Credit Rating Agencies and Sovereign Debt:

Challenges and Solutions

Financing for Sustainable Development Office, UN DESA[1]

The COVID-19 pandemic has inflicted significant damage on global economic activity, exacerbated fiscal challenges worldwide, and impeded countries' ability to respond to the pandemic and achieve the Sustainable Development Goals (SDGs). Many countries have experienced downgrades of their sovereign credit ratings, higher borrowing costs and intensified risks of debt distress.

Developing countries have borne the brunt (over 95%)[2] of credit rating downgrades, despite experiencing relatively milder economic contractions. The fear of downgrades also hindered some countries' participation in official debt relief programs, including the G20's Debt Service Suspension Initiative (DSSI) and Common Framework for Debt Treatments beyond the DSSI (Common Framework).

Three challenges related to developing country sovereign credit ratings stand out: (i) the impact of downgrades on countries' cost of borrowing and on financial market stability, including whether there is perceived bias, volatility, and "cliff effects"; (ii) how public sector actions and official debt restructurings, such as DSSI, are incorporated into ratings analysis; and (iii) the integration of climate change and other non-economic factors into rating methodologies.

These dynamics have led to a renewed focus on private companies that determine sovereign ratings, and in particular the "big three" international credit rating agencies (CRAs): S&P Global, Moody's and Fitch. The big three also garnered attention following the East Asian financial crisis in 1998 and the 2008 global financial crisis, with a focus on **structural factors**, such as limited competition, incentives, and regulations (*See Box 1*). Yet few of the proposed structural reforms were implemented, due to both technical and political challenges. Reforms that were made (most of which were related to structured products) were undertaken on a piecemeal basis, and were mostly backward looking, focusing on the recent crisis.

Since 2008, rapid technological progress, including in artificial intelligence (AI), along with the growing nature of systemic risks, and the increasingly complex linkages in the financial system have underscored the need to re-evaluate the informational ecosystem supporting sovereign borrowing with a forward-looking approach that reflects a changing world with a forward-looking approach that reflects a changing world. The current crisis creates an opportunity to do so.

This policy note explores a range of solutions that can be taken to increase confidence in the accuracy of sovereign credit ratings and promote ratings that not only contribute better to the stability of the international financial system, but also encourage investment in sustainable development. Proposed solutions range from voluntary measures that can be implemented in the near term to long-term changes to institutional structures.

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[1] This paper builds on Griffith-Jones, S. and Kraemer, M. (2021), "Credit Rating Agencies and Developing Economies," United Nations Department of Economic and Social Affairs, DESA Working Paper No. 175, ST/ESA/2021/DWP/175, December 2021. It was produced under the supervision of Shari Spiegel. Individual contributors included Poh Lynn Ng, Peter Chowla, Sander Hanson Glas, Nona Tamale, Vaibhav Mishra, and Philipp Erfurth. The views and opinions expressed here¬in are those of the author and do not necessarily reflect those of the United Nations Secretariat. The designations and terminology employed may not conform to United Nations practice and do not imply the expression of any opinion whatsoever on the part of the Organization.

[2] Ibid.

Box 1

The role of credit rating agencies and structural challenges

Credit ratings play an important role in international capital markets as they provide creditors with assessments of a debtor's relative risk of default. Nonetheless, inaccurate ratings can impact the cost of borrowing and the stability of the international financial system, as demonstrated during the 2008 global financial crisis.

Discussions following the 2008 crisis highlighted several structural factors related to credit ratings, including: (1) the uncompetitive market structure with three dominant CRAs; (2) conflicts of interest inherent in the "issuer-pays" model; and (3) the excessive reliance on credit ratings in regulation. The United Nations General Assembly held a thematic debate on the topic in 2013[3], which was followed by an ECOSOC special meeting in 2014.[4] A review of the ongoing issues was presented by the United Nations' Independent Expert on debt and human rights at the 46th session of the Human Rights Council.[5] Yet despite years of efforts, progress on these issues remains limited, in part because adopting effective reforms remains difficult both technically and especially politically.

Uncompetitive market structure: The market for credit ratings can best be characterized as an oligopolistic structure. The three largest CRAs (Moody's, Standard and Poor's and Fitch) hold over 90 percent of market share, which means that the ratings are developed by a small group of analysts and creditor committees, without market pressures to update methodologies. Indeed, profit margins of the big three have steadily increased, reaching 60 per cent for Moody's and S&P in 2020. Barriers to entry are high. First, the business model is built on reputation and trust, which cannot be generated easily. Second, there may be inherent economies of scale in the provision of information (gathering, analysing, and distributing information has a high fixed cost). Third, issuers may be reluctant to switch CRAs to new market entrants since this may cause suspicion that they are trying to get a more favourable rating or avoid a downgrade. To increase competition, governments in different regions have tried to support market entrants, including non-profits and publicly-owned institutions, but global market share has not changed significantly, in part because of the reputational basis of the current big three's hold on the market.

Conflicts of interest: In the 1970s, CRAs changed their model from one in which investors pay for access to CRA ratings (investor-pays model) to one in which borrowers pay to have their securities rated (issuer-pays model). This was in part because CRAs believed that being remunerated by the users of credit ratings was not a sustainable business model. There are also questions of transparency linked to the investor-pays model, as only those who pay have access to ratings. However, the issuer-pays model has introduced conflicts of interest. CRAs are rating their paying clients and might fear losing business if they downgrade large clients.[6] Addressing the challenge of the oligopolistic market, as noted above, might actually exacerbate incentives for the manipulation of ratings as CRAs vie to win or retain business.[7]

The 2008 financial crisis led to a significant strengthening of regulatory oversight of CRAs, especially in the jurisdictions with the largest capital markets. To mitigate some of the conflicts of interest, regulations have attempted to insulate ratings analysts from their commercial colleagues who originate business and manage client relationships, which is a core part of the international code of conduct set out by the

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[3] United Nations (2013) "General Assembly Examines Growing Role of Credit Rating Agencies as Arbiters of Risk, while Speakers Call for Common Standards, Objectivity, Reforms", https://www.un.org/press/en/2013/ga11409.doc.htm.

[4] United Nations (2014) "Summary of the ECOSOC meeting on 'The Impact of Credit Rating Agencies on Financing for Sustainable Development'", 8 December 2014, https://www.un.org/esa/ffd/wp-content/uploads/2015/01/CRA_summary.pdf.

[5] Li, Yuefen (2021) "Debt relief, debt crisis prevention and human rights: the role of credit rating agencies" A/HRC/46/29.

[6] There may also be further personal consideration of pressures from outside the ratings organization. Rating analysts of several agencies were tried, alongside the agencies themselves, in an Italian criminal court for ratings downgrades of Italian debt made during the eurozone crisis and were only acquitted after five years. Knowledge of this may lead some analysts to think twice about lowering rich countries' sovereign ratings.

[7] Bolton, Patrick, Xavier Freixas and Joel Shapiro. 2012. "The Credit Ratings Game." *The Journal of Finance*. LXVII(1): 85-111.

International Organization of Securities Commissions (IOSCO).[8] While there have not been major public scandals, the regulatory authority in the United States that oversees the big three regularly cites violations of policy.[9] As another example, the European Securities and Markets Authority recently fined one of the big three for violations related to failure to disclose shareholder conflicts of interest.[10]

Hard wiring of ratings into regulatory frameworks: One of the structural challenges is not based on the CRAs themselves, but on how ratings are used. Credit ratings are often "hard-wired" into some financial regulations and investment guidelines. The Financial Stability Board (FSB) set out Principles for Reducing Reliance on CRA Ratings to reduce mechanistic reliance on external credit ratings in regulatory standards in 2010, and published a roadmap for implementation in 2012.[11] These Principles urge investment managers to conduct their own independent credit and risk assessments.[12]

The 2010 Dodd-Frank Act in the United States indicated that banks and other financial institutions should not use external ratings for risk weighting of assets. In the European Union, CRA Regulation 462/2013 (also known as CRA III), which has been in force since 2010, instructs financial institutions to "not solely or mechanistically rely on credit ratings for assessing the creditworthiness of an entity or financial instrument."[13]

In 2014, the FSB published it final peer review report on implementation of the roadmaps,[14] and thereafter published self-assessments by FSB members in annual notes on "Implementation of G20/FSB financial reforms in other (non-priority) areas."[15] In the most recent report, published in 2019, implementation of roadmaps was self-reported to be complete in 21 jurisdictions, with 3 FSB-member jurisdictions still in the process of implementation. Subsequent reforms to the Basel Framework, the international standards for the prudential regulation of banks, still allowed external credit ratings to be used to determine risk weights from rating agencies approved by national authorities and meeting certain standards, with rule 20.4 explicitly setting out risk weights to apply to sovereign debt based on credit assessments.[16]

Continued reliance on ratings is in part linked to difficulties in the development of alternative standards of creditworthiness. If ratings were not used, some other standard, or rating, would need to be developed, at least without major changes to the capital requirement framework. The above structural challenges have ongoing implications for the entire credit ratings business, beyond sovereign ratings. While, to date, implementing effective solutions has been challenging, efforts to reform the roles of CRAs to address the challenges related to sovereign debt should be cognizant of these broader concerns.

What makes sovereign ratings unique?

While corporate ratings have a long history dating back to the 19th century, modern sovereign ratings on emerging market bonds only rose to the limelight in the 1990s when a number of developing countries

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[8] See the 2015 Code of Conduct Fundamentals for Credit Rating Agencies, issued by the International Organization of Securities Commissions, https://www.iosco.org/library/pubdocs/pdf/IOSCOPD482.pdf.

[9] See for example the Security and Exchange Commission's 2019 Summary Report of Commission Staff's Examinations of Each Nationally Recognized Statistical Rating Organization, pg 19-21.

[10] ESMA (2021) "ESMA fines Moody's €3.7 million for conflicts of interest failures", https://www.esma.europa.eu/sites/default/files/library/esma71-99-1622_cra_enforcement_case_moodys_march_2021.pdf

[11] FSB (2012) "Roadmap and workshop for reducing reliance on CRA ratings: FSB report to G20 Finance Ministers and Central Bank Governors", 5 November 2012.

[12] Financial Stability Board (2010) Principles for Reducing Reliance on CRA Ratings, available at https://www.fsb.org/wp-content/uploads/r_101027.pdf?page_moved=1

[13] ESMA (2011), CRAR: Regulation (EC) No 1060/2009 of the European Parliament and of the Council of 16 September 2009 on credit rating agencies, Article 5a, https://www.esma.europa.eu/databases-library/interactive-single-rulebook/clone-crar/article-5a-1.

[14] FSB (2014) "Thematic Review on FSB Principles for Reducing Reliance on CRA Ratings: Peer Review Report", 12 May 2014.

[15] FSB (2016) "Implementation of G20/FSB financial reforms in other (non-priority) areas", https://www.fsb.org/wp-content/uploads/2016-IMN-summary-of-implementation-progress.pdf.

[16] Bank for International Settlements (2019) "Calculation of RWA for credit risk: CRE20: Standardised approach: individual exposures", 15 December, https://www.bis.org/basel_framework/chapter/CRE/20.htm.

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issued debt on capital markets following the Brady plan (which securitized relatively illiquid bank loans into tradable emerging market bonds). However, only a small number of developing countries had a sovereign rating at the time, with South Africa the only country in Sub-Saharan Africa with a rating at the beginning of the century. With the growth of emerging market bond issuance, the role of CRAs has expanded. As of 2021, over 150 international jurisdictions have sovereign ratings from at least one of the big three CRAs.

Sovereign ratings are structurally different from corporate ratings. In particular, judgement plays a much greater role in sovereign rating decisions. This is because political risks and "willingness to pay" are critical to sovereign credit analysis. Sovereigns shape the country's macroeconomic conditions and make choices on tax revenues and expenditures, which directly impact their ability to repay their debt. Sovereigns may also draw on support from multilateral institutions in case of adverse economic conditions, so that geopolitical issues are also relevant. There is also a higher degree of uncertainty on recovery values in the case of a restructuring. Creditor rights are not always enforceable since creditors can only seize a country's assets located in certain offshore jurisdictions, and there is no clear seniority in sovereign debt that lays out how creditors will be repaid.

Sovereign ratings thus contain two components: a data driven component based on a country's ability to repay its debt, and a discretionary component based on the judgement of a credit analyst and a credit committee comprised of staff of a CRA (see Box 2). The discretionary component is generally considered to be the principle added value of a CRA's sovereign rating.

Box 2

How are developing countries ratings determined?

Credit ratings don't specify a probability of default (or expected loss); rather they represent a rank ordering of credit risk, from least to most risky.[17] Any implied default probabilities are an artefact of how ratings are incorporated into prudential regulation of financial institutions, especially risk weights applied to assets for the purposes of determining capital adequacy, or market prices. Though each of the big three rating agencies use somewhat different methodologies, sovereign ratings are generally based on five building blocks:[18] (i) institutional and governance quality; (ii) economic growth and resilience; (iii) public finances; (iv) external accounts; and (v) monetary flexibility. Credit analysts typically create indicative "anchor scores" for each of these five rating factors. The five factors incorporate varying degree of subjective analysis. For example, the institutional and governance component is based on a high degree of judgement. The monetary component includes both objective factors (such as the exchange rate regime) and qualitative factors (such as the credibility of monetary policy, which requires a greater degree of judgement).[19] While quantitative variables may be considered objective, the choice of which variables to include and the weightings applied to them in each CRA's model are also up to the judgement of analysts. Additionally, CRA analysts apply another "qualitative" overlay to the rating based on additional political and other risks related to a country's "willingness to pay". The CRA credit committee then reviews the rating and can adjust the indicative scores up or down.

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[17] Kiff, J., Nowak, S., Schumacher, L.B., 2012 January. "Are Rating Agencies Powerful? An Investigation into the Impact and Accuracy of Sovereign Ratings," IMF Working Papers 12/23, International Monetary Fund.
[18] These building blocks are based on S&P's methodology. Moody's categorization is: Economic Strength, Institutions and Governance Strength, Fiscal Strength, and Susceptibility to Event Risk.
[19] For an in-depth discussion, see Griffith-Jones, S. and Kraemer, M. (2021)

Box Figure 1

Typical building blocks of a sovereign rating

A mix of rules (red) and judgement (blue)

Source: Griffith-Jones, S and Kraemer, M, 2021

The term horizon of a sovereign rating is important as it sets the parameters for what factors are included in the ratings decision. The current CRA "long-term" credit rating is meant to cover three to five years for noninvestment grade issuers and up to ten years for investment grade issuers. However, in practice sovereign ratings generally utilize financial and economic forecasts up to only three years.

In terms of transparency, the big three CRAs publish an overview of their methodologies on their websites, as required under the 2015 Code of Conduct Fundamentals for Credit Rating Agencies, issued by the International Organization of Securities Commissions (IOSCO), and the 2019 Basel Framework for prudential banking regulation. However, aspects of the methodologies remain opaque, such as the underlying assumptions, including the variables and weights used in the models, the criteria used in the deliberations of rating committees, and the extent to which discretion is applied.

Challenges related to sovereign ratings

Predicting the future is subject to enormous uncertainty, especially when it incorporates subjective qualitative factors. The challenges associated with scoring a governments' future financial behavior – which ultimately affects the cost of country borrowing and thus impacts this future behavior – has opened rating agencies to a range of criticisms.

Challenge 1: The impact of credit ratings on the cost of borrowing and market volatility

To understand the impact of credit rating, it is important, to the extent possible, to distinguish the effects of ratings from other factors that affect market pricing – irrespective of ratings announcements made by the CRAs. Several studies show that sovereign ratings lag market prices, meaning that much of the changes in the cost of borrowing are due to market perceptions of risk, not the rating changes per se.[20] Nonetheless, CRAs still can have significant impacts. Negative warning announcements by CRAs (i.e. "reviews,"

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[20] Larrain et al., "Emerging Market Risk and Sovereign Credit Ratings", Working Paper No.124, OECD Development Centre, April 1997; Reisen, Helmut, and Julia Von Maltzan. "Boom and bust and sovereign ratings." *International Finance* 2.2 (1999): 273-293.

"watches," and "outlooks") have been linked to increases in the cost of borrowing, particularly for developing countries, at 160 basis points vs. 100 basis points for advanced economies.[21]

To the extent that sovereign credit rating announcements transmit information to the market, they should be expected to impact the cost of borrowing for countries. Valid criticisms of CRAs are not so much that they impact market prices, but whether ratings transmit inaccurate information, have biases against developing countries, or are linked to forced selling above what would be warranted by market fundamentals (i.e. due to so-called "cliff effects"). Another question is whether CRAs augment the volatility and procyclicality that is already prevalent in capital markets (with ratings rising in boom periods and falling during slowdowns or crises when countries need financing the most). On the other hand, if ratings are relatively stable, they could help moderate volatility, thus playing an important dampening role.

In addition, ratings can affect macroeconomic policy-making – in both positive and negative ways, (similar to so-called "market discipline"). Because ratings measure the ability of governments to repay borrowers, the magnitude of a country's fiscal deficit is an important factor in ratings analysis. Countries that get ratings are often under pressure to maintain tight fiscal policy to avoid a ratings downgrade. However, this might result in austerity or tighter fiscal policy than would otherwise be warranted, which could impact investment in sustainable development and growth. This is an argument to why countries that are not issuing sovereign bonds should not prematurely get sovereign ratings.

1. Biases in ratings

Bias in ratings against a country or group of countries is difficult to substantiate, in part because judgement is an important element in sovereign ratings (see Box 2). There are long-standing questions of whether CRAs incentives are tilted towards advanced economies (AEs). CRAs are domiciled in AEs, have most of their business in AEs, have a longer history of issuing ratings in AEs, and are overseen by regulators of the AE sovereigns being rated. Cultural and linguistic factors also contribute to a potential home bias.[22]

Ratings actions during the Covid-19 pandemic revived questions of potential bias.[23] Economic output of the AEs contracted by more than twice the pace of contraction in emerging market and developing economies (EMDEs), at -4.7% vs. -2.2% in 2020.[24] The average government debt ratio of AE's increased by 16 percentage points to 120% of GDP, compared to a 9 percentage points increase, to 63%, in EMDEs. Yet, AEs, which account for 29% of all issuer ratings of the big three, received less than 5% of all downgrades during the pandemic (Figure 1). A detailed analysis showed that 61 out of 154 rated sovereigns were downgraded by at least one of the big three CRAs during the COVID pandemic, with middle income countries (MICs) representing 60% of the downgraded sovereigns. Eleven of the 21 small-island developing States (SIDS) with ratings by any one of the three CRAs were downgraded, in part linked to declines in tourism. Seven of the 19 least developed and other low-income countries that were rated before the pandemic were downgraded. Greece and Lithuania were the two exceptional sovereigns that were upgraded during this period.

There can be many reasons for the discrepancy in downgrades. For example, AEs' higher income and more diversified economies may make them more resilient to shocks. However, the risk of a perception of bias underlines the importance of transparent methodologies, so as not to undermine confidence in ratings.

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[21] Kiff, et. al., 2012, *op cit*; Kaminsky, Graciela, and Sergio L. Schmukler, "Emerging market instability: do sovereign ratings affect country risk and stock returns?" *The World Bank Economic Review* 16.2 (2002): 171-195.

[22] Fuchs, Andreas, and Kai Gehring. "The home bias in sovereign ratings." *Journal of the European Economic Association* 15.6 (2017): 1386-1423.
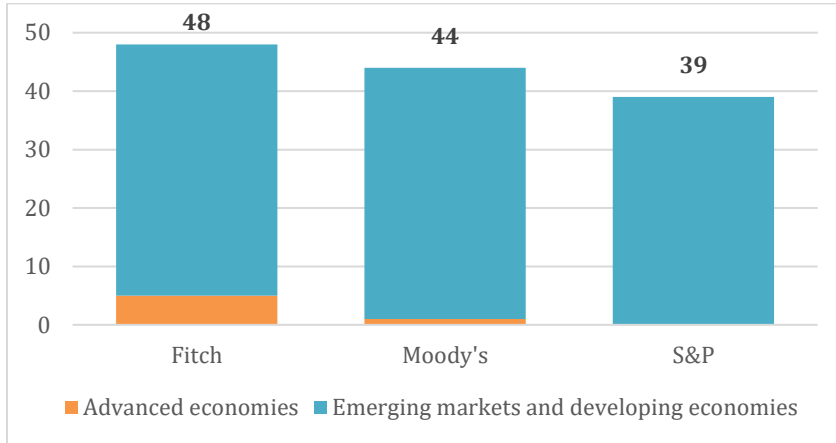
[23] Griffith-Jones, S. and Kraemer, M. (2021)

[24] International Monetary Fund's World Economic Outlook Database, April 2021.

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Figure 1
Sovereign downgrades are concentrated in EMDEs
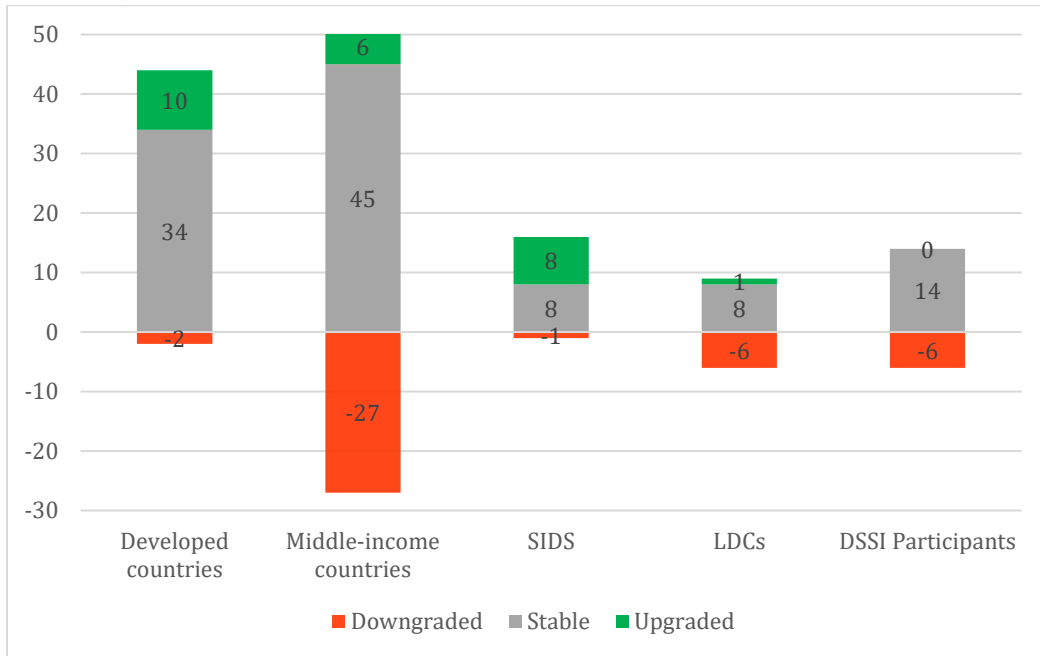*(in cumulative notches, Feb 28, 2021 versus Jan 31, 2020*

Source: Griffith-Jones, S and Kraemer, M, 2021
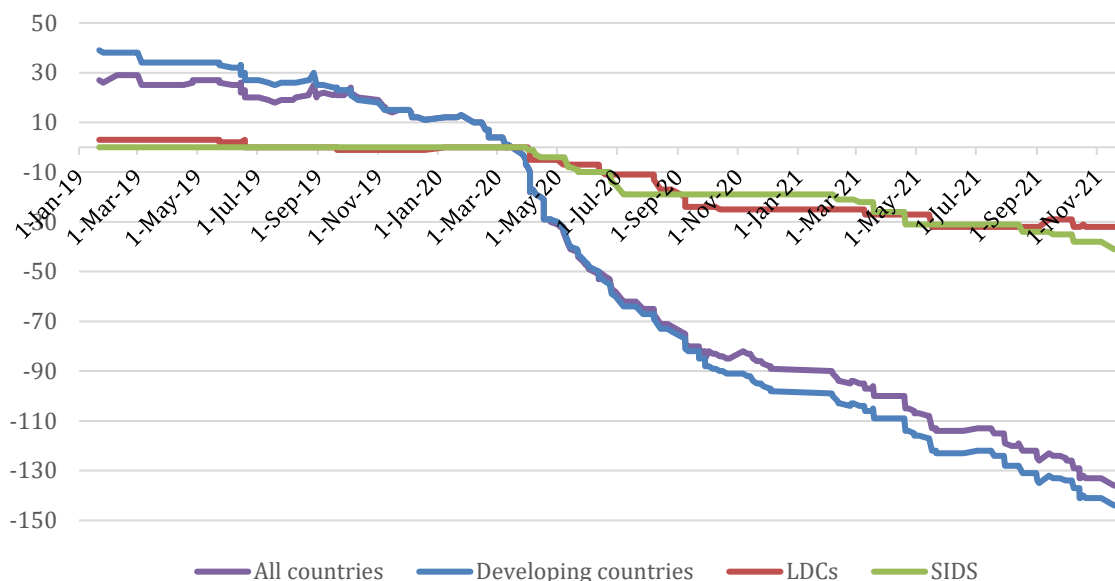
Figure 2
Credit rating impacts of the COVID-19 pandemic, by country grouping
(number of countries)

Source: DESA calculations based on Moody's Analytics

Figure 3
Sovereign ratings movement over time, by country grouping

Source: DESA calculations, based on Moody's Analytics
Note: This figure shows an index of rating actions by Moody's analytics, with 0 on 11 March 2020, the date of declaration of the global pandemic by WHO. All sovereigns are weighted equally, each positive (negative) outlook is +1 (-1); a review for upgrade (downgrade) is +2 (-2); and a positive (negative) rating change is +3 (-3).

2. Cliff effects

CRAs use rating scales that range from AAA (the highest) to D (the lowest). Despite the number of points on the scale, market practice has resulted in the division of securities into being considered "investment grade" and "speculative grade". Ratings from AAA to BBB- are considered investment grade, and ratings BB+ and below are considered speculative. This artificial division, which is not promulgated by the CRAs,[25] can create risks for financial stability. This is because many investors have mandates that restrict them from making speculative investments. When issuers loses investment grade status (so-called "fallen angels), they may face a wave of forced selling of its debt, raising the cost of borrowing beyond what would be implied by economic and financial fundamentals.

Such "cliff effects" are due to the way ratings are used, rather than the ratings themselves. CRAs are cognizant of the cliff effects, which influences their decision-making. A credit committee will be more inclined to give the benefit of doubt before downgrading an issuer to non-investment grade than at any other point of the rating scale. The resulting stickiness is pronounced for corporate ratings but is also visible for sovereign ratings in S&P data.[26] Such hesitancy to cross the investment grade divide blunts the ratings signal and can dilute the quality and objectivity of ratings. In addition, CRAs sometimes overreact with a

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[25] Historical research indicates that this dichotomy was first popularized by the regulatory authorities in the United States in the midst of the Great Depression, as they passed new rules to try to enforce rules to shore up private banks' balance sheets, but it was then embraced by market participants. See: Fons J (2004) "Special Comment: Tracing the Origins of 'Investment Grade'", Moody's Investors Service, available from: http://www.fonsrisksolutions.com/Documents/Investment%20Grade.pdf.

[26] Moritz Kraemer, Patrycja Klusak and Huong Vu. *First-mover disadvantage: The sovereign ratings mousetrap*. February 2020.

lag to economic conditions and business cycles, which can paradoxically lead to greater volatility and procyclicality when ratings are ultimately adjusted.[27]

During the pandemic, five sovereigns were downgraded from investment grade to non-investment grade by at least one of the big three CRAs.[28] Yet, during this time, it is unclear how much the downgrades affected market pricing, compared to other (e.g. Covid-related) factors. Figure 3 shows the 10-year government bond yields for the largest sovereign issuers that could be considered a fallen angel. In this case, yields appear to have moved (temporarily) before the announcements rather than respond to the downgrades.

Figure 4

Ratings actions and bond yields for South Africa, 2019-2021
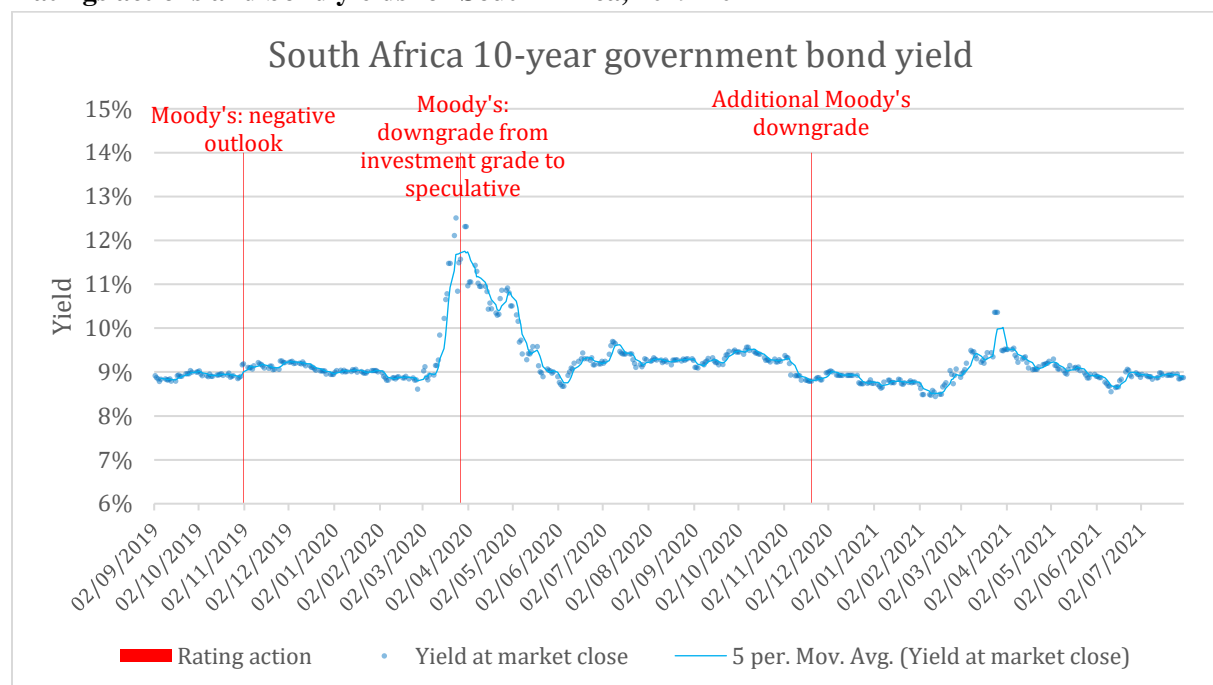
Box 3

Reliance of investment funds on credit ratings by CRAs and the impact of "cliff effects"

Despite efforts to reduce the reliance on credit ratings in investment decision-making, the use of credit ratings by mutual funds has increased since the global financial crisis.[29] The Financial Stability Board (FSB) has noted that, "credit ratings are widely used throughout the financial system; including for defining the investment universe of a given investor, defining mandates given to asset managers, and for constructing indices against which asset managers benchmark their performance."[30] Between 2010 and 2018, only one in 14 fund mandates did not refer to credit ratings. According to the FSB "59% of mandates refer to a particular credit rating agency or to a specific alphanumeric rating, 88% refer to "high yield", "investment grade", "speculative grade", or other terms which reference ratings indirectly, and 93% refer to ratings in

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[27] Kiff, et. al., 2012, *op cit*.

[28] These include South Africa, Morocco, the Bahamas, Aruba, and San Marino.

[29] Baghai, R. (2019), "*The Private Use of Credit Ratings: Evidence from Mutual Funds Investment Mandates*" Discussion paper No. DP13418, Centre for Economic Policy Research (CEPR) available at
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3310343

[30] Financial Stability Board (FSB) (2020) "*COVID-19 Pandemic: Financial Stability Impact and Policy Responses*", available at:
https://www.fsb.org/2020/11/covid-19-pandemic-financial-stability-impact-and-policy-responses/.

at least one way."[31]

Distinction should be made between active and passive investment funds. Active funds are usually managed by a fund or portfolio manager who identifies viable investments with the aim of exceeding the set market benchmark. Frequently those fund managers have flexibility to determine their investment strategies. On the other hand, passive funds, such as mutual funds and exchange-traded funds (ETFs), usually invest in and track their performance against the performance of assets in a benchmark index through an automated process.[32]

Mechanistic reliance on credit ratings is persistent in passive investing strategies, which have risen from 3% in 1995 to 41% of combined U.S. mutual funds and ETFs in 2020.[33] Studies have shown that benchmark-driven investors are often likely to sell when investments are downgraded from investment grade to high yield.[34] This is a risk faced by emerging markets under global bond benchmarks, which tend to rely on ratings to make index inclusion or exclusion decisions.[35] Further, a credit downgrade may result in the lowering of a country's weights in an index, resulting into capital outflows.[36]

3. Procyclicality and short-termism

The current CRA "long-term" credit rating is meant to cover three to five years for noninvestment grade issuers and up to ten years for investment grade issuers. In practice sovereign ratings generally use financial and economic forecasts up to only three years, which may not sufficiently incorporate sustainability considerations, and which may over-emphasize near-term economic business cycle expectations.

CRAs aim to provide analysis of countries' medium to long-term solvency and set ratings "through a cycle" (i.e. through cyclical economic slowdowns), meaning that ratings are not meant to fluctuate based on short-term factors. There is evidence that in practice, however, ratings tend to be procyclical,[37] particularly during crises, such as the Asian and Mexican crises in the 1990s.[38] More recently, a study that examined 27 African countries between 2007 and 2014 found that there was an increased probability that Fitch and Moody's upgraded ratings during boom periods and downgraded them during recessions.[39]

Similar to pro-cyclicality in capital markets, credit ratings pro-cyclicality is likely in part linked to the time horizon. Sudden developments, for instance a change in global risk aversion, might affect a country's external accounts and public finances in the near term, impacting its rating. Longer timeframes might recognize that the fundamentals largely remain intact and therefore be less prone to pro-cyclical downgrades.

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[31] Ibid. The use of ratings differed with various mandates for instance: 1) some stated that they invest primarily in investment grade securities, 2) others referred to specific minimum ratings; 3) some required ratings from specific agencies and 4) others relied on ratings of any regulated agency.

[32] Anadu, K. et al, (2020) "*The Shift from Active to Passive Investing: Risks to Financial Stability?"* Working Paper SRA 18-04 Federal Reserve Bank Boston.

[33] The distinction may not always be clear cut since some active investment funds are increasingly using passive strategies, while investment firms actively manage some of their mutual funds and ETFs. See Anadu, K. et al, (2020), supra.

[34] FSB (2020), supra at p.5. See also, Arslanalp, S. et al. (2020), "*Benchmark-Driven Investments in Emerging Market Bond Markets: Taking Stock*" IMF Working Paper WP/20/192 available at
https://www.imf.org/en/Publications/WP/Issues/2020/09/25/Benchmark-Driven-Investments-in-Emerging-Market-Bond-Markets-Taking-Stock-49740

[35] Emerging markets bond benchmarks, on the contrary, are less sensitive to credit ratings. J.P. Morgan Emerging Market Bond Index (EMBIG), for dollar-denominated bonds, and the J.P. Morgan Government Bond Index–Emerging Markets (GBI-EM), for local currency bonds, are the common indices for emerging markets bonds.

[36] Arslanalp, S. et al. (2020).

[37] Griffith-Jones, S. and Kraemer, M. (2021)

[38] Ferri, G., Liu, L., Stiglitz, J. (1999), "*The Procyclical Role of Rating Agencies: Evidence from the East Asian Crisis"* Economic Notes, vol. 28 pp 335-355.
Reisen, H. (2002), "*Ratings Since the Asian Crisis*" OECD Development Centre.

[39] Botha, I. and Pretorius, M. (2017), "*The Procyclicality of African Sovereign Credit Ratings"* International Conference on Applied Economics.

There is also evidence that rating agencies are driven to be more conservative during crises to protect their reputation capital, and that qualitative aspects of their risk evaluation seem to be particularly pro-cyclical.[40] As laid out below, long-term ratings, as well as greater transparency can help address some pro-cyclicality.

Challenge 2: Accurately incorporating the impact of international cooperation on debt sustainability into ratings

Official sector debt relief can help strengthen countries' balance sheets and ability to repay all debt in the medium term. Despite no countries ultimately being downgraded for participation in the DSSI, some developing countries, including those with elevated debt distress risks, were deterred from joining the programme due to the fear that participation would trigger rating downgrades. Greater dialogue could have helped avert such misunderstandings, on the part of both countries and CRAs. A standing, formal structure or framework to facilitate continued dialogue could be considered.

Additional research and transparency on the impact of past debt restructurings on a country's future ability to repay would also help countries have a more accurate picture of the implications of restructuring. The official sector should also work with countries to enable quick access to capital markets following a restructuring.

Challenge 3: Incorporating long-term risk factors such as climate risk

The increasing frequency and magnitude of climate shocks has highlighted the impact of longer-term factors on a country's debt sustainability. Researchers at The University of Cambridge's Bennett Institute for Public Policy estimated that 63 developed and developing countries will experience rating downgrades of more than one notch by 2030 due to climate change.[41]

Amid a growing recognition of the physical and transition risks arising from climate change, CRAs are increasingly integrating climate into their ratings. In 2019, 36% of Moody's rating adjustments of emerging market issuers were informed by sustainability risks, particularly climate.[42] As sustainability indicators are further incorporated into sovereign ratings, on average it will likely lower the credit ratings of developing countries, leading to an increase in already high cost of financing for many.

At the same time, a country's efforts to invest in the SDGs could conversely be viewed favorably in ratings. This is especially true with respect to investments in resilience and climate adaptation, but investments in many priority areas of sustainable development, including sustainable infrastructure, can also materially enhance a country's future economic growth, sovereign creditworthiness, and debt carrying capacity. While these investments may increase levels of public debt in the short term, in the long term, they should stimulate growth and countries' ability to repay their debt obligations.[43]

Areas of action and policy solutions

Growing systemic risks, along with fast-paced technological change call for an update to sovereign credit analyses and methodologies to reflect the changing world. While structural challenges to CRAs are well known, solutions have been slow to be implemented, and updates to the market for credit ratings have often been in the form of *ad hoc* changes in response to recent or past crises. At the same time, some proposed solutions might create new or unseen problems. For example, calls to halt ratings downgrades during crises

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[40] Griffith-Jones, S. and Kraemer, M. (2021)

[41] Patrycja Klusakab, Matthew Agarwalabc, Matt Burkeab, Moritz Kraemer, and Kamiar Mohaddes. *Rising Temperatures, Falling Ratings: The Effect of Climate Change on Sovereign Creditworthiness*. 18 March 2021.

[42] Moody's, "Moody's - ESG credit risks more prevalent in emerging markets than in developed markets", (25 November 2020).

[43] Inter-agency Task Force on Financing For Development, *Financing for Sustainable Development Report*, United Nations 2021/2022

altogether could lead to greater uncertainty in markets, and raise risk premiums for all emerging market debt.

Solutions should consider a forward-looking, dynamic, and coherent approach adjusted to the current economic environment, and that will support the sustainable development agenda. Below are potential measures that can contribute to this new approach. They are laid out starting with voluntary measures to structural reforms that may be considered.

Update ratings methodologies and enhance transparency

The growth of technology brings into question the use of static models to assess a country's credit quality, particularly regarding elements of the rating process involving models of economic growth, resilience, public finances, and external accounts. This is particularly salient in a world of growing and interrelated systemic risks, and high uncertainty.

a) **Incorporate scenarios for both economic and non-economic (e.g. climate) risks:** Predicting the future is subject to enormous uncertainty, and no analyst gets it right all the time. Ranking default probabilities should be less about predicting the future, than about understanding how well countries respond to risks that are largely unknown. CRAs should be encouraged to publish scenario analysis and simulations on debt dynamics under different economic and non-economic assumptions as a *central* part of analysis of a country's ability to repay its debt. This includes scenario analysis of climate transition pathways, similar to climate risk scenarios in regulatory financial stress tests. Scenario analyses would help address the high degree of uncertainty in forecasts, including in longer-term time horizons (see below). Such analysis would also help CRAs avoid criticism when each new crisis highlights new risks and leads to pro-cyclical downgrades.[44]

   This work can potentially be enhanced with Artificial Intelligence (AI) credit models, which in some cases appear to outperform current rating models.[45] Nonetheless, AI also has the potential to introduce algorithmic biases into credit assessments.[46] It thus needs to be used transparently, with judgement remaining an important complement to a mechanistic model-driven approach, highlighting the role for CRAs.

b) **Transparently separate quantitative models from value-added judgement:** A clear distinction between the model-based and the discretionary components of ratings can help investors better assess the quality and objectivity of ratings. CRAs could publish the model-based assessments and then superimpose the "qualitative overlay" of analytical judgment. This two-step process would be important to also understand and moderate any biases introduced by heavier use of AI in credit models. Transparent publication of this process could help address concerns over biased ratings, shine a light on CRA decisions about model design, and increase confidence in rating accuracy. Over time, it could also highlight the quality and value-added of the analytical evaluations done by the different CRAs. Alternatively, model based approaches or debt assessments already done by the official sector can be make public and comparable, to again highlight the value added of CRAs, as discussed below.

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[44] Griffith-Jones, S. and Kraemer, M. (2021)

[45] Modelling sovereign credit ratings: The accuracy of models in a heterogeneous sample, https://www.sciencedirect.com/science/article/abs/pii/S026499931600016X;
On the information content of sovereign credit rating reports: Improving the predictability of rating transitions, https://www.sciencedirect.com/science/article/pii/S104244312100063.

[46] United Nations (2019) 2019 Financing for Sustainable Development Report, chapter II.

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Develop long-term ratings

To the extent that capital markets are short-term oriented, bond investors are often less concerned with a countries' long-term growth prospects than with its near-term fiscal accounts. "Market discipline" can thus, at times, put pressure on policymakers to focus on short-term indicators rather than long-term sustainable development. This bias can be reflected in ratings. However long-term investors should be interested in both near-term solvency and long-term sustainability.

Pension funds and insurance companies which have long-term liabilities, should especially be interested on how well a country preforms over a longer time-horizon. Indeed, when measured over a longer time-horizon, emerging market debt has been one of the best performing asset classes, with persistent (but time varying) excess returns relative to market risk.[47] This indicates a mismatch between the short-term ratings of sovereign debt and their real returns in the long-run. Long-term investors could advocate for longer-term ratings.

On the issuer side, a growing number of countries are issuing, or would like to issue, sovereign bonds with longer maturities of up to 50 or even 100 years. The introduction of longer-term ratings can be seen as an important mechanism to support this lengthening of investment horizons, which has been highlighted as an important contributor to improving the environment for financing for sustainable development.[48]

Ideally, rating methodologies could incorporate more long-term factors, such as environmental and social risks and improvements, which could be published in new long-term assessments that complement existing assessments. The use of scenarios for both economic and non-economic risks could make long-term assessments more manageable to produce. Such scenarios can be derived from stress tests for various adverse shocks and their impacts on debt dynamics, or through probabilistic approaches that develop many scenarios and allow to assign likelihoods to different debt paths, including adverse scenarios. Long-term ratings could help reduce procyclicality and, if well implemented, capture the positive effects of investments in climate and environmental resilience.

Incorporating sustainability-related risks and the positive effects of sustainable investment on a country's growth prospects and fiscal revenues could also encourage governments to pursue less myopic policies, given that prioritizing SDG investments, including in climate change adaptation, would improve a country's long-term rating. Indeed, a favourable long-term rating could both create incentives for countries to invest more effectively in sustainable development and help them raise long-term capital for that purpose.

Increase dialogue of CRAs with the public sector

Going forward, it would also be helpful for the CRAs to engage more in dialogue with the public sector in the rating processes. This would enable a deeper understanding of government policies and international official programs. These engagements would not be meant to influence rating decisions, but instead to close any informational gaps the CRAs may have about the scope and terms of new initiatives or facilities, which will in turn improve the quality of ratings. This is particularly important when debt relief, debt suspension, or other debt sustainability initiatives, such as the DSSI and the Common Framework, are launched at a global level. They can also cover initiatives or reforms taken by international financial institutions, or other important financial actors such as regional financial arrangements. Currently, *ad hoc* arrangements may mean important information is not conveyed in a timely fashion to the right people in the credit rating marketplace. A standing, formal structure or framework to facilitate continued dialogue would also help

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[47] Meyer, Josefin, Carmen M. Reinhart, and Christoph Trebesch. Sovereign bonds since Waterloo. No. w25543. National Bureau of Economic Research, 2019.
[48] United Nations (2017) "Financing for Development: Progress and Prospects: 2017 Report of the Inter-agency Task Force on Financing for Development", https://developmentfinance.un.org/iatf2017.

level the playing field, as compared to current approaches, which may prioritize discussions with larger jurisdictions.[49]

Moving from a cliff-edge to a graduated approach

Regulators, standard setters, investors and CRAs need to work together to soften the cliff-edge dichotomy between investment-grade and below-investment-grade, which can create unwarranted volatility in the market. This can be accomplished by having a graduated categorization of debt ratings and taking a portfolio approach to ratings requirements.

a) **Create overlapping categories of ratings:** CRAs themselves do not promulgate the investment-grade cliff, which has been an artifact of the regulatory approach, originating in banking supervision in the 1930s. However, CRAs can more explicitly create overlapping tiers of ratings. For example, a rating such a Baa, might be included in the "top-tier" as well as in the "medium-tier", providing a transitional time, when a country's debt will not necessarily fall out of investment mandates. This can enable a smoother entry and exit of investor classes with different risk appetites, reducing the risk of sharp selloffs after a rating downgrade.

b) **A portfolio approach to investment mandates:** Many portfolio managers, including bond and pension fund managers, seek to diversify their credit risks, but have a cliff based on their established investment mandates, which often prohibit the holding of instruments below a certain credit assessment. Instead of investment triggers based on the rating of individual instruments, managers could focus on the average rating of a portfolio. In the case of a downgrade, this would allow investment managers to either rebalance their portfolio with a higher portion of highly rated instruments, or more gradually reduce exposure to a certain country's debt rather than having a sudden rush to the exits by a number of managers at once. This would allow portfolio managers to diversify credit risks, while still maintaining a sufficiently high average credit quality on their assets.

c) **Adjust regulatory regimes for a graduated approach**: Risk weighted asset regulations, including those from securities and insurance regulators, could also adopt a more dynamic approach to risk weighting to correspond to the more graduated categorization of credit ratings. Each type of regulation – banking, insurance, investment fund, pension – has different ways of incorporating ratings into both rules and supervision. This also varies by jurisdictions as some jurisdictions have entirely removed ratings from regulatory rules. Rules can be softened with allowance for a balanced portfolio approach. Another option is to provide a temporal graduation so that risk weights are not instantly increased when a downgrade occurs, but gradually applied over a longer time frame (e.g., 6 months) to allow smoother adjustment. Further regulatory reforms can incentivize investors to pursue their own internal credit risk assessment and to undertake proper due diligence.

Additional structural changes

Several structural reforms (e.g., in regulations or through new institutions) were proposed following the 2009 financial crisis. However, to date very few of the reforms were implemented.

a) **Enforcing standards for CRAs**

CRAs fall under the supervision of national regulators, such as the European Securities and Market Authority (ESMA), which respond to the international standards set out by IOSCO and those included in the Basel Framework. While many of the above reforms can be undertaken voluntarily by the CRAs

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[49] https://www.reuters.com/article/uk-health-coronavirus-eu-regulator-idUKKCN21R27D

and their users, international norm-setting bodies could include some of them into the standards for CRA operation and supervision.

b) Reduce mechanistic reliance on ratings

Efforts, undertaken since the 2009 financial crisis, to reduce the mechanical reliance of regulations on ratings by CRAs have proved challenging, in part because there are no easy options. Nonetheless, some alternatives are already being used; Basel Framework rule CRE 20.6 allows risk weighting based on export credit agency risk scores, though this is limited to export credit agencies participating in OECD methodologies.

c) Enhanced competition and addressing conflict of interest

There are also several proposals to introduce more competition into the credit rating marketplace. The creation of national, regional or international publicly owned CRAs could encourage competition and avoid the conflict of interest faced by private CRAs. Public CRAs would, however, face their own set of conflicts of interest, which would require clear governance structures to enable them to operate at arms-length from government's influence. Other alternatives put forward include a non-profit institution, which could specialize for example, in issuing long-term credit ratings. Another alternative is for the financial sector to create cooperative institutions to provide credit assessment services on a non-profit basis. Governance could be modelled on SWIFT, a cooperative banking-sector-owned utility for providing secure payments messaging. This would be a return to an investor-pays model of CRA, but without the potential conflicts of interest from having to sell services, with ratings provided to all members equitably. Nonetheless, this structure would likely also have its own conflicts of interest. A key, open question is whether markets would trust ratings by any of these new agencies with different governance models and whether analysts working in them could maintain their independence.

If a public or other entity developed and publish pure clear, timely, transparent, and comparable model-based ratings of debt dynamics for all contries, it could serve a benchmark for comparison with CRAs. Indeed, the International Monetary Fund (IMF) already publishes economic assessments and projections for every country through both its Article IV reports and its regular global economic research publications. They are not intended as credit assessments, but markets do react to IMF pronouncements, repricing instruments based on the information delivered, much as expected for a credit rating assessment.

Conclusion

Recent crises have shown that credit ratings can have a significant impact on financing for sustainable development and a country's recovery prospects. At the same time, fast-evolving changes in technology will likely change the nature of the CRA industry going forward. It is in the international community's interest to ensure that this develops in a way that strengthens the quality of ratings and encourages investment in sustainable development. The current economic situation brought about by COVID creates an opportunity to re-evaluate the system of credit ratings with a forward-looking approach that reflects a changing world.

While institutional reforms to CRAs would require political will and strong commitment from the international community, a number of proposals are ripe for voluntary action by market participants (see summary in Annex). However, these ideas may not spontaneously manifest. Long-term investors, such as pension funds and insurance companies, can encourage the development of long-term ratings. International organizations can also play a role if needed, such as in providing a benchmark to distinguish between model-based ratings and value-added judgement. Political leadership will also be needed to see changes through to conclusion.

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Appendix: Policy Options Table

Policy options (including both voluntary and institutional actions)	Benefits	Implementer	
		Market actors / International Organizations	**Governments / regulators / norm-setters**
Update ratings methodologies ➢ Incorporate scenarios for economic and non-economic risks ➢ Better use of technology to improve model accuracy	• Ratings will better reflect a rapidly changing global environment and growing systemic risks	• Voluntary actions by the CRAs • Investors could advocate for changes, e.g. insurance companies and pension funds advocate for long-term ratings	*Additional measures could include:* • *Norm-setting bodies, e.g. (IOSCO), could include policies as standards for CRAs* • *regulators incorporate measures into national regulations*
Enhance ratings transparency ➢ Publish model-based assessments, with a "qualitative overlay"	• Addresses concerns over biases • Highlights the quality and value-added of each CRA's qualitative evaluations		
Issue long-term sovereign ratings ➢ Develop ratings for long-term investment horizons, which incorporate sustainability into ratings	• Can reduce pro-cyclicality in ratings • Captures the positive effects of international support (such as DSSI) and long-term instruments (such as SCDI) • Encourages governments to invest in resilience and sustainability • Matches investment horizon of long-term investors	• Alternatively, international organizations, such as the International Monetary Fund (IMF), could publish model assessments as a benchmark to compare CRA ratings	
Increase dialogue between the CRAs and the public sector	• Improve understanding of international official programs, (e.g. DSSI) • Levels the playing field compared to bilateral discussions	Dialogues between CRAs and the public sector	Government and national regulators to engage in discussions with the CRAs
Moving from a cliff-edge to a graduated approach ➢ Create overlapping ratings tiers ➢ Portfolio approach to investment mandates ➢ Adjust regulatory regimes (e.g. risk weighted asset regulations, temporal graduation)	• Reduces the risk of sharp selloffs after a rating downgrade	• CRAs explicitly create overlaps of rating tiers • Investors adjust investment guidelines	• Norm-setting bodies adjust regulatory standards • Regulators introduce necessary changes to national regulatory frameworks
Creation of new institutions ➢ Publicly owned CRAs ➢ Non-profit institutions ➢ Cooperative institutions	• Encourages competition • Removes existing conflict of interest (but create new conflicts and would need to establish credibility with investors and governments)	• Cooperative institutions would be a financial sector-led process	• Public CRAs would be a government-led process

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