced periodic third-party audits of rating methodologies and annual disclosures of rating performance metrics.
- **Benchmarks & ESG:** The 2021 update tasks ESMA with supervising “green” or “sustainability” label assessments, ensuring they meet defined quality standards.

3. IOSCO Code of Conduct (2014)

- A globally-endorsed set of 12 principles covering independence, conflicts-of-interest management, disclosure, and governance.
- Many jurisdictions have legally embedded these principles into CRA regulations or licensing requirements.

4. Basel III / CRD V (Banking Regulation)

- **Counter-Cyclical Capital Buffer (CCyB):** Enables supervisors to require banks to build extra capital in good times, mitigating the impact of rating downgrades in downturns on credit supply.
- **Risk-Weight Floor Adjustments:** Banks using internal ratings-based models must apply floors and add-ons to guard against model underestimation of risk.

3. Global Harmonization Efforts

- **Asia Pacific:**

- **China** has introduced stronger registration requirements and methodological disclosure rules for domestic CRAs, aiming to build a credible local alternative.
 - **Singapore** and **Japan** have implemented IOSCO-based licensing regimes, allowing smaller CRAs to operate under standardized oversight.
 - **International Financial Reporting Standards (IFRS):**
 - **IFRS S2 (Climate-Related Disclosures)** will require issuers to provide standardized climate-risk information, feeding more consistent inputs into CRA assessments.
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4. Emerging Regulatory Trends

1. ESG & Climate-Risk Disclosure Mandates

- **EU Sustainable Finance Disclosure Regulation (SFDR):** Requires financial market participants to integrate sustainability risks in investment decisions—many rely on ESG-enhanced credit ratings.
- **Task Force on Climate-Related Financial Disclosures (TCFD):** Increasingly codified into law (e.g., U.K., New Zealand), ensuring CRAs have reliable data to score climate risk.

2. Separation of Advisory and Rating Functions

- Regulators are moving to ban or further restrict CRAs from providing consulting services to rated entities, preventing a “client-serving” dynamic that could color rating judgments.

3. Methodology Audit & Validation

- Mandatory periodic reviews by independent third parties of CRA models, with findings made public to bolster market confidence in rating processes.

4. Mechanistic De-Emphasis

- Supervisors are revising rules to reduce mechanical reliance on external ratings for capital and solvency calculations, encouraging banks, insurers, and asset managers to perform their own credit analyses.

5. Technological Oversight and Innovation

• Data Integrity & Model Explainability

- As CRAs adopt machine-learning techniques for ESG and alternative-data analytics, regulators are developing guidelines to ensure these “black-box” models remain interpretable and auditable.

• Distributed Ledger Pilots

- Some jurisdictions are exploring blockchain-based registries for ratings data, ensuring immutability of published ratings and audit trails of rating-change rationales.

6. Looking Ahead: The Future Regulatory Landscape

1. Holistic Risk-Based Regulation

- Moving from entity-specific rules to ecosystem-wide oversight, where market-wide stress tests incorporate rating-agency behavior and feedback loops.

2. Pro-Rata Fee Structures

- Experimentation with multi-payer models (issuers, investors, or transaction counterparties sharing the fee), diluting conflicts of interest inherent in the issuer-paid approach.

3. Climate Scenario Mandates

- CRAs may be required to publish multiple ratings or stress metrics under different warming pathways (e.g., 1.5 °C vs. 3 °C scenarios), aligning credit risk with Paris-agreement goals.

4. Unified Global Standards

- Ongoing efforts by IOSCO, the Financial Stability Board, and the G20 aim to converge CRA regulations—minimizing jurisdictional arbitrage and fostering competition from non-incumbent agencies.

7. Conclusion

The regulatory reform journey for CRAs has been extensive yet remains incomplete. As credit rating becomes ever more central to capital markets, officials strive to calibrate a framework that preserves the agencies' role as impartial risk signalers while curbing conflicts and systemic amplification. The next phase will likely emphasize ESG integration, technological robustness, and a gradual transition toward models that blend external ratings with mandated internal credit assessments—ultimately aiming for a more resilient, transparent, and inclusive global credit-rating ecosystem.

Glossary of Credit Rating Agency Terms

1. **Credit Rating Agency (CRA)**

An independent firm that conducts a comprehensive analysis of the credit-worthiness of debt issuers—whether corporations, financial institutions, or governments—as well as debt instruments such as bonds and derivative products. The outcome is issued as a published rating notation officially recognized internationally.

2. **Rating Scale**

The scale used by CRAs to classify default risk. It typically runs from AAA (very low risk) down through AA, A, BBB (investment grade), to BB, B, CCC, CC, and C (high-yield/junk). "+"/"—" modifiers or numerical sub-categories (e.g., A1, A2) further distinguish risk within each rating band.

3. **Sovereign Rating**

An assessment of a country's credit-worthiness. It involves analysis of public debt levels, budget deficits, foreign-exchange reserves, fiscal health, and political and macroeconomic institutional stability.

Example: Greece's sovereign rating was downgraded from investment grade to junk during 2010–2012.

4. **Corporate Rating**

A rating assigned to non-financial companies. It focuses on operational performance, capital structure, future cash flows, and industry-specific risks.

Example: A manufacturing firm with a high Debt/EBITDA ratio would receive a lower rating.

5. **Structured Finance**

Securitized debt instruments—such as CDOs (Collateralized Debt Obligations), ABS (Asset-Backed Securities), and MBS (Mortgage-Backed Securities)—that pool underlying debt portfolios. CRAs

evaluate the cash-flow waterfall structure, tranche subordination, and the quality of the underlying assets.

6. **Investment Grade**

Rating categories deemed suitable for institutional investors due to their relatively low default risk, generally including BBB and above. Regulations often require banks and pension funds to hold only investment-grade instruments.

7. **High-Yield (Junk Bonds)**

Debt instruments rated BB or lower. Because they carry higher risk, issuers must offer higher yields to attract investors.

8. **Rating Outlook**

An indication of the likely direction of a rating over the medium term—"Positive" (possible upgrade), "Negative" (possible downgrade), or "Stable" (likely unchanged)—based on financial trends and external conditions.

9. **Default**

Failure by an issuer to pay principal or interest on a debt obligation within the agreed timeframe. CRAs track historical default rates by rating category as a reference for credit risk.

10. **Rating Migration**

The change in an obligor's rating over a specified period. For example, the probability of moving from AAA to AA within one year. Migration matrices inform risk modeling and credit-derivative pricing.

11. **Pro-cyclicality**

The tendency of ratings to move in line with the economic cycle: upgrades during expansions and downgrades during recessions, which can amplify market volatility and liquidity pressures.

12. **Conflict of Interest**

The potential for bias arising from the "issuer-paid" business

model, in which debt issuers pay CRAs for rating services.
Commercial pressures may influence the objectivity of ratings.

13. **Internal Ratings-Based (IRB) Models**

Bank-internal credit-rating models required under Basel II. Banks calculate their own Probability of Default (PD), Loss Given Default (LGD), and Exposure at Default (EAD) to determine regulatory capital needs.

14. **ESG (Environmental, Social, Governance)**

Environmental, social, and governance factors that are now integrated into credit assessments to reflect sustainability risks and opportunities.

Example: Climate-adjusted scores on green bonds.

15. **Fire Sale**

Rapid, distressed sale of assets at steep discounts, often triggered by rating downgrades that force investors to sell in order to meet portfolio risk limits.

16. **IOSCO & Dodd-Frank Regulations**

The international IOSCO Code of Conduct and the U.S. Dodd-Frank Act, which govern CRA practices, including methodological transparency, conflict-of-interest management, and external audits.

17. **Rating Watch**

A temporary “surveillance” status applied by a CRA when a material event could affect the rating, pending a final decision at the next scheduled review.

18. **Debt Ceiling**

The legislatively mandated maximum amount of government debt. Threats to this limit—as seen in the U.S. political standoff of August 2011—can trigger sovereign downgrades and market volatility.

19. **Basel III**

The post-2008 international banking standard that tightens capital,

Rudy C Tarumíngkeng: Credit Rating Agency (CRA)

liquidity, and leverage requirements, including how CRAs' ratings feed into regulatory asset treatment.

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