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Klusak, Patrycja; Uymaz, Yurtsev; Alsakka, Rasha

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Review

Politicians' connections and sovereign credit ratings

Patrycja Klusak [a,b,c], Yurtsev Uymaz [c,*], Rasha Alsakka [d]

[a] Edinburgh Business School, Herriot-Watt University, United Kingdom
[b] Bennett Institute for Public Policy, University of Cambridge, United Kingdom
[c] Norwich Business School, University of East Anglia, United Kingdom
[d] Bangor Business School, Bangor University, United Kingdom

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ABSTRACT

Using a unique hand-collected sample of professional connections between finance ministers and the top executives of the three largest credit rating agencies (CRAs) for 38 European sovereigns between January 2000 and November 2017, we show that professional connections result in higher sovereign ratings. This finding is attributed to 'favoritism', which stems from the conflict-of-interest problem in the CRA business model. We also find that the subjective component of ratings, captured by professional connections, has a more pronounced role for developing than developed countries. Our study offers new empirical evidence that unsolicited sovereign ratings are significantly lower than solicited ratings. Our results survive battery of robustness checks including propensity score matching (PSM), two-way fixed-effects, system GMM and various definitions of connection. Our findings offer wide-ranging implications for regulators, governments, market participants and CRAs.

1. Introduction

The aim of this paper is to investigate whether professional connections between a country's politicians (finance ministers) and credit rating agencies' (CRAs) directors and executives play a significant role in determining its sovereign credit ratings. Studying the effect of professional connections on sovereign ratings is of utmost importance as they help countries to gain access to capital, enable the flow of direct investment and affect the efficiency and stability of capital markets across borders (Slapnik and Loncarski, 2023; Agarwal et al., 2019; Fuchs and Gehring, 2017). The 2010–12 European sovereign debt crisis has emphasized the consequences of spillovers of sovereign credit actions across countries and asset classes. The design and delivery of political packages aimed at sustaining the current sovereign rating provides evidence of how ratings can influence government legislation and policy (Bloomberg, 2021; The Times, 2017). Public are also increasingly interested in sovereign credit rating news, particularly during election times, since sovereign ratings infer the quality of incumbent governments (Nguyen et al., 2023).[1]

Although CRAs aim to provide unbiased, objective and independent measures of the issuers' creditworthiness, their ratings are not immune from unconscious and implicit biases (see Slapnik and Loncarski, 2023). Sovereign ratings involve gathering not only hard (objective) data, but also soft (subjective) information (Fitch, 2019; S&P, 2018). The latter component is intuitive and often requires interpretations. For example, CRAs might discuss financial prospects and management policies with the issuers to derive at a rating decision. In this paper, we argue that professional connections contribute to the subjective (soft) component of sovereign ratings. We

* Corresponding author.
E-mail addresses: P.Klusak@hw.ac.uk (P. Klusak), y.uymaz@uea.ac.uk (Y. Uymaz), r.alsakka@bangor.ac.uk (R. Alsakka).

[1] For example, Sarkozy received a blow to his electoral campaign following loss of AAA status in 2012 (Bloomberg, 2012).

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focus on examining sovereign rating levels in line with previous studies on sovereign ratings' quality and bias (e.g., Fuchs and Gehring, 2017; De Moor et al., 2018; Cornaggia et al., 2020; Slapnik and Loncarski, 2023). The quality of ratings is vital for the efficient functioning of financial markets, and therefore it is crucial that market participants are aware of the issuers' true creditworthiness. Several regulations rely on credit ratings, such as the use of ratings in investment mandates and in calculating Basel III capital requirements. The rating levels of sovereign issuers are particularly important since corporate and bank ratings are heavily influenced by the sovereign rating of their country of domicile (Almeida et al., 2017). Given competition and reputational concerns in rating industry (Flynn and Ghent, 2018; Fuchs and Gehring, 2017), one could argue that CRAs would not endanger their position in the market and compromise the quality of their ratings. However, Baghai and Becker (2020) show that the motivation to retain market share might be higher than that of maintaining high rating quality, highlighting that rating inflation is an important consideration and should be identified.

Subjectivity on the part of CRAs can be seen in terms of "familiarity", "geographical" or "home" bias when CRA analysts issue inflated ratings to countries they are familiar with or perceive as presenting less risk. This may also apply where countries are geographically or culturally closer to the CRAs (De Moor et al., 2018). The CRAs' subjective judgement is further driven by the lobbying culture of governments pressing for higher ratings as well as the issuer pays model (Fuchs and Gehring; 2017).

Our study investigates the impact of professional connection of finance ministers with top management of the biggest CRAs' (Fitch, Moody's, and S&P) on sovereign ratings, using a sample of 38 European countries between January 2000 and November 2017. Professional connection is established if the country has at least one finance minister (FM) who has worked (or is still working) for the same third-party organization with at least one director/executive from the CRA.

Our proxy of subjective bias is measured at individual level offering a direct measure of subjective bias in sovereign ratings that has never been explored before. We focus on professional connections between CRAs' top executives and countries' finance ministers who take part in the rating committees. The data on connections is hand collected facilitating a unique measure of soft information that is not possible to achieve using country-level proxies employed in previous studies (Fuchs and Gehring, 2017; De Moor et al., 2018; Slapnik and Loncarski, 2021). Hence, our study offers an important contribution since CRAs inherently suffer from 'conflicts of interests', especially at individual level, which has been a key issue in 2010 EU CRA regulatory reforms.

We find that connected sovereigns are assigned higher ratings by 1.3, 0.5 and 0.5 notches (3.798, 1.626 and 1.598 CCR points) on average by Fitch, Moody's, and S&P respectively than unconnected sovereigns.[2] The influence is stronger for developing countries and for ongoing connections. We attribute our findings to favouritism on the part of the CRA. Additionally, in line with the literature on banks and corporations' ratings (e.g., Bannier et al., 2010), we offer new empirical evidence that unsolicited sovereign ratings (not paid for by the issuers) are lower than solicited ratings. Our results are robust across various model specifications, using OLS fixed effects and ordered probit modelling approaches. We also employ the system Generalized Method of Moments (GMM) (see Section 5.6) which provides us with coefficients free from specification biases such as omitted variable bias and reverse causality (Gibson et al., 2017). To further minimize any concerns about endogeneity, propensity score matching (PSM) is applied. Finally, using the two-way fixed-effects procedure (De Chaisemartin and d'Haultfoeuille, 2020) rules out any potential treatment effect's heterogeneity and the need for alternative estimators (see Section 3.2).

This paper offers novel contributions by interweaving three themes of the literature: professional connections, sovereign ratings, and ratings' solicitation. Our study complements the prior literature focusing on the informative value of soft information for sovereign ratings (e.g., Fuchs and Gehring, 2017, De Moor et al., 2018; Slapnik and Loncarski, 2021, 2023), and demonstrates that subjective component of sovereign ratings is more significant than previously thought. To best of our knowledge, this is the first study that looks at the effect of political connections on the quality of sovereign ratings. The data for our connection proxy is hand collected offering a unique measure of soft information that has not been explored before in sovereign ratings' setting. Similar to private issuers, sovereigns have a strong incentive to receive favourable ratings. We find that 'favoritism' is the underling mechanism for higher sovereign ratings assigned to connected sovereigns, contributing to the literature on bias in sovereign credit ratings.

We also shed light on differences in sovereign rating process across the three CRAs, highlighting that S&P (Fitch) tends to assign more weight to subjective factors in developing (developed) countries, compared to the other two CRAs. In addition, we provide new evidence suggesting that *Connection* is informative for CRAs' decisions of sovereign rating upgrades or downgrades for developing countries only, since such sovereign issuers require a stronger qualitative judgement by CRAs as they are more opaque than their developed counterparts. Finally, our paper is the first study to investigate the influence of solicitation status on sovereign ratings.

These results have strong policy implications as professional connections affect countries' ratings and governments' cost of debt. Our findings also add to the debate on the conflict of interest of newly regulated European CRA markets. Regulators need to consider the political power of CRAs as it can influence the quality of released ratings. Section 5.7 provides more details on the implications and significance of our study.

The rest of the paper is structured as follows. Section 2 reviews the relevant academic literature. Section 3 presents hypothesis and methodology, and Section 4 describes the data sample. Section 5 analyses the empirical results and Section 6 concludes the study.

2. Brief literature review

The psychology and management literature has shown that high levels of social ties have a positive influence on leadership

[2] The coefficient expressed in CCR points is divided by 3 to calculate the effect at notch level. See Section 3.2 for the definition of 58-CCR scale.

effectiveness in big firms and enhance person's recognition and reputation (Ballinger et al., 2016; Connelly et al., 2011). Individuals with more ties are more valued for their expertise and become someone to whom others turn for advice, which connects to the signaling theory (Connelly et al., 2011). Forming powerful social ties is in line with the conservation of resources theory (COR), whereby individual's networks can facilitate access to information, power or reputational advantages (Ballinger et al., 2016). Further, the finance literature has shown that firms' directors who are politically active receive favorable treatment by courts, governments, and regulators (Adelino and Dinc, 2014). Political connections also enhance bond issuance, equity values, and firm outcomes (e.g., Stanfield and Tumarkin, 2018).

The limited literature examining personal and business ties between corporate issuers and CRAs suggests that such relationships have a positive effect on issuers' ratings. Mählmann (2011) concludes that there is a positive link between inflated corporate credit ratings and the length of the business relationship between the CRA and the firms. Using a sample of US public debt issues from 327 companies rated by Moody's between 1994 and 2011, Khatami et al. (2016) suggest that personal connections between directors and executives of Moody's and the issuers might perform the role of information channel and result in a one-notch higher rating. Because CRAs pay a higher penalty when they inflate rather than deflate their ratings, they have stronger incentives to issue more conservative ratings to more opaque issuers (Bannier et al., 2010). Personal networks and professional connections between issuers and CRAs help obtaining more soft information about issuers, reducing the asymmetric information. This reduces strategic conservatism on the side of CRAs and in turn results in higher ratings for less opaque issuers. Kempf and Tsoutsoura's (2021) paper is the only study which looks at the political affiliation (rather than a connection) in the context of ratings. They find that CRA analysts not affiliated with the US president's party are more likely to downgrade corporates. Other studies focus on social ties between CRA analysts and corporate or municipal ratings (e.g., Cornaggia et al., 2020; Fracassi et al., 2016). Slapnik and Loncarski (2023, 2021) investigate the textual subjectivity and sentiment of credit rating reports and find that soft information proxies greatly improve the predictability of sovereign ratings when political risk variables are not included in the estimations.

Studying worldwide sovereign ratings, De Moor et al. (2018) suggest that aside from qualitative and quantitative determinants, sovereign ratings are driven by the subjective component represented by the country's lobbying effort or its connectedness to the US. Fuchs and Gehring (2017) show that subjectivity can be seen in the familiarity bias when the CRAs assign more favorable ratings to sovereigns which are geographically, culturally, politically, and economically closer to them or speak the same language as the analysts. These studies suggest that foreign bias is not always unconscious and instinctive, and subjective judgement can be influenced.

The literature has focused mainly on quantitative and qualitative determinants of sovereign ratings and only recently started to recognize the importance of its soft and subjective component. The latter is attributed to CRA's optimism and familiarity with the rated country. Our study contributes to the literature by arguing that information discovery takes place via a professional connection channel. To the best of our knowledge, this study is the first to capture the soft information component of sovereign ratings with respect to social ties and human relations. We argue that professional connections contribute towards the soft component of sovereign ratings.

3. Hypothesis and methodologies

3.1. Hypothesis development

The literature review (Section 2) provides a strong foundation for our hypothesis and suggests that the professional connections which proxy a subjective rating component can have a significant effect on sovereign rating levels. Further, since directors and executives of CRAs and finance ministers representing sovereigns play an important role in the rating process (Harrington, 2011; Khatami et al., 2016; S&P, 2013; Fitch, 2006), we assume that their connections have a significant effect on the assigned sovereign ratings (see Section 4 for details). Following Khatami et al. (2016), we focus our analysis on professional connection.[3] Our hypothesis is:

Hypothesis: CRAs assign higher sovereign ratings to the connected sovereigns than the non-connected sovereigns, other things being equal.

This effect of professional connections on sovereign ratings can be explained by two paradigms. Firstly, professional connections may act as an information channel. Previous literature shows that when CRAs are not able to acquire enough information about the issuer, they are more likely to assign more conservative ratings (Bannier et al., 2010), because the CRAs bear lower penalty for issuing deflated ratings rather than inflated ratings. Hence, a connected issuer might be considered less opaque and diminish the need for CRA's conservatism when issuing its rating. In other words, connection may act as a channel of information, which enables a CRA to better understand the financial, economic, and political situation of the issuer and assign more favorable ratings without compromising its reputation.

Secondly, through the connection with politicians, CRAs might show favoritism and assign more generous sovereign ratings. Previous literature shows how governments pressurize CRAs to receive higher ratings (Fuchs and Gehring, 2017). Mählmann (2011) also finds that the longer the firm is rated by the CRA, the higher its ratings are on average (adverse incentive argument). These studies show that conflict of interest due to the issuer-pay model results in higher ratings. Hence, we argue that professional connection might add to the existing problem of conflict of interest between CRAs and issuers, whereby the connection between CRAs and politicians

[3] We also examine *Educational* connections between finance ministers and CRAs. Educational connection measures whether Finance Minister and top executive from the CRA studied at the same Higher Education institution or not. The results are insignificant and not conclusive, which is in line with Khatami et al. (2016).

leads to higher sovereign ratings than would otherwise be the case. This strategy might help CRAs to maintain current business with the issuers or gain access to a new stream of income by issuing services to other asset classes and products in a given country. In contrast, sovereigns benefit from working with the CRA in securing the most satisfying rating, which safeguards the health of their economy.

One could argue that whether the government pays or not for the sovereign rating (i.e., solicitation status) might exacerbate a possible conflict of interest and make the professional connections hypothesis less credible. This is because the paying issuer participates in the rating process (solicited). Therefore, if the rating is paid for (solicited), access to soft information by the CRA should be easy and result in an information discovery regardless of whether there is a connection or not between the CRA and the government. By accounting for the solicitation status of sovereigns, we isolate the connection effect and ensure that it solely explains the phenomenon.

The literature on corporate and bank rating determinants finds that solicited issuers are assigned significantly higher ratings because solicitation acts as an information channel (Bannier et al., 2010). This is the first study to investigate the impact of solicitation status on sovereign ratings. It is not a common knowledge that not all sovereigns pay for their ratings. In our sample 10 %, 26 %, 38 % of sovereign ratings by Moody's, S&P and Fitch are unsolicited ratings respectively.[4] If we assume that the effect of connection is simply driven by the solicitation status, the results of the connection impact on sovereign ratings should disappear, since we have already controlled for access to soft information. However, if the impact of professional connection on sovereign ratings remains significant with the predicted sign, we can be certain that that the professional connections hypothesis holds.

3.2. Methodology

To test our research hypothesis, we estimate Eq. (1) using two estimation methods (similar to Afonso et al. (2022) and Fuchs and Gehring (2017)): (i) OLS fixed effects model (e.g., Baghai and Becker, 2020; Cornaggia et al., 2020), and (ii) Ordered probit modelling approach that controls for the discrete nature of our dependent variable (e.g., Flynn and Ghent, 2018; De Moor et al., 2018). Separate sets of regressions are estimated for each CRA to control for varying methodologies (Flynn and Ghent, 2018). This approach also controls for CEO characteristics by comparing top executives against themselves rather than other top executives (Cornaggia et al., 2020).

$$Ratings_{i,t} = \beta_1 Connection_{i,t} + \beta_2 Unsolicited_{i,t} + \beta_3 BusinessTies_{i,t} + \beta_4 X_{i,t} + \gamma TF \times CF + \varepsilon_{i,t} \quad (1)$$

$Rating_{i,t}$ is the level of sovereign ratings of country i at month t, based on both 58-point comprehensive credit rating (CCR) scale (*SovR58*) and the 20-notch (*SovR20*). We define rating levels using 58-point CCR which includes ratings, watch and outlook status (Correa et al., 2014; Nguyen et al., 2023), as follows: AAA/Aaa = 58, AA+/Aa1 = 55 …, CCC-/Caa2 = 4, C/SD/CC/D = 1. For positive watch (outlook), we add + 2 (+1) whereas for negative watch (outlook), we subtract 2 (1). The 20-notch rating scale (*SovR20*) is defined as: AAA/Aaa = 20, AA+/Aa1 = 19 … C/SD/CC/D = 1. See Section 4.1 for more details on sovereign ratings' data.

Connection is the variable of interest, which is a dummy variable taking the value of 1 at month *t*, if the country has at least one finance minister (FM) professionally connected with at least one director/executive from the CRA between Jan 2000 – Nov 2017; 0 otherwise. The connection is established when the two individuals have worked (or are still working) for the same third-party organization. Herein we refer to this type of connection as a 'professional connection' (Khatami et al., 2016). Then, we distinguish between *Current Connection* and *Past Connection*. The nature of the *Current Connection* is that it is still ongoing. For example, FM and CRA executive work at the same third-party organization (e.g., World Economic Forum (WEF)) from 2014 onward until the end of our sample period (2017), while their respective terms are 2011–2017 for the FM and 2013–2017 for the CRA executive. The *Current Connection* took effect from 2013 until 2017 (i.e., the dummy variable is one for this period, and 0 otherwise). The *Past Connection* focuses on connection that has been established and terminated before the tenure of the politician and appointment of the CRA executive. For example, both individuals worked at Bank of England (BOE) in 2001 but between 2012 and 2017 they were in their respective roles. The *Past Connection* was established in 2001 through BOE (i.e., the dummy variable equals to 1 during the period of their overlapping terms, and 0 otherwise).

To prevent endogenous relationships these connections are always initiated before the respective parties are in the office and they are either still ongoing (*Current Connection*) or have terminated before their terms started (*Past Connection*) following Khatami et al. (2016). Our identification strategy of *Connection* has several advantages (as highlighted by Jagolinzer et al. (2020)). Firstly, work experience as opposed to other measures (clubs, memberships, charities) allows us to detect the direct connections. Secondly, our measure focuses broadly on whether the country has any individual that has a political tie with a CRA (through any number of individuals on either side) rather than more narrowly on the individual with the tie. Finally, because we can distinguish between

[4] We rule out the selection-bias which could explain the correlation between ratings and payment to CRAs as there are many developed countries which pay for ratings (e.g., Austria, Finland, Iceland, Sweden), and many developing countries which do not (e.g., China, India, Kenya, Mozambique, Thailand).

connections which were formed long before the information is transferred across parties, the underlying tie is not directly related to the type of information likely being transmitted years later (sovereign creditworthiness-related information in our study). Similar to Faccio's (2006) argument, our focus on the close relationships between top executives of CRAs and the sovereign leaders offer advantages over other proxies, such as donations or contributions to political campaigns, since our type of connection is more durable than one-off campaign or monetary contributions.[5]

Unsolicited is a dummy variable taking the value of 1 if the country has an unsolicited sovereign rating; 0 otherwise. In line with bank and corporate ratings' solicitation literature (e.g., Bannier et al., 2010), solicited ratings tend to be higher than unsolicited ratings. Therefore, we expect a negative sign for *Unsolicited* coefficient. Solicitation status is an important determinant of sovereign ratings that helps to strengthen our professional connections hypothesis. If the sovereign pays for the sovereign rating, access to information by CRA should be relatively easy (because of ongoing communications with the government) and connection is not necessarily needed to reveal new information (thus affect ratings). However, if the effect of connection remains significant after controlling for the solicitation status, amongst other rating determinants (macro-economic environment and time and country fixed effects), the coefficient of *Connection* picks up the impact of professional connections.

Business Ties is a proxy of business ties between sovereigns and CRAs. It is the number of years elapsed since the country was first rated by the CRA and the current year. The variable controls for the 'business ties' effect documented in the corporate rating studies (e.g., Mählmann, 2011; Fracassi et al., 2016; Khatami et al., 2016; Agarwal et al., 2019). Similar to Dasgupta et al.'s (2021) argument that the presence and strength of connections are closely linked to the duration of business relationship, *Business Ties* ensures that the influence of connection remains significant after controlling for business ties. We expect the variable's coefficient to be positive, indicating the longer the sovereign has had a contract with the CRA the higher its ratings will be.

Prior literature finds that corporates might be seeking strong ties with politicians to exert preferential treatment by governments, such as advantages in obtaining government contracts (Faccio, 2006; Titl and Geys, 2019) and shaping legislative process (Unsal et al., 2016). Ties between corporate and governments play a signalling role which helps build confidence in investors (Gounopoulos et al., 2021) and grants corporate access to resources and information which are particularly important in weak institutional environments, such as in developing countries (Carney et al., 2020). Just like any corporates, CRAs may take advantage of their long rating relationship with the governments to benefit from valuable information, strengthen the confidence of the market participants and rating users in their ratings, and/or gain commercial business. The business ties are particularly crucial in the case of sovereign ratings since they enable CRAs to access commercial business. By assigning sovereign ratings and retaining a long relationship with sovereign issuers, CRAs build much larger proceeds from downstream rating business. For example, once the CRA has assigned a rating to a sovereign issuer, the CRA would be solicited to assign ratings to state-owned companies, supranational whose creditworthiness depend partly on the financial promises made by the sovereign (such as callable capital), and other types of ratings in the rated sovereign jurisdiction. CRAs typically do not issue corporate or bank ratings in a country if the corresponding sovereign is not rated (Klusak et al., 2022). Governments might also take advantage of their longer rating relationship with CRAs to benefit from favourable treatment in the form of higher ratings. Protecting, or even targeting better, sovereign ratings is of utmost importance for governments given their important role (as discussed in Section 1).[6]

$X_{i,t}$ is a set of sovereign rating determinants, including real *GDP growth, CPI index, Current Account Balance, Imports* and *Investment to GDP* (De Moor et al., 2018; Fuchs and Gehring, 2017).[7] The definitions of these controls are outlined in Table 1, whereas Table 2 illustrates their summary statistics.[8]

To correct for variation across time and countries, we estimate Eq. (1) using interactive fixed effects. *TF* is a set of time fixed effect dummies, and *CF* is a set of country fixed effect dummies. We estimate Eq. (1) using interacted $TF \times CF$ as well as *TF* and *CF* separately. Time fixed effects control for cross-country correlations in the error term. In addition to control for time-varying country level variables (using macroeconomic variables), we control for any source of unobserved country-level heterogeneity that affects sovereign ratings, such as countries' risks and quality and investment prospects. Country fixed effects help in minimizing the omitted variable concerns by isolating the impact of fluctuations in creditworthiness over and above the country-level shocks.

[5] We estimate Eq. (1) with two alternative dummy variables (in separate sets of regressions). First variable equals to 1 if the CRA of interest (S&P in Table 3, Moody's in Table 4, or Fitch in Table 5) has no connection at time t while one or the other two CRAs (Moody's and/or Fitch in Table 3, S&P and/or Fitch in Table 4, Moody's and/or S&P in Table 5) have connections with FMs, 0 otherwise. The second variable equals to 1 if the CRA has connection with FMs at time t while one or the other two CRAs have no connections, 0 otherwise. These two dummies are included to control for the status of connections between FMs and the other two CRA when there is or there is no connection between the CRA of interest and FMs. The results (available on request) are consistent.

[6] Table 2, Panel B, shows that there are similar *Business Ties* across the three CRAs and governments in developing countries (on average 18 years for S&P and 19 years for Moody's and Fitch), which are slightly weaker than the average business ties between Fitch and governments of developed countries (22 years). The average *Business Ties* (30 years) are more pronounced, but not extreme, between S&P/Moody's and governments of developed countries. The standard deviation of *Business Ties* is 8.4, 9.0 and 2.8 in S&P, Moody's and Fitch samples respectively (Table 2-Panel A), which suggest that there are sufficient but not extreme variations in the length of relationship between CRAs and countries in our sample.

[7] To control for the political sphere of sovereigns, following Nguyen et al. (2023), we add to Eq. (1) the following variables: an index depicting *Corruption, Government Effectiveness* and *Political Stability, Regulation Quality, Voice* and *Accountability, Investment* and *Financial Freedom,* and *Rule of Law*. The results (available on request) show that including these variables does not enhance a model's explanatory power, yet it confirms direction and significance of key variables. These variables are sourced from the IMF, WEO and the World Bank.

[8] Outliers are identified using the MM-robust regression method and excluded prior estimation.

Table 1
Variables' Definitions.

Variable	Units	Definition	Source
Dependent variables			
SovR58	1–58	Sovereign credit ratings based on 58-CCR scale, taking values 1–58.	CRAs credit reports
SovR20	1–20	Sovereign credit ratings based on 20-notch scale, taking values 1–20.	CRAs credit reports
Independent variables			
Connection	0/1	Connection dummy equals 1 if there is a connection between at least one politician (finance minister) of a country and one of the directors/executives of a given CRA, 0 otherwise.	BoardEx
Past Connection	0/1	Connection that was established before the term of the politician and a tenure of the CRA director/executive equals 1, 0 otherwise.	BoardEx
Current Connection	0/1	Connection that was established during the term of the politician and a tenure of the CRA director/executive and it still ongoing equals 1, 0 otherwise.	BoardEx
Business ties		Continuous variable measuring the number of years elapsed since the sovereign was first rated by the CRA and the current year.	CRAs annual reports
Unsolicited	0/1	Dummy variable taking value of 1 if the country has unsolicited sovereign rating, 0 otherwise.	CRAs annual reports
Sovereign characteristics			
Current Account	%	Current account balance U.S. dollars Billions; 3 year moving average (percent change) yearly frequency.	WDI
Inflation	%	Inflation, 3 year moving average consumer prices (percent change) yearly frequency.	WDI
GDP	%	Real GDP growth (percent change) yearly frequency.	WDI
Investment	%	Total investment percent of GDP yearly frequency.	WDI
Imports	%	Volume of imports of goods and services (percent change) yearly frequency.	WDI

This table presents abbreviations and definitions of variables used in the univariate and multivariate analysis. The data sample includes monthly observations for 38 countries during Jan 2000–Nov 2017. For the list of countries, see Table A in the Online Appendix. WDI is the World Bank's World Development Indicator database.

The errors terms are clustered at country level to capture any potential autocorrelations in the errors.[9]

Due to the nature of our *Connection* variable which is non-static, and changes over time and cross sectionally, two-way fixed-effects (TWFE) approach is applied to rule out the potential presence of heterogenous treatment effects across groups or time (De Chaisemartin and d'Haultfoeuille, 2020). We find that the maximum value of the naïve average treatments (i.e., *Connection*) on the treated (*Connected*) group which are assigned negative weights is well under 20 %, indicating no need to apply use alternative estimator.[10]

Eq. (1) is estimated using data from each CRA, yet this approach has its limitations. We are not able to exploit the differences in professional connections across different CRAs assigning ratings to the same issuer at the same point in time. We rely on cross-country differences in political connections, which raises concerns that professional connections between CRAs and politicians could be a proxy for some other time-varying country characteristic that is not perfectly controlled for by the current set of control variables. Therefore, we pool the data from the three CRAs, and estimate Eq. (2):

$$Rating_{i,j,t} = \beta_1 Connection_{i,j,t} + \beta_2 Unsolicited_{ij,t} + \beta_3 Business\ Ties_{i,j,t} + \gamma \mathrm{TF} \times CF + \lambda CRA + \varepsilon_{i,j,t} \tag{2}$$

$Rating_{i,j,t}$ is the level of sovereign rating of country i by CRA *j* at month *t*. We use CRA fixed effects (*CRA*) to ensure that our results are not driven by the differences in average ratings by the three CRAs. This identification strategy allows us to observe ratings assigned by the biggest three CRAs to the same issuer at the same time, similar to Fracassi et al. (2016). Other variables are defined as in Eq. (1).

Our identification has advantages relative to Khatami et al. (2016) who include firm dummies to absorb the between-firm variation, but they need to specify time-varying controls. In our paper, by including country-time fixed effects, we absorb the time series variation within countries, which leaves us with the variation across CRA that accounts for the same country at the same time (Fracassi et al., 2016).

[9] We estimate Eq. (1) using double-clustered country-time standard errors and the results (available on request) are consistent.

[10] See Table XVI in the Online Appendix. The highest negative weights for Moody's, Fitch and S&P are 16.27 %, 15.31 % and 14.53 respectively. Additionally, for both developed and developing countries, the negative weights remain well under 20 % threshold.

Table 2
Summary Statistics and Sovereign Credit Rating Actions by CRAs.

Panel A – Summary Statistics – Full sample

	S&P		Moody's		Fitch	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
SovR58	41.67	14.28	42.02	14.74	42.67	13.68
SovR20	14.57	4.76	14.68	4.915	14.90	4.568
Connection	0.46	0.50	0.447	0.497	0.451	0.498
Past Connection	0.452	0.498	0.440	0.496	0.420	0.494
Current Connection	0.281	0.450	0.237	0.426	0.277	0.448
Business ties	26.62	8.43	27.55	9.022	21.59	2.772
Unsolicited	0.09	0.29	0.203	0.402	0.204	0.403
Account Balance	−0.730	7.058	−0.730	7.058	−0.730	7.058
Inflation	3.759	4.974	3.759	4.974	3.759	4.974
GDP	0.512	1.226	0.512	1.226	0.512	1.226
Investment	23.244	5.001	23.244	5.001	23.244	5.001
Imports	5.511	9.588	5.511	9.588	5.511	9.588

Panel B– Summary Statistics – Sub-samples

	S&P					Moody's					Fitch				
	Mean	Median	Mean	Median	Z-score	Mean	Median	Mean	Median	Z-score	Mean	Median	Mean	Median	Z-score
	Developed		Developing			Developed		Developing			Developed		Developing		
SovR58	47.675	51	24.876	27	−62.56***	48.12	52	24.93	27	−61.60***	47.974	51	26.182	28	−60.04***
SovR20	16.576	18	8.968	10	−62.67***	16.72	18	8.963	10	−62.12***	16.671	18	9.39	10	−60.22***
Business ties	29.8	29.24	17.69	20.15	−58.62***	30.77	30.11	18.53	21.18	−58.62***	22.33	23.48	19.31	21.09	−41.39***
	Connected		**Unconnected**		**Z-score**	**Connected**		**Unconnected**		**Z-score**	**Connected**		**Unconnected**		**Z-score**
SovR58	46.67	52	37.49	38	−29.38***	46.6	52	38.31	40	−25.44***	47.66	54	38.57	38	−30.66***
SovR20	16.26	18	13.16	13	−29.90***	16.24	18	13.42	14	−26.74***	16.58	19	13.52	13	−30.96***
	Unsolicited		**Solicited**		**Z-Score**	**Unsolicited**		**Solicited**		**Z-Score**	**Unsolicited**		**Solicited**		**Z-Score**
SovR58	48.13	54	48.78	56	2.777***	41.39	43	42.18	45	2.397*	42.01	40	46.54	58	7.692***
SovR20	16.80	19	16.94	19	1.093	14.50	15	14.73	15	1.896*	14.66	14	16.17	20	6.955***
	Crisis		**Non-crisis**		**Z-Score**	**Crisis**		**Non-crisis**		**Z-Score**	**Crisis**		**Non-crisis**		**Z-Score**
SovR58	40.5	40	42.01	43	4.567***	40.62	42	42.42	45	5.487***	41.84	42	42.91	44	3.339***
SovR20	14.26	14	14.66	15	3.260***	14.31	15	14.79	16	3.642***	14.67	14	14.97	15	2.548**

Panel C – Sovereign Rating Actions by CRAs

	S&P		MOODY'S		FITCH	
	Number of actions	%	Number of actions	%	Number of actions	%
Upgrade by 1 CCR point	115	26.08	88	27.33	92	25.34
Upgrade by 2 CCR point	51	11.56	32	9.94	40	11.02
Upgrade by > 2 CCR point	71	16.10	49	15.22	71	19.56
Downgrade by 1 CCR point	87	19.73	59	18.32	74	20.39

(*continued on next page*)

Table 2 (*continued*)

Panel C – Sovereign Rating Actions by CRAs						
	S&P		MOODY'S		FITCH	
	Number of actions	%	Number of actions	%	Number of actions	%
Downgrade by 2 CCR point	43	9.75	38	11.80	23	6.34
Downgrade by > 2 CCR point	74	16.78	56	17.39	63	17.36
Total number of events	441	100.00	322	100.00	363	100.00

Panel A presents summary statistics of variables used in the univariate and multivariate analysis. The data sample includes monthly observations for 38 countries during Jan 2000-Nov 2017. The number of observations is 8170 (S&P and Moody's) and 7955 (Fitch). The number of observations for country-level characteristics is 8170. For variables' definitions, see Table 1. "S.D." is the standard deviation. The sample represents balanced panel data with regard to the dependent variable and all explanatory variables. Panel B presents the summary statistics for various sub-samples, whereby z-score indicates significance for the differential of the variable mean values between the two sub-samples (i.e., Developing – Developed; Unconnected – Connected; Solicited – Unsolicited; Non-crisis – Crisis). Panel C presents summary statistics for the credit rating dataset, which includes monthly sovereign rating observations, including outlook and watch for 38 countries during Jan 2000-Nov 2017. The rating signals are defined based on a 58-point CCR scale. The average numerical ratings are 33.71, 34.59, and 33.53 for S&P, Moody's, and Fitch, respectively.

4. Data

4.1. Rating data

The sample comprises monthly long-term foreign-currency sovereign ratings for 38 European countries, defined based on the World Bank classification, by S&P, Moody's, and Fitch, between January 2000 and November 2017.[11] Lower frequency data allows us to incorporate macroeconomics data into determinants of sovereign risk (Binici and Hutchinson, 2018). The sovereign ratings and rating solicitation status are collected from the CRAs' publications, ESMA' European Rating Platform, S&P Capital IQ and the Eikon Thomson Reuters database.[12]

Table 2 (Panel B) reports the summary statistics for various sub-samples. Developed countries have an average (median) rating of AA−/Aa3 (AA/Aa2) across the three CRAs, which is about eight notches higher than developing countries. The average (median) of sovereign ratings of developing countries is BB/Ba2 (BB+/Ba1), which is at the top of the speculative-grade level, reflecting more advanced characteristics of developing countries in Europe. Developing countries are assigned, on average, slightly higher sovereign ratings (by about 0.4 notch/1.3 CCR-point) by Fitch than by S&P and Moody's. This might be driven by Fitch's incentive to attract more rating business, given that Fitch has the smallest market share across the three CRAs. Consistent with our expectations, connected countries are assigned significantly higher sovereign ratings than non-connected countries by 3.2 notches (9.2 CCR-points) by S&P, 2.8 notches (8.3 CCR-point) by Moody's, and 3.1 (9.1 CCR-points) by Fitch. On average (non) connected countries have a sovereign rating of (BBB+/Baa1) A+/A1, with Fitch assigning slightly more generous sovereign ratings for connected countries by about 0.3 notch (1.1 CCR point) than the other two CRAs. In line with previous literature on non-sovereign ratings, S&P and Fitch tend to assign higher sovereign ratings for solicited than unsolicited countries. Unsurprisingly, the average (median) of sovereign ratings is slightly, but significantly, lower during the sovereign debt crisis due to the spike in the number of negative signals and rating downgrades of many European countries during the crisis time.

Table 2, Panel C shows that there are 1126 actions by the three CRAs for 38 sovereigns. There are 237 upgrades and 204 downgrades by S&P, 169 upgrades and 153 downgrades by Moody's, 203 upgrades and 160 downgrades by Fitch. Overall, rating actions of one-CCR point (i.e., outlook signal) constitute the largest proportion amongst all actions (exceeding 25 % and 18 % for positive and negative events respectively). Moody's releases the highest proportion of downgrades against upgrades (47 % vs 53 %) to the total of rating actions amongst the CRAs in the given period. Fitch has the highest proportion of upgrades (56 %) to the total rating events amongst the three CRAs.

4.2. Professional connections

To measure the impact of the professional connections between the politicians and the CRA's boards on sovereign rating levels, we build on an established body of network literature (e.g., Jagolinzer et al., 2020; Cohen et al., 2010). The construction of the *Connection* variable follows such that political connection is formed when the country has at least one finance minister (FM) professionally connected with at least one director/executive from the CRA in our sample period. The connection is established when the two individuals have worked (or are still working) for the same third-party organization (see Section 3.2 about the advantages of our identification strategy based on work experience). Work experience is determined by analyzing each director's and politicians' biographical data as provided by the BoardEx database.[13] Our setting is different than any of the existing papers and looks at the individual level patterns of politicians in each country as well as CRAs' boards, and hence we have built a unique database using several sources.

Information about the rating committee process, board composition, and its members are collected from CRAs' Codes of Conduct, Transparency Reports, and Methodology documents. For instance, in their Code of Conduct, Moody's explains that their principal rating committee members include "managing directors (MDs), credit officers and other analysts" (Moody's (2006, p. 5)). Managing directors are responsible for chairing rating committees, managing rating assignments and overseeing and monitoring outstanding ratings. Furthermore, in one of his statements the former president of Moody's, William Harrington, stressed that senior management takes an active part in company's rating decisions: "[…] From the Managing Directors upward to the CEO of Moody's Corporation Ray McDaniel and for every intervening management level, Moody's management undercut analyst attempts to produce informed Moody's opinions." (Harrington (2011, p.11)). Fitch (2016, p.12) Transparency Report informs that: "Quorum requirements for rating committees require that at least one analyst with a title of Senior Director or above to be present". S&P's Analytics Board comprises experienced credit rating personnels with diverse fields of expertise from various regions, who oversee development, approve and represent the Ratings Services chaired by the Chief Credit Officer of Ratings Services (S&P, 2014). These individuals include analytical

[11] For the list of countries, see Table I in the Online Appendix. The market share of the biggest three CRAs (Moody's, S&P and Fitch) has been univocally high (over 90 %) (European Securities and Markets Authority – ESMA (2021)). Our focus on the biggest CRAs represents the most dominant and important players which are well established with a long history of sovereign ratings.

[12] We collected regulatory disclosures reports on solicitation statuses published by the CRA. The solicitation status disclosure is required by European CRA regulation and has been implemented since February 2011 (Article 10 (5) of the EU Regulation 1060/2009). We have also contacted ESMA which regulates CRAs in Europe, and some central bank officials or the finance ministry.

[13] Boardex data source has been used in previous studies (such as Jagolinzer et al., 2020; Dasgupta et al., 2021; Cohen et al., 2010) in constructing the connection proxy.

Table 3
S&P Sample – *SovR58*.

	Panel A- OLS Fixed Effects Model						Panel B- Ordered Probit Model					
	1	2	3	4	5	6	7	8	9	10	11	12
Connection	0.507***	1.598***					0.112***	0.212***				
	(0.067)	(0.068)					(0.010)	(0.011)				
Current Connection			1.301***	1.445***					0.142***	0.123***		
			(0.049)	(0.064)					(0.00813)	(0.008)		
Past Connection					0.639***	0.480***					0.137***	0.124***
					(0.071)	(0.061)					(0.010)	(0.011)
Unsolicited	−1.279***	−1.340***	−2.078***	−1.673***	−1.300***	−0.613**	−0.469***	−0.341***	−0.272***	−0.429***	−0.450***	−0.406***
	(0.055)	(0.052)	(0.063)	(0.055)	(0.056)	(0.048)	(0.012)	(0.010)	(0.012)	(0.010)	(0.013)	(0.011)
Business ties	1.115***	1.041***	1.097***	1.047***	1.114***	1.096***	0.157***	0.152***	0.138***	0.151***	0.157***	0.185***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Account balance		0.480***		0.507***		0.384***		0.089***		0.077***		0.069***
		(0.006)		(0.004)		(0.005)		(0.001)		(0.001)		(0.001)
Inflation		−0.491***		−0.493***		−0.390***		−0.073***		−0.117***		−0.057***
		(0.004)		(0.004)		(0.004)		(0.001)		(0.001)		(0.001)
Imports		−0.113***		−0.114***		−0.115***		−0.020***		−0.018***		−0.021***
		(0.007)		(0.006)		(0.007)		(0.001)		(0.001)		(0.001)
GDP growth		0.753***		0.754***		0.604***		0.133***		0.143***		0.123***
		(0.023)		(0.026)		(0.022)		(0.004)		(0.004)		(0.005)
Investment		0.899***		0.896***		0.971***		0.137***		0.123***		0.159***
		(0.003)		(0.003)		(0.003)		(0.001)		(0.001)		(0.001)
Observations	8132	8132	8132	8132	8132	8132	8134	8134	8134	8134	8134	8134
TF	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
CF	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
TF × CF	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

This table reports the estimated coefficients and country-clustered standard errors in parentheses of Eq. (1) using OLS fixed effects modelling approach in Panel A and Ordered probit model in Panel B for S&P. The credit rating dataset consists of monthly sovereign ratings based on 58-CCR rating scale for 38 countries during Jan 2000-Nov 2017. The dependent variable is *SovR58*. *Connection dummy* takes three forms: *Connection*, *Current* and *Past*; and equals 1 if there is a connection between at least one finance minister of a country and one of the directors/executives of a given CRA, 0 otherwise. *TF is* time fixed effect and *CF* is country fixed effect. The variables' definitions and summary statistics are presented in Tables 1 and 2. Significance levels are: *** $p < 1$ %, ** $p < 5$ %, * $p < 10$ %.

Table 4
Moody's Sample – *SovR58*.

	Panel A- OLS Fixed Effects Model						Panel B- Ordered Probit Model					
	1	2	3	4	5	6	7	8	9	10	11	12
Overall Connection	0.666***	1.626***					0.0103	0.156***				
	(0.053)	(0.047)					(0.011)	(0.011)				
Current Connection			1.132***	1.798***					0.045***	0.129***		
			(0.069)	(0.061)					(0.001)	(0.001)		
Past Connection					0.993***	1.212***					0.029**	0.025**
					(0.062)	(0.046)					(0.0121)	(0.0110)
Unsolicited	−2.237***	−1.746***	−2.590***	−2.759***	−1.750***	−1.968***	−0.181***	−0.294***	−0.271***	−0.365***	−0.173***	−0.285***
	(0.081)	(0.063)	(0.093)	(0.064)	(0.074)	(0.067)	(0.008)	(0.009)	(0.011)	(0.008)	(0.0081)	(0.001)
Business ties	1.092***	1.099***	1.095***	1.068***	1.087***	1.107***	0.169***	0.187***	0.153***	0.172***	0.170***	0.208***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Account balance		0.289***		0.366***		0.231***		0.049***		0.055***		0.039***
		(0.007)		(0.005)		(0.006)		(0.001)		(0.001)		(0.001)
Inflation		−0.268***		−0.381***		−0.272***		−0.039***		−0.047***		−0.031***
		(0.008)		(0.005)		(0.009)		(0.002)		(0.001)		(0.001)
Imports		−0.164***		−0.152***		−0.161***		−0.025***		−0.021***		−0.023***
		(0.005)		(0.005)		(0.005)		(0.001)		(0.001)		(0.001)
GDP growth		0.456***		0.576***		0.451***		0.069***		0.076***		0.075***
		(0.031)		(0.033)		(0.030)		(0.008)		(0.007)		(0.008)
Investment		1.166***		1.030***		1.077***		0.169***		0.142***		0.153***
		(0.007)		(0.005)		(0.005)		(0.001)		(0.001)		(0.001)
Observations	8132	8132	8132	8132	8132	8132	8132	8132	8132	8132	8132	8132
TF	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
CF	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
TF × CF	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

This table reports the estimated coefficients and country-clustered standard errors in parentheses of Eq. (1) using OLS fixed effects modelling approach in Panel A and Ordered probit model in Panel B for Moody's. The credit rating dataset consists of monthly sovereign ratings based on 58-CCR rating scale for 38 countries during Jan 2000-Nov 2017. The dependent variable is *SovR58*. *Connection dummy* takes three forms: *Connection*, *Current* and *Past*; and equals 1 if there is a connection between at least one finance minister of a country and one of the directors/executives of a given CRA, 0 otherwise. *TF is* time fixed effect and *CF* is country fixed effect. The variables' definitions and summary statistics are presented in Tables 1 and 2. Significance levels are: *** $p < 1$ %, ** $p < 5$ %, * $p < 10$ %.

Table 5
Fitch Sample – *SovR58*.

	Panel A- OLS Fixed Effects Model						Panel B- Ordered Probit Model					
	1	2	3	4	5	6	7	8	9	10	11	12
Connection	2.948***	3.798***					0.425***	0.564***				
	(0.103)	(0.059)					(0.012)	(0.006)				
Current Connection			0.820***	1.307***					0.192***	0.273***		
			(0.132)	(0.089)					(0.017)	(0.013)		
Past Connection					2.628***	3.747***					0.388***	0.540***
					(0.091)	(0.058)					(0.010)	(0.007)
Unsolicited	−2.593***	−1.843***	−2.417***	−1.874***	−2.441***	−1.930***	−0.371***	−0.307***	−0.342***	−0.320***	−0.212***	−0.327***
	(0.034)	(0.027)	(0.039)	(0.030)	(0.030)	(0.036)	(0.005)	(0.007)	(0.006)	(0.006)	(0.005)	(0.007)
Business ties	2.436***	2.460***	2.502***	2.372***	2.436***	2.325***	0.290***	0.315***	0.293***	0.294***	0.270***	0.295***
	(0.007)	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Account balance		0.257***		0.216***		0.194***		0.042***		0.035**		0.032***
		(0.007)		(0.009)		(0.008)		(0.001)		(0.001)		(0.001)
Inflation		−0.372***		−0.455***		−0.418***		−0.056***		−0.063***		−0.060***
		(0.004)		(0.006)		(0.003)		(0.000802)		(0.001)		(0.001)
Imports		−0.169***		−0.167***		−0.168***		−0.024***		−0.023***		−0.023***
		(0.007)		(0.006)		(0.007)		(0.001)		(0.001)		(0.001)
GDP growth		0.989***		0.923***		0.969***		0.144***		0.134***		0.133***
		(0.026)		(0.022)		(0.027)		(0.004)		(0.004)		(0.005)
Investment		0.753***		0.671***		0.714***		0.108***		0.095***		0.103***
		(0.006)		(0.006)		(0.006)		(0.001)		(0.001)		(0.001)
Observations	6426	6426	6426	6426	6426	6426	6426	6426	6426	6426	6426	6426
TF	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
CF	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
TF × CF	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

This table reports the estimated coefficients and country-clustered robust standard errors in parentheses of Eq. (1) using OLS fixed effects modelling approach in Panel A and Ordered probit model in Panel B for Fitch. The credit rating dataset consists of monthly sovereign ratings based on 58-CCR rating scale for 37 countries during Jan 2000-Nov 2017. The dependent variable is *SovR58*. *Connection dummy* takes three forms: *Connection*, *Current* and *Past*; and equals 1 if there is a connection between at least one finance minister of a country and one of the directors/executives of a given CRA, 0 otherwise. *TF is* time fixed effect and *CF* is country fixed effect. The variables' definitions and summary statistics are presented in Tables 1 and 2. Significance levels are: *** $p < 1$ %, ** $p < 5$ %, * $p < 10$ %.

Table 6
S&P, Moody's, Fitch – Developed Countries – OLS Fixed Effects.

	S&P			Moody's			Fitch		
	1	2	3	4	5	6	7	8	9
Connection	0.934***			0.933***			1.595***		
	(0.087)			(0.073)			(0.054)		
Current Connection		0.442**			0.586***			0.556**	
		(0.066)			(0.097)			(0.098)	
Past Connection			1.127***			1.057***			2.143***
			(0.089)			(0.077)			(0.079)
Unsolicited	−0.575*	−1.503***	−0.534*	−1.759***	−1.939***	−1.878***	−2.691***	−4.757***	−1.088***
	(0.048)	(0.056)	(0.053)	(0.063)	(0.089)	(0.080)	(0.076)	(0.046)	(0.069)
Business ties	0.731***	0.733***	0.736***	0.899***	0.738***	0.727***	1.703***	2.110***	1.710***
	(0.003)	(0.003)	(0.003)	(0.004)	(0.002)	(0.003)	(0.019)	(0.014)	(0.021)
Account balance	0.846***	0.828***	0.849***	0.253***	0.036	0.011	0.487***	0.440***	0.687***
	(0.010)	(0.010)	(0.008)	(0.015)	(0.013)	(0.012)	(0.016)	(0.015)	(0.015)
Inflation	−0.038	−0.128*	−0.029	−0.133*	−0.171**	−0.189**	−0.364***	−0.206**	−0.018
	(0.029)	(0.025)	(0.028)	(0.028)	(0.036)	(0.042)	(0.038)	(0.039)	(0.036)
Imports	−0.174***	−0.165***	−0.174***	−0.209***	−0.180***	−0.184***	−0.209***	−0.159***	−0.231***
	(0.006)	(0.007)	(0.007)	(0.006)	(0.005)	(0.005)	(0.006)	(0.007)	(0.007)
GDP growth	1.127***	1.016***	1.120***	0.864***	0.996***	1.016***	0.785***	0.403***	1.032***
	(0.027)	(0.024)	(0.025)	(0.038)	(0.038)	(0.038)	(0.036)	(0.037)	(0.038)
Investment	1.206***	1.237***	1.216***	1.344***	1.092***	1.098***	1.360***	1.425***	1.229***
	(0.008)	(0.009)	(0.006)	(0.015)	(0.019)	(0.019)	(0.015)	(0.008)	(0.014)
Observations	6020	6020	6020	6020	6020	6020	4730	4730	4730
R-squared	0.613	0.627	0.614	0.629	0.655	0.655	0.664	0.649	0.585
TF × CF	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table reports the estimated coefficients and country-clustered robust standard errors in parentheses of Eq. (1) using OLS modelling approach. The credit rating dataset consists of monthly sovereign rating by S&P, Moody's and Fitch based on 58-CCR rating scale for 28 developed countries during Jan 2000-Nov 2017. Using the World Bank's classification, countries with high income are classified as developed countries. The dependent variable is *SovR58*. *Connection dummy* takes three forms: *Connection*, *Current* and *Past*; and equals 1 if there is a connection between at least one finance minister of a country and one of the directors/executives of a given CRA, 0 otherwise. *TF is* time fixed effect and *CF* is country fixed effect. The variables' definitions and summary statistics are presented in Tables 1 and 2. Significance levels are: *** $p < 1$ %, ** $p < 5$ %, * $p < 10$ %.

managers and senior managers amongst others.

Despite regulatory efforts to ensure the independence of sovereign ratings, ESMA's (2013) investigation has highlighted concerns about senior management involvement in rating process in the three largest CRAs. ESAM find that "in the case of one or more CRAs members of the Board of Directors were involved in the rating process […] specific rating actions had been driven by senior management, with limited or late-stage involvement by the lead analysts. In at least one instance, lead analysts received explicit guidance and opinions by senior managers about the countries and the recommendations to bring to the rating committees." (ESMA, 2013, p.7). While the need for the senior management can be justified in the rating decision to ensure quality and consistency of the rating assessments, ESMA has questioned whether the ratings were issued in an independent manner. Hence, based on the discussed insights, we argue that CRA' top directors and executives are involved in the sovereign rating decisions.

Importantly, CRAs name finance ministers amongst the most influential parties that participate in the sovereign rating committees (Fitch, 2006; S&P, 2013). Given sovereign creditworthiness is a combination of qualitative and quantitative considerations with regards to economic, fiscal, and political conditions amongst others, government officials play an active role in providing relevant information to CRAs in the rating process (Fitch, 2006; S&P, 2013; ESMA, 2013).[14] For instance, the IMF (2007, 2014) states that the ministry of finance is usually the authority which borrows and issues new debt and is responsible for assessing credit risk. Finance ministers negotiate the debt restructuring and investment across the EU countries (Reuters, 2023). For example, during December 2023 EU meeting in Brussels, finance ministers from Germany and France led opposing camps with regards to debt restructuring plans (Politico, 2023). Similarly, in 2015, the Finance Minister Yanis Varoufakis negotiated with creditors including the EU, ECB and the IMF on behalf of Greece (Guardian, 2015). In February 2024, Fitch (2024) commented that Pakistan's election outcome poses risks in securing financing agreement with IMF, whereby negotiation will be the first task of newly appointed finance minister (Bloomberg, 2024).

To capture the effect of connections between CRAs and governments across 38 European nations with various political structures,

[14] We also investigate connections between CRAs and central bank governors or prime ministers. The data is hand collected from the websites of central banks, ministries of finance and national governments. The results (available on request) are either insignificant or not conclusive. This suggests that the impact of connections on sovereign rating mainly matters when considering connections between CRAs and finance ministers. Prime ministers tend not to participate in the sovereign rating process and hence their connections with CRAs would not affect the country's sovereign ratings. The statistically insignificant role of connection between central bank governors and CRAs may suggest that connections with CRAs are more critical at the most senior level of governments. Future research could consider whether connections between CRAs' analysts and other less senior government officials and public servants have any significant impact on sovereign ratings.

Table 7
S&P, Moody's, Fitch – Developing Countries – OLS Fixed Effects.

	S&P			Moody's			Fitch		
	1	2	3	4	5	6	7	8	9
Connection	2.785***			1.821***			2.082***		
	(0.038)			(0.039)			(0.168)		
Current Connection		3.526***			1.134***			2.406***	
		(0.109)			(0.118)			(0.123)	
Past Connection			2.489***			1.555***			0.551*
			(0.044)			(0.053)			(0.141)
Unsolicited	−1.213***	−2.236***	−1.629***	−0.481**	−0.381*	−0.448**	−1.900***	−1.767***	−1.469***
	(0.116)	(0.096)	(0.117)	(0.134)	(0.149)	(0.135)	(0.170)	(0.153)	(0.152)
Business ties	0.615***	0.664***	0.703***	0.441***	1.074***	1.065***	0.771***	0.762***	0.773***
	(0.005)	(0.006)	(0.005)	(0.004)	(0.007)	(0.005)	(0.003)	(0.003)	(0.003)
Account balance	0.213***	0.273***	0.213***	0.080***	0.092***	0.058***	0.181***	0.193***	0.187***
	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)	(0.001)	(0.004)	(0.004)	(0.004)
Inflation	−0.450***	−0.425***	−0.438***	−0.542***	−0.590***	−0.582***	−0.400***	−0.399***	−0.402***
	(0.007)	(0.007)	(0.006)	(0.003)	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)
Imports	−0.027***	−0.020*	−0.023**	−0.074***	−0.081***	−0.076***	−0.040***	−0.044***	−0.043***
	(0.005)	(0.005)	(0.005)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)
GDP growth	0.224***	0.239***	0.179**	0.252***	0.289***	0.243***	0.177**	0.236***	0.095
	(0.027)	(0.036)	(0.028)	(0.037)	(0.041)	(0.035)	(0.036)	(0.043)	(0.042)
Investment	0.502***	0.521***	0.509***	0.279***	0.287***	0.270***	0.303***	0.302***	0.313***
	(0.011)	(0.010)	(0.011)	(0.006)	(0.006)	(0.005)	(0.006)	(0.007)	(0.006)
Observations	2114	2114	2114	2114	2114	2114	1696	1696	1696
R-squared	0.694	0.701	0.699	0.798	0.787	0.789	0.698	0.698	0.689
TF × CF	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table reports the estimated coefficients and country-clustered robust standard errors in parentheses of Eq. (1) using OLS modelling approach. The credit rating dataset consists of monthly sovereign ratings by S&P, Moody's (10 developing countries) and Fitch (9 developing countries) based on 58-CCR rating scale during Jan 2000-Nov 2017. Using the World Bank's classification, countries with low, lower middle and upper-middle income are classified as developing countries. The dependent variable is *SovR58*. *Connection dummy* takes three forms: *Connection*, *Current* and *Past*; and equals 1 if there is a connection between at least one finance minister of a country and one of the directors/executives of a given CRA, 0 otherwise. F*TF is* time fixed effect and *CF* is country fixed effect. The variables' definitions and summary statistics are presented in Tables 1 and 2. Significance levels are: *** $p < 1$ %, ** $p < 5$ %, * $p < 10$ %.

we have gathered information on all finance ministers whose terms overlap with the studied period. The data is collected from the websites of ministries of finance and national governments. We collect these contacts chronologically at a monthly frequency, starting with the terms that prior to the sample start date, 1st January 2000, and continue until 1st November 2017. We obtain information on the characteristics of these individuals, such as professional career, education, and network size, using the BoardEx. Information about CRAs' directors and executives were collected from CRA's annual reports, the BoardEx database. Once the names of CRAs' board executives and directors have been established, we collect information such as time served on the board, past employment, educational background, network size of CEO and average governance network from BoardEx. The database starts reporting these statistics from 1st January 2000, which is our sample's start date.

5. Empirical results

5.1. Fixed effects and ordered probit models

The results of Eq. (1) with *SovR58* as the dependent variable are reported in Tables 3–5 for S&P, Moody's, and Fitch. The results using OLS fixed effects model (Panel A) and ordered probit modeling approach (Panel B) are consistent. The coefficients in Spec. (1), (3), (5), (7), (9) and (11) report three main regressors affecting a sovereign rating (*SovR58*): *Connection, Unsolicited* and *Business Ties.* This simple model allows us to see the direction of the relationship between the FM and CRA executives without further controlling for the issuer and CRA specific characteristics. Positive and significant (at 1 %) coefficients on all the *Connection* dummies across the three CRAs are reported, suggesting that sovereigns which have FM professionally connected with the CRA executives are assigned higher ratings. The negative and significant (at 1 %) *Unsolicited* coefficient across the three CRAs suggests that unsolicited sovereign ratings are lower than solicited ratings, consistent with the previous bank and corporate literature (Bannier et al., 2010). In Spec. (3), unsolicited sovereigns are assigned between 2.078 and 2.59-CCR point (i.e., 0.69 and 0.86-notch) lower ratings than solicited sovereigns. This is an important finding since the impact of solicitation status on sovereign ratings across three CRAs has never been examined in previous studies. Finally, positive and significant coefficients of *Business Ties* imply that the longer the sovereign has been in contract with CRAs the higher its sovereign ratings are. Controlling for these characteristics is imperative in studying the effect of professional connections as it eliminates the probability that our results simply resemble a contract between CRA and a sovereign.

In Spec. (2), (4), (6) of Tables 3–5, we control for macroeconomic characteristics of the country, following earlier literature (e.g., De Moor et al., 2018; Fuchs and Gehring, 2017) and use interacted fixed effects. Month-country fixed effects control for unobserved differences in the development levels of sovereigns, their industrialization or geographical bias, which could result in endogeneity

issues. Connected countries are assigned higher sovereign ratings than non-connected countries by 1.598 (0.53), 1.626 (0.54), 3.798 (1.3) CCR-points (notches) by S&P, Moody's and Fitch respectively.[15] *Current Connection* has more pronounced impact than *Past Connection* in the case of S&P and Moody's. Countries with *Past* (*Current) Connection* with Fitch are assigned higher sovereign ratings by 3.747 (1.307) CCR points (i.e., 1.3 (0.44) notches). The effect of *Unsolicited* and *Business Ties* on sovereign ratings is consistent. The remainder of the macroeconomic variables is significant with the predicted signs and in line with economic intuition. Higher *Account Balance, GDP growth and Investment* lead to a stronger economy and hence higher sovereign ratings, while increased *Inflation* and *Imports* have a negative effect on sovereign rating.

Eq. (1) is estimated with *SovR20* as dependent using ordered probit and OLS fixed effect modelling approach. The results reported in Tables II–VII in the Appendix are consistent with those illustrated in Tables 3–7. The Marginal Effects (MEs) in the ordered probit model estimations are also reported facilitating clearer understanding of the effects of *Connection*, *Unsolicited* and *Business Ties* on various rating levels. Interestingly, the MEs (Table V, Spec. '8') imply that connected countries are more likely to be rated at AAA/Aaa, AA+/Aa1, AA/Aa2 and AA−/Aa3 by 5.4 %, 3.3 %, 2.1 % and 0.9 % by S&P; 4.6 %, 1.5 %, 0.8 % and 0.1 % by Moody's; and 14.4 %, 2.4 %, 2.4 % and 1.3 % by Fitch respectively, while they are less likely to be rated below A+/A1, than non-connected countries. Also, countries with business ties with CRAs are (less) more likely to be rated (below) at A + or above by S&P, (below) at Aa2 or above by Moody's, and (below) at BBB and above by Fitch. Unsolicited sovereigns are less likely than solicited sovereigns to be assigned triple-A or double-A ratings by 16.5 % by S&P, 11.6 % by Moody's and 7.8 % by Fitch.

5.2. Developed versus developing countries

There might be a tendency for the officials from more successful and richer countries to be hired by CRAs which could bias our *Connection* variable' results as these officials would be then biased towards countries with better ratings. To address this issue, we divide the sample into developed countries which are usually assigned better ratings, and developing sovereigns which are usually assigned lower sovereign ratings, and estimate Eq. (1) with *SovR58* as the dependent variable.[16] Table 6 reports the results for the developed countries, highlighting consistent results with our earlier findings that professional connections have a positive and significant effect on sovereign ratings. The effect is the strongest for *Past Connections* in all specifications and across all three CRAs, suggesting that the developed nations mostly benefit from their past connections. For instance, Spec. (3), (6), (9) shows that connected sovereigns rated by S&P, Moody's and Fitch are assigned higher ratings by 1.127, 1.057, 2.143 CCR points (equivalent to 0.37, 0.35 and 0.71 notch), respectively.

Table 7 reports the results for developing countries and shows a significantly stronger impact of connections on sovereign ratings than the impact reported for developed countries. *Current Connection* tends to have the stronger effect than on sovereign ratings in developing countries. This suggests that the developing sovereigns, unlike their developed counterparts, benefit more from the ongoing rather than past connections. For example, sovereigns with *Current Connection* between CRA directors and FMs in developing countries are assigned higher ratings than unconnected developing sovereigns by 3.526-CCR by S&P, 1.134-CCR point by Moody's and 2.406-CCR point by Fitch (Spec. (2), (5), (8) in Table 7). This effect is pronounced given that the impact of connection on the sovereign ratings of developing countries assigned by S&P, Moody's and Fitch is seven, two and four times bigger than the impact on developed countries' ratings (Spec. (2), (5), (8) in Table 6). These findings imply that there is a minimum concern about a potential upward rating bias arising from the case of officials from developed nations being appointed by CRAs.

These results are not surprising given that ratings of developing sovereigns are lower on average than developed counterparts. Also, developing countries fall within post-communist and centralized economies, and have been implementing financial reforms, including structural modernization of the banking sector or a taxation system. Hence, their governments have a greater incentive to benefit from their (on-going) connections with CRAs in order to achieve higher sovereign ratings. The literature on both corporate and sovereign ratings suggests that there is a substantial gain from higher ratings due to reduced cost of funding (Almeida et al., 2017). Hence, we believe the developing sovereigns might see a possible gain from preferential treatment and nepotism on the side of CRAs.

Our results show that the development level of sovereigns is a key determinant of sovereign ratings, in line with De Moor et al. (2018) and Fuchs and Gehring (2017). Our findings are also consistent with the literature on the importance of the subjective (soft) component of ratings (Fuchs and Gehring, 2017). However, our results add to these studies by providing evidence that developing countries benefit greatly from the subjective component of ratings. While we capture subjectivism in the form of professional connections between the governments and CRAs, earlier studies focus mainly on perceptions of raters, geographical position, and closeness of rated issuers to the United States, the head quarter of CRAs.

[15] The coefficient expressed in CCR points is divided by 3 to calculate the effect at notch level.

[16] The results of Eq. (1) with *SovR20* as the dependent variable, reported in the Appendix in Table VI for developed countries and Table VII for developing countries, are consistent. Countries with high income are classified as developed countries, while those with low income, lower middle income, and upper middle-income are classified as developing countries. In our developing countries' sub-samples, 68 %, 61 % and 55 % of observations are rated as speculative grade (BB+/Ba1 or lower), while 94 %, 89 % and 94 % of observations in developed countries' sub-samples are rated investment-grade (BBB-/Baa3 and above) by S&P, Moody's and Fitch respectively. Also, none of the developing countries are rated at the top rating scale (above BBB+/Baa1).

Table 8
Pooled CRAs – OLS Fixed Effects.

	Full Sample			Developed Sample			Developing Sample		
	2	4	6	2	4	6	2	4	6
Connection	2.087***			1.671***			2.179***		
	(0.053)			(0.094)			(0.041)		
Current Connection		0.669***			0.372**			1.628***	
		(0.036)			(0.054)			(0.117)	
Past Connection			1.968***			1.575***			1.880***
			(0.055)			(0.094)			(0.043)
Unsolicited	−2.305***	−2.274***	−2.283***	−2.436***	−2.365***	−2.431***	−1.890***	−1.905***	−1.793***
	(0.057)	(0.063)	(0.057)	(0.027)	(0.035)	(0.027)	(0.095)	(0.101)	(0.095)
Business ties	0.834***	0.845***	0.835***	0.336***	0.337***	0.336***	0.477***	0.498***	0.483***
	(0.001)	(0.001)	(0.001)	(0.003)	(0.003)	(0.003)	(0.003)	(0.005)	(0.003)
Observations	22,694	22,694	22,694	16,770	16,770	16,770	5924	5924	5924
R-squared	0.655	0.652	0.655	0.427	0.423	0.427	0.436	0.429	0.433
Chi2							354.08	286.28	299.01
Prob>chi2							0.000	0.000	0.000
CRA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TF × CF	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table reports the estimated coefficients and country-clustered robust standard errors in parentheses of Eq. (2) using OLS modelling approach for pooled CRAs sample. The credit rating dataset consists of monthly sovereign ratings three CRAs based on 58-CCR rating scale for 38 countries (whole sample), 29 countries (developed sample), and 10 countries (developing sample) during Jan 2000-Nov 2017. The dependent variable is *SovR58*. *Connection dummy* takes three forms: *Connection*, *Current* and *Past*; and equals 1 if there is a connection between at least one finance minister of a country and one of the directors/executives of a given CRA, 0 otherwise. *TF is* time fixed effect and *CF* is country fixed effect. The variables' definitions and summary statistics are presented in Tables 1 and 2. Significance levels are: *** $p < 1$ %, ** $p < 5$ %, * $p < 10$ %.

5.3. Separate versus pooled CRAs' regressions

Interestingly, in the full sample and the developed countries sub-sample, we observe unequal effect of *Connection* and *Business Ties* across the three CRAs, whereby their influence is the largest on Fitch ratings (Spec. (2) of Tables 3–5). Connected developed sovereigns are more likely to be assigned AAA/Aaa by S&P by 7.6 %, Moody's by 5.3 % and Fitch by 13.6 % (Panel B – Table VI in the Appendix). Also, the gap between solicited and unsolicited sovereign ratings of developed countries is the largest in the case of Fitch sovereign ratings. Unsolicited sovereigns are assigned lower ratings than solicited sovereigns by 1.5, 1.9 and 4.8 CCR-points on average by S&P, Moody's and Fitch (Columns (2), (5) and (8) of Table 6).

On the other hand, CRAs' practice in European developing countries appears to be different than in developed countries. The *Connection* influence is more pronounced on S&P sovereign ratings of connected developing countries. Connected sovereigns are assigned more generous sovereign ratings than non-connected ones by 2.8, 1.8 and 2.1 CCR-points on average by S&P, Moody's and Fitch respectively (Table 7). The MEs (Panel B – Table VII in the Appendix) also provide similar evidence suggesting that the likelihood of assigning BBB+/Baa1 (the highest assigned sovereign rating level in our developing countries' sub-sample) is the largest by S&P than the other two CRAs. In developing countries, the gap between solicited and unsolicited sovereign ratings is the smallest by Moody's, whereby unsolicited countries are less likely to be assigned investment-grade level ratings by S&P by 16.5 %, by Moody's by 4.6 %, and by Fitch by 15.4 % than solicited sovereigns (MEs in Table VII, Panel B, in the Appendix – Spec. (1), (4) and (7)).[17]

These results offer evidence supporting significant differences in sovereign rating process across the three CRAs. These can be due to CRAs putting different weights to hard (quantitative) and subjective (soft) factors when assessing the creditworthiness of sovereigns. It appears that S&P tends to attach more importance to soft information in developing countries, while subjective factors play more significant role in Fitch sovereign ratings in developed countries, compared to the other two largest CRAs. These are in line with evidence of previous studies (e.g., Jones et al., 2022; Nguyen et al., 2023) regarding the unequal market reactions to different CRAs' rating signals.

We estimate Eq. (2) using a pooled sample of the three CRAs, to observe the differences in professional connections across different CRAs for the same issuer at the same point in time. It allows us to identify the systematic effect of the connection between politicians and CRAs on ratings by disentangling them from the issuer (i.e., country) effects (Fracassi et al., 2016). The results confirm our findings and suggest that sovereigns with professional connections are assigned higher ratings (Table 8). Connected sovereigns are assigned on average 2.087-CCR point higher ratings (0.69-notch) than unconnected countries. In all estimations, the effect is more pronounced for

[17] The coefficients' differences are statistically significant based on mean differences tests (using 'lincom' (results available upon requests).

Table 9
The information content of Connection to sovereign rating signals – Developing Countries.

	Panel B-Negative sovereign rating signals								
	S&P			Moody's			Fitch		
	1	2	3	4	5	6	7	8	9
Connection	−0.052**			−0.033**			−0.038*		
	(0.022)			(0.016)			(0.022)		
Current Connection		−0.056**			−0.038**			−0.017	
		(0.023)			(0.018)			(0.025)	
Past Connection			−0.053**			−0.042***			−0.037*
			(0.022)			(0.016)			(0.023)
Unsolicited	0.001	0	0.002	0.027	0.016	0.013	0.021	0.024	0.018
	(0.029)	(0.026)	(0.03)	(0.019)	(0.019)	(0.018)	(0.036)	(0.024)	(0.036)
Business ties	−0.006**	−0.006**	−0.007**	−0.001	−0.001	0.000	−0.01**	−0.008*	−0.011**
	(0.003)	(0.003)	(0.003)	(0.001)	(0.001)	(0.001)	(0.005)	(0.005)	(0.005)
Observations	2019	2019	2019	2042	2042	2042	1401	1401	1401
TF × CF	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

	Panel B- Positive sovereign rating signals								
	S&P			**Moody's**			**Fitch**		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Connection	0.046*			0.041*			0.025		
	(0.028)			(0.023)			(0.031)		
Current Connection		0.243*			0.024			0.002	
		(0.147)			(0.033)			(0.044)	
Past Connection			0.047*			0.044*			0.025
			(0.028)			(0.024)			(0.032)
Unsolicited	−0.023	−0.039	−0.024	−0.009	−0.013	−0.003	−0.065*	−0.063**	−0.086**
	(0.038)	(0.215)	(0.038)	(0.026)	(0.025)	(0.026)	(0.037)	(0.031)	(0.036)
Business ties	0.013***	0.085***	0.013***	0.002	0.001	0.002	0.013*	0.01*	0.015**
	(0.004)	(0.026)	(0.004)	(0.001)	(0.001)	(0.001)	(0.008)	(0.006)	(0.008)
Observations	2042	2042	2042	2072	2072	2072	1438	1438	1438
TF × CF	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table reports the estimated coefficients and country-clustered robust standard errors in parentheses of OLS Fixed effect Model with the dependent variable is negative rating signals (*NegSig*) in Panel A and positive rating signals (*PosSig*) in Panel B. The credit rating dataset consists of sovereign ratings by S&P, Moody's (10 developing countries) and Fitch (9 developing countries) based on 58-CCR scale during Jan 2000-Nov 2017. Using the World Bank's classification, countries with low, lower middle and upper-middle income are classified as developing countries. *Connection dummy* takes three forms: *Connection*, *Current* and *Past*; and equals 1 if there is a connection between at least one finance minister of a country and one of the directors/executives of a given CRA, 0 otherwise. *TF is* time fixed effect and *CF* is country fixed effect. The variables' definitions are presented in Tables 1 and 2. Significance levels are: *** $p < 1$ %, ** $p < 5$ %, * $p < 10$ %.

the *Past Connection,* and is also the strongest for the developing countries (consistent with the results in Section 5.2).,[18][19]

5.4. Sovereign debt crisis

The European sovereign debt crisis has shed light on the role of CRAs in exacerbating the crisis and highlighted the interdependence between financial markets (Almeida et al., 2017). Although most financial markets throughout the continent were negatively affected, Portugal, Italy, Ireland, Greece, and Spain (PIIGS) experienced drastic sovereign rating downgrades, which widened sovereign bond spreads and shook the stock markets. Previous literature suggests that sovereign rating downgrades and defaults during the crisis had a spillover effect into other countries, corporations, banks and assets classes originated in those countries (Correa et al., 2014). Since our empirical analysis lies in the heart of the sovereign debt crisis, the negative rating news could introduce a negative trend in our data, which may potentially weaken the outcome of the *Connection* variable. Therefore, we estimate Eq. (1) using both the full sample and developed countries samples after excluding PIIGS countries. The results (available on request) are consistent and suggest that professional connections lead to an increase in sovereign ratings. This implies that our results were not influenced by the downward and

[18] We also estimate Eq. (1) using the average ratings assigned by all CRAs to country *i* at time *t*, using both ordered probit and fixed effects modelling approaches. The results, reported in Table VIII in the Appendix, are consistent with results discussed in Table 8 and in Sections 5.1 and 5.2.

[19] We estimate Eq. (1) using annual sovereign ratings assigned by each CRA to country *i* at year *y*. The results, reported in Table IX–XI in the Appendix, are consistent with our results using monthly ratings (discussed in Sections 5.1 and 5.2). Also, unreported results (available on request) using quarterly sovereign ratings are robust.

upward trends in sovereign ratings during and post- sovereign debt crisis respectively.[20]

5.5. The information content of connection to sovereign rating signals

Our results provide empirical evidence supporting the significance of the subjective (soft) component in the sovereign ratings. In this Section, we investigate the informativeness of *Connection* to CRAs' decisions to upgrade and downgrade the ratings of sovereign issuers. The limited number of prior studies on this issue suggests that subjectivity, while inevitable, leads to biased credit rating opinions (De Moor et al., 2018). Vernazza and Nielsen (2015) find the subjective aspect in credit ratings unhelpful in correctly assessing sovereign default risks. Similarly, Slapnik and Loncarski (2021) argue that the information content of subjective elements is limited since they offer relatively poor results in the classification's accuracy of sovereign rating downgrades and upgrades. However, the correct classification of rating changes increases once sentiment measures are considered in Slapnik and Loncarski's (2021) model.

We estimate Eq. (1) using negative rating signals (*NegSig*) and positive rating signals (*PosSig*) separately as the dependent variable (instead of the rating levels *Ratings*). The results provide evidence suggesting an asymmetric impact of *Connection* on sovereign rating changes in developed versus developing countries. In developing countries' sub-sample estimations (Table 9), the coefficients of *Connection* are significant, apart from Fitch positive signals, all with the expected signs. Connected developing countries are less likely to experience sovereign rating downgrades and more likely to be upgraded than countries with no professional connection with CRAs. The influence is more significant for *Past* than *Current Connection*, and for negative than positive rating signals, consistent with the stronger impact of negative signals on financial markets highlighted in prior literature (e.g., Afonso et al., 2022; Nguyen et al., 2023). *Connection*'s impact is also more (less) pronounced on S&P (Fitch) sovereign rating changes than on Moody's signals, in-line with our result in Section 5.3 about the stronger weight assigned to subjective component in S&P sovereign ratings in developing countries.

On the other hand, unreported results for developed countries show that *Connection* is not informative for sovereign rating changes. This suggests that sovereign rating signals in developed countries are more driven by quantitative factors. Developing countries are usually characterised by higher uncertainty and data limitations, and hence they are more opaque requiring a stronger qualitative judgement by CRAs when deciding on upgrading or downgrading their sovereign ratings (Slapnik and Loncarski, 2021). These results are also in line with De Moor et al. (2018) who find that subjective component of ratings tends to be more significant at the bottom of the rating scale (mainly in the developing countries).

5.6. Ensuring causal interpretation and minimizing endogeneity

We take several steps to ensure a causal interpretation of our results and to minimize the endogeneity concerns. To avoid the omitted variable bias in the model, we include several sovereign rating determinants suggested in the literature (De Moor et al., 2018; Fuchs and Gehring, 2017). We also control for the solicitation status of sovereign ratings to rule out the possibility that our findings arise due to a self-selection bias. The ratings' solicitation cannot be a direct outcome of the connections between governments and CRAs, as rating solicitations are established long before individuals have crossed paths and become politicians or CEOs at CRAs. In our sample, 75 % of the countries are assigned solicited ratings, and ratings have never changed from unsolicited to solicited, which could be an indicator of the possible relationship between politician and the CRA (i.e., the sovereign takes up a contract with the CRA to benefit from it). If our results were driven by soliciting CRAs, the effect of connection would have disappeared, but we find a significant impact of connection on the sovereign ratings across various specifications. Further, to correct for the possibility that the connection is an outcome rather than a force influencing sovereign ratings, we distinguish between *Current* and *Past connection.*

We estimate Eq. (1) adding two additional control variables, *Elections* and *Crisis,* which control for heterogeneity across time and are likely to be relevant for the effectiveness of the professional connections. The frequency of parliamentary elections, *Elections*, might affect the duration of the established professional connection. *Crisis* dummy depicts the financial crisis periods which might have affected the strength of the connection. The results, available on request, confirm that professional connections have a positive and significant effect on sovereign ratings. Further, we use *Tenure* as alternative proxy of business ties between sovereigns and CRAs (e.g., Dhillon et al., 2019). *Tenure* measures the duration in years that the FM of interest have spent in their roles in each country. In our sample, the average *Tenure* for FMs is 3.08 years, the shortest recorded *Tenure* is 0.98 years (Lithuanian FM), and the longest is 8.95 years (Azerbaijani FM). The average *Tenure* for FMs is 2.95 years in developed countries while 3.5 years in developing countries. The results of Eq. (1) using *Tenure* (instead of *Business Ties*), reported in Tables XII–XIV in the Appendix, are consistent. *Tenure* coefficients are positive and significant (at 1 %) in all estimations. Similar to *Business Ties'* results, *Tenure*'s influence is more pronounced in developing than developed countries, and its effect is the largest on Fitch sovereign ratings than Moody's and S&P in both the full sample and developed countries sub-sample. The results of *Connection* and *Unsolicited* are robust and consistent with the results of Tables 3–7.[21]

There could be potential concern that CEOs who work on assignments of sovereign ratings are not randomly assigned (e.g., they might have superior information about a given sovereign or a market). We address these potential selection effects by comparing

[20] Future research may investigate the impact of professional connections on sovereign ratings during the Covid-19 pandemic and Russia-Ukraine conflict.

[21] *Elections* is a dummy variable taking value of 1 in the month and year of parliamentary election of a given country and 0 otherwise. It is sourced from EED (European Election database). *Crisis* is a dummy variable that takes the value of 1 during 2007–09 and 2010–12 and 0 otherwise. Data on *Tenure* was collected from ParlGov, the University of Bremen's Parliament and Government Composition database.

Table 10
Sovereign 10-Year Bond Yield – Univariate and Multivariate Analyses.

Panel A – Univariate Analysis

	S&P			Moody's			Fitch		
	Bond Yield Mean	Diff. in Means	Diff. p-value	Bond Yield Mean	Diff. in Means	Diff. p-value	Bond Yield Mean	Diff. in Means	Diff. p-value
Average bond yield at the time of connection									
Connected period	6.094	2.177	2.849	5.971	2.276***	2.903	9.413	−1.747**	−2.085
Non-connected period	8.272			8.247			7.666		
Average bond yield three years after the connection									
Connected period	6.881	−1.050**	−2.075	7.265	−1.524***	−2.946	7.306	−1.129**	−2.067
Non-connected period	5.830			5.741			6.177		

Panel B – Multivariate analysis

Average bond yield at the time of connection

	S&P			**Moody's**			**Fitch**		
yhat – Connection	−0.126***			−0.070***			−0.160***		
	(0.003)			(0.001)			(0.008)		
yhat – Current Connection		−0.118***			−0.081***			−0.627***	
		(0.003)			(0.002)			(0.021)	
yhat – Past Connection			−0.132***			−0.036***			−0.356***
			(0.003)			(0.001)			(0.012)
Observations	5606	5606	5606	5606	5606	5606	4368	4368	4368
R-squared	0.152	0.149	0.153	0.252	0.146	0.256	0.247	0.176	0.167
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TF	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CF	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Average bond yield three years after the connection

	S&P			**Moody's**			**Fitch**		
yhat – Connection	0.368***			0.220***			0.531***		
	(0.009)			(0.007)			(0.006)		
yhat – Current Connection		0.385***			0.244***			1.069***	
		(0.009)			(0.007)			(0.026)	
yhat – Past Connection			0.372***			0.207***			0.608***
			(0.009)			(0.007)			(0.006)
Observations	4145	4145	4145	4145	4145	4145	3266	3266	3266
R-squared	0.128	0.132	0.132	0.099	0.097	0.101	0.096	0.115	0.092
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
TF	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CF	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel A presents univariate 10-years sovereign bonds analysis discussed in Section 5.6. We compare the average sovereign bonds yields at the time of the connection and three years after the connection was formed. We also compare the differences in bond yield means for connected versus non-connected periods. Bond yield is a yield to maturity. Difference in means is a difference between connected period and non-connected period. Panel B presents two-stage multivariate 10-year sovereign bonds analysis. In stage 1, we compare the average sovereign bonds yield at the time of the connection and three years after the connection was formed. In the first stage, we run Eq. (1) and predict yhat for *Connection* variables. In the second stage, the dependent variable is bond yield, and the independent variables include yhat of connection variables and macro-level control variables such as *Inflation*, *Imports*, *GDP growth* and *Investment*. Significance levels are: *** $p < 1$ %, ** $p < 5$ %, * $p < 10$ %.

connections of CEOs from each CRA against themselves and against connections of CEOs from other CRAs. We achieve this by using data for each CRA's regressions (Eq. (1)), pooling CRAs (Eq. (2)), and using time-country fixed effects to control for possible omitted variables at time and cross-sectional spectrum. In Eq. (2), CRA fixed effects are applied. These fixed effects control for methodological differences amongst CRAs and CEO connections within a given CRA against themselves rather than other CEOs. The characteristics of the sovereigns, such as economic conditions, should have a similar impact on connected and non-connected CEOs and therefore the interacting (time-country) fixed effects should prevent them from affecting our estimates of a *Connection* (Cornaggia et al., 2020).

To further minimize any concerns related to endogeneity, we employ 'propensity score matching (PSM)' approach, whereby assuming randomness in the information of connection, the treatment is the *Connection*. The treated (control) group includes countries which have (do not have) professional connections with CRAs. A sample which shares similar characteristics for both groups based on

set of covariates prior to the treatment is constructed.[22] The balancing tests (available on request) show that after the matching, there is a significant reduction in absolute standardized bias (exceeding 90 %), while all the covariates meet the balancing assumption (i.e., means of covariates in the two groups after the matching do not differ from each other). The value of Pseudo-R2 from estimating the propensity score on the matched samples is low, and the likelihood ratio (LR) test is statistically significant before matching but not significant after matching. Finally, the t-tests on differences in the average treatment effect on the treated (ATT) between treated and control groups are significant. Subsequently, we re-estimate Eq. (1) based on the matched sample and report the results in Table XV in the Appendix. All estimations generate positive and significant coefficients for the treatment dummy (*Connection*), implying that connected sovereigns are assigned higher ratings than non-connected ones. These results confirm that the estimates used prior to the matching exercise robustly represented the economic significance of the effect of *Connection, Business Ties*, and *Unsolicited* on sovereign ratings.[23]

Lastly, to minimize the concern related to omitted variable bias and other inconsistencies arising due to endogeneity, we follow Chen et al. (2016) and Wintoki et al. (2012) and use the 'system Generalized Method of Moments (GMM)' approach. The system GMM is an improvement from the 'difference GMM' as it relies on two equations in both levels and first differences to be constructed (Wintoki et al., 2012). This helps to address the source of endogeneity such as omitted variable bias, reverse causality bias and dynamic endogeneity as well as the mis-specified functional form and possible measurement errors (Gibson et al., 2017; Chen et al., 2016; Wintoki et al., 2012). By adding the lagged value of the dependent variable to Eq. (1), as in Chen et al. (2016), we ensure that the professional connection is not determined by the past sovereign ratings. The results of the system GMM model are robust and confirm our earlier findings (see Tables XVII, XVIII and XIX in the Online Appendix). The coefficients of lagged sovereign rating $Rating_{t-1}$ (significant at 1 %) suggest that it is an important determinant of the current rating. The *Connection* dummy remains positive and significant for all types of connection in-line with our earlier results. The diagnostic tests support our chosen model specification. Namely, the Hansen J test shows no evidence of invalid instruments, whereas AR2 test rules out higher-order autocorrelation.

5.7. Mechanism and implications

Professional connections, between politicians and top CRA executives, associated with higher sovereign credit ratings can be subject to two interpretations. Firstly, professional connection is a channel for reducing information asymmetries between the CRA and a sovereign, which minimizes the need of CRA to issue more conservative ratings in the absence of the information. The second interpretation is that the connection leads to a higher rating because of favoritism, which stems from the conflict of interest due to issuer-pays model inherent in the CRA business. As suggested by Cornaggia et al. (2020), this interpretation might be due to a rational or behavior component. To test these competing hypotheses, we conduct a bond yield test suggested by Khatami et al. (2016) in the context of private debt ratings. In an efficient financial market, if connected sovereigns receive "inflated" ratings resulting from favouritism on the side of the CRA, we expect the bond yields to adjust upwards until more information about the sovereign is discovered by the market. In other words, we would expect the bond yields of connected sovereigns to increase over time (compared to non-connected sovereigns) while the market receives information through trading and realizes that these were initially overrated bonds. On the other hand, if the professional connection leads to an information discovery (i.e., better flow of information), we should not see a strong increase in bond yields across the connected sovereigns.

Panel A of Table 10 presents the univariate analysis of differences between average bond yields of 38 sovereign bond issuers in our sample prior and after the professional connection with the CRA has been formed. Firstly, we compare the mean bond yields at the time of the connection with the mean bond yield before the connection was established. T-test shows that there is (is not) a significant difference between the two means for Moody's and Fitch (S&P). Secondly, we compare the average bond yields three years after the connection was formed, similar to Khatami et al. (2016), with the average yields before the connection. The univariate test indicates that the difference in means is significant for all CRAs. This implies that the higher ratings assigned to the connected sovereigns are due to favorable treatment of the connected sovereign issuers.

However, this univariate test does not incorporate any information about rating changes. For example, yields could decrease after connection was established without the rating of a connected sovereign actually changing. Therefore, we conduct a multivariate analysis, which allows us to control for other factors that may have changed and influenced bond yields three years after the connection was established. To do this, we perform a two-stage analysis, where the first stage has ratings as a function of connections and the second stage has the bond yields as a function of the estimated coefficient of ratings from the first stage.[24] Our results are reported in Panel B of Table 10 and show that the bond yields become lower at the time of the connection and increase three years following the connection. The coefficient on 'yhat *Connection*' is significant at 1 % level in all specifications (*Current* or *Past*) and for all CRAs.

[22] In the full sample, these include: the mean GDP growth by country (*Mean GDP growth*), IMF *Income Level* for each country, the mean of natural logarithm of Consumer Price Index (*Mean CPI*) by country. In developed and developing sub-samples, *Mean GDP growth* is dropped to satisfy the balancing tests.

[23] Moreover, due to the nature of the *Connection* which changes over time and cross sectionally, we use two-way fixed-effect estimations, and the results (reported in Table XVI in the Online Appendix) rule out the heterogenous treatment effects across time and groups which would require alternative estimators.

[24] In the first stage, we estimate Eq. (1) and predict yhat for *Connection* variable. In the second stage, the dependent variable is bond yield, and the independent variables include yhat of *Connection* variables and macro-level control variables such as *Inflation*, *Imports*, *GDP growth* and *Investment.*

In contrast with Khatami et al.'s (2016) findings that the information content is the reason behind inflated corporate ratings of connected firms in the US during 1994–2011, our results support our prediction of favoritism and contribute towards the existing literature on bias in sovereign credit ratings (e.g., De Moor et al., 2018; Fuchs and Gehring, 2017). Our results confirm Cornaggia et al.'s (2020) finding that municipalities enjoy real economic benefits form the presence of biased home analysts due to favoritism. Our findings are in line with the well-established signaling theory (Connelly et al., 2011) and social networks as "prisms" perspective (Podolny, 2001). These theories suggest that social ties can operate as signals offering endorsement of the quality and reliability to third parties, while managers may draw inferences from their social network ties to gain certainty about their employees' competences. Further, the literature on the relationships between managers and their subordinates suggests that the few favoured employees, with whom management has the closest relationship, are considered more trustworthy and receive more autonomy and authority (Schriesheim et al., 1998). Our study extends this literature by providing evidence on how the indirect reputational cues by top CRA executives are relevant to the creditworthiness assessment when there is ambiguity regarding the credit risk quality of sovereigns.

Our results have important implications for financial regulation. We demonstrate that the complicit decoupling, which stands for unethical behaviour hidden by window-dressing of involved parties or institutions, suggested by Clark and Newell (2013) in the context of corporate ratings, also applies to sovereign rating assessments.[25] We confirm that favor-rendering between CRAs and politicians can be a plausible explanation for the higher ratings assigned to connected sovereigns. Although reputational concerns and legitimacy of CRAs or sovereign officials may seem prohibitive to such favorite inflated ratings, Clark and Newell (2013) argue that often symbolic actions are taken to deal with the conflicts that underpin this behavior. Regulations, aiming to deal with conflict of interest stemming from CRA issuer pays model, can be considered as such symbolic repairs. The fact that CRAs retain their reputation and legitimacy despite their ratings being exposed as decoupled is an interesting paradox. Clark and Newell (2013) highlight serious consequences of complicit decoupling, whereby multiple actors are not interested in repairing dysfunctional practices as they (regulators, issuers, investors and CRAs) are benefitting too handsomely from them.

Financial regulation should recognize that conflict of interest can be transmitted by personal connections between sovereign issuers and CRAs, which might give rating advantages to connected sovereigns. Efforts should be made to ensure that enhanced ratings reflect the information at hand rather than subjective evaluations performed by CRA. Ensuring that sovereign ratings are of the best quality should become a priority for regulators and policymakers since sovereign ratings influence ratings of other asset classes. A favorable appraisal of a sovereign might enable CRAs to gain or maintain an existing access to an income stream by issuing ratings on other products in the country (e.g., corporates, financials). It can also help sovereigns to maintain a stable economy by ensuring the costs of capital remain unaffected. Therefore, the nature of sovereign ratings might give incentives to both CRAs and sovereigns to influence rating decisions and therefore should not be overlooked.

6. Conclusion

The paper examines whether the professional connections between finance ministers and directors or top executives of the biggest three CRAs have any significant effect on determining their sovereign ratings. Using a hand collected dataset of connections between S&P, Moody's, and Fitch and 38 countries' politicians during the period of 2000–2017, we find that connected sovereigns are assigned higher sovereign ratings. Our findings highlight that, apart from qualitative and quantitative components, the sovereign ratings encompass a subjective part. Since politicians and CRAs' directors and executives take part in the rating process of sovereigns, we assume that professional connections constitute a significant part of the subjective element of sovereign ratings.

We argue that the complexity of the European markets, seen via diverse societal structures, cultures and identities, plays a key part in the information discovery process. Supporting the findings of De Moor et al. (2018) and Fuchs and Gehring (2017), we show that developing countries are mostly affected by the subjective information content of sovereign ratings. In contrast to Khatami et al.'s (2016) findings on corporate ratings, we attribute this effect to favoritism on the side of CRAs in line with Cornaggia et al.'s (2020) findings on municipalities. Our findings go in hand with the literature on signaling (Connelly et al., 2011) and social networks perspective (Podolny, 2001), which suggest that social ties can operate as signals offering endorsement of the quality and reliability to third parties. The literature in Psychology presents theories to explain the relationships between subordinates and managers where close relationships with favored employees result in their better treatment (Schriesheim et al., 1998). We contribute to this literature by providing evidence of how indirect reputational cues considered by CRA executives influence sovereign rating assessments where the perfect information on risk quality is not available.

Our results are robust to the inclusion of time-country interactive fixed effects and remain statistically significant using different estimation techniques such as OLS fixed effects, ordered probit, propensity score matching (PSM), system GMM and two-way fixed-effects. The latter allows us to rule out the need for alternative estimators. Our estimations control for the solicitation status of ratings and business ties between sovereigns and the CRA. We find that sovereign solicitation status, which has been largely ignored by the literature and the policymakers, is an important determinant of sovereign ratings. We find that unsolicited sovereign ratings are lower than solicited sovereign ratings. Further, our results show that S&P tends to attach higher importance to soft information in developing countries, and Fitch tends assign more weight to subjective factors in developed countries, highlighting interesting differences across CRAs' sovereign rating process. Our study also offers new evidence suggesting that *Connection* is informative for sovereign rating changes' decisions for developing countries only, possibly because they are more opaque, and hence involve more subjective

[25] Decoupling is often explained to protect organisational core from external pressures. Firms adopt policies which symbolically signal conformity to external pressures but often never actually implement changes.

judgement by CRAs, than their developed counterparts.

Our study contributes towards the scarce literature investigating professional connections in the rating industry (Khatami et al., 2016). We also supplement the literature focusing on the value of subjective information when estimating sovereign creditworthiness (De Moor et al., 2018; Fuchs and Gehring, 2017). To best of our knowledge, this is the first paper to unveil more pronounced impact of subjective information, channeled via professional connections, for developing countries. We also contribute to the recent debate about the importance of solicitation status of ratings, whereby previous studies only focused on corporate and bank ratings.

Given the importance of sovereign ratings on the cost of credit for sovereigns, banks and corporations domiciled in that country (induced by the ceiling effect), this study is an important extension to the literature and should be of interest to policymakers, governments, and market participants alike. Our results have important consequences given the recent climate of CRAs' operations being scrutinized by European regulators in the aftermath of the sovereign debt crisis. Attention was given to the potential issues raised from conflict of interest inherited in the issuer-pays model and subsequently the quality of ratings. This issue of solicitation is especially important from the regulatory perspective since solicited ratings are higher than unsolicited ratings with no underlying differential in fundamentals.

Considering the prominence of sovereign ratings in the political debate, there is a higher risk for sovereign rating' teams losing their independence when making their decisions than is the case of other asset classes. Since sovereign ratings affect ratings of other asset classes, sovereign rating teams face higher pressure to release ratings which "earn" them other rating activities in that country (i.e., corporates, financial institutions). This immense pressure requires a high degree of personal and professional resilience. Improving working conditions especially in this segment of ratings should be at the heart of the policy agenda. For instance, rules should be put in place to ensure that sovereign rating actions are objective and independent from other rating segments in order to bolster the credibility of the rating process as a whole.

CRediT authorship contribution statement

Patrycja Klusak: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Resources, Supervision, Writing – original draft, Writing – review & editing. **Yurtsev Uymaz:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Resources, Software, Validation, Visualization, Supervision. **Rasha Alsakka:** Conceptualization, Formal analysis, Investigation, Supervision, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The authors do not have permission to share data.

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Appendix A. Supplementary material

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References

Adelino, M., Dinc, S., 2014. Corporate distress and lobbying: evidence from the stimulus act. J. Financ. Econ. 114, 256–272.
Afonso, A., Jalles, J.T., Venâncio, A., 2022. Do financial markets reward government spending efficiency. J. Int. Finan. Markets Inst. Money 77, 101105.
Agarwal, S., Chen, V., Sim, G., Zhang, W., 2019. Dissecting the information value of sovereign credit rating reports. Working Paper. doi: 10.2139/ssrn.2526648.
Almeida, H., Cunha, I., Ferreira, M.A., Restrepo, F., 2017. The real effects of credit ratings: the sovereign ceiling channel. J. Financ. 72, 249–290.
Baghai, R.P., Becker, B., 2020. Reputations and credit ratings: evidence from commercial mortgage-backed securities. J. Financ. Econ. 135, 425–444.
Ballinger, A., Cross, R., Holtom, C., 2016. The right friends in the right places: understanding network structure as a predictor of voluntary turnover. J. Appl. Psychol. 101, 535–548.
Bannier, C., Behr, P., Güttler, A., 2010. Rating opaque borrowers: why are unsolicited ratings lower. Eur. Finan. Rev. 2, 263–294.
Binici, M., Hutchinson, M., 2018. Do credit rating agencies provide valuable information in market evaluation of sovereign default risk? J. Int. Money Financ. 85, 58–75.
Bloomberg, 2012. Sarkozy dealt blow 100 days before vote with loss of AAA. Jan 16, 2012.
Bloomberg, 2021. South Africa aims at higher credit ratings with austerity plans. Nov 12, 2021.
Bloomberg, 2024. Pakistan to seek at least $6 Billion in new IMF loan program. Feb 22, 2024.
Carney, R.W., Child, T.B., Li, X., 2020. Board connections and crisis performance: family, state, and political networks. Finance 64, 101630.
Chen, S., Chen, H., Chang, C., Yang, S., 2016. The relation between sovereign credit rating revisions and economic growth. J. Bank. Financ. 64, 90–100.

Clark, C.E., Newell, S., 2013. Institutional Work and complicit decoupling across the U.S. capital markets: the work of rating agencies. Bus. Ethics Q. 23, 1–30.
Cohen, L., Frazzini, A., Malloy, C., 2010. Sell-side school ties. J. Financ. 65, 1409–1437.
Connelly, B.L., Certo, S.T., Ireland, R.D., Reutzel, C.R., 2011. Signaling theory: a review and assessment. J. Manag. 37, 39–67.
Cornaggia, J., Cornaggia, K.R., Israelsen, R.D., 2020. Where the heart is: information production and the home bias. Manag. Sci. 66, 5532–5557.
Correa, R., Lee, K., Sapriza, H., Suarez, G., 2014. Sovereign credit risk, banks' government support, and bank stock returns around the world. J. Money Credit Bank. 46, 93–121.
Dasgupta, S., Zhang, K., Zhu, C., 2021. Do social connections mitigate hold-up and facilitate cooperation? Evidence from supply chain relationships. J. Financ. Quant. Anal. 56, 1679–1712.
De Chaisemartin, C., d'Haultfoeuille, X., 2020. Two-way fixed effects estimators with heterogeneous treatment effects. Am. Econ. Rev. 110, 2964–2996.
De Moor, L., Luitel, P., Sercu, P., Vanpee, R., 2018. Subjectivity in sovereign credit ratings. J. Bank. Financ. 88, 366–392.
Dhillon, A., Pickering, A., Sjöström, T., 2019. Sovereign debt: election concerns and the democratic disadvantage. Oxf. Econ. Pap. 71, 320–343.
ESMA, 2013. ESMA's assessment of governance, conflicts of interest, resourcing adequacy and confidentiality controls. ESMA/2013/1775. Dec 2013.
ESMA, 2021. Report on CRA market share calculation. ESMA80-416-197. Dec 2021.
Faccio, M., 2006. Politically connected firms. Am. Econ. Rev. 96, 369–386.
Fitch, 2006. The rating process. Fitch Ratings, Jul 2006.
Fitch, 2016. European Union transparency report. Fitch Ratings, Mar 2016.
Fitch, 2019. Sovereign rating criteria. Master criteria. Fitch Ratings, May 2019.
Fitch, 2024. Pakistan's election outcome highlights risks to new IMF deal. Feb 19, 2024.
Flynn, S., Ghent, A., 2018. Competition and credit ratings after the fall. Manag. Sci. 64, 1477–1973.
Fracassi, C., Petry, S., Tate, G., 2016. Does rating analyst subjectivity affect corporate debt pricing? J. Financ. Econ. 120, 514–538.
Fuchs, A., Gehring, K., 2017. The home bias in sovereign ratings. J. Eur. Econ. Assoc. 15, 1386–1423.
Gibson, H.D., Hall, S.G., Tavlas, G.S., 2017. Self-fulfilling dynamics: the interactions of sovereign spreads, sovereign ratings and bank ratings during the Euro financial crisis. J. Int. Money Finance, 73(Part B), 371–385.
Gounopoulos, D., Mazouz, K., Wood, G., 2021. The consequences of political donations for IPO premium and performance. Finance 67, 101888.
Guardian, 2015. Greek finance minister Yanis Varoufakis replaced as leader of debt talks. Apr 27, 2015.
Harrington, W., 2011. Comment on SEC proposed rules for Nationally Recognized Statistical Rating Organizations. S7-18-11, 8/8/2011.IMF, 2014. Revised guidelines for public debt management. IMF Policy Paper. Apr 1, 2014.
IMF, 2007. Manual on fiscal transparency. Fiscal Affairs Department. Apr 20, 2007.
IMF, 2014. Revised guidelines for public debt management. IMF Policy Paper. Apr 1, 2014.
Jagolinzer, A., Larcker, D., Ormazabal, G., Taylor, D., 2020. Political connections and the informativeness of insider trades. J. Financ. 75, 1833–1876.
Jones, L., Alsakka, R., ap Gwilym, O., Mantovan, N., 2022. Regulating rating agencies: A conservative behavioural change. J. Financ. Stab. 60, 100999.
Kempf, E., Tsoutsoura, M., 2021. Partisan professionals: evidence from credit rating analysts. J. Financ. 76, 2805–2856.
Khatami, S.H., Marchica, M.T., Mura, R., 2016. Rating friends: the effect of personal connections on credit ratings. Finance 39, 222–241.
Klusak, P., Kraemer, M., Vu, H., 2022. First-mover disadvantage: the sovereign ratings mousetrap. Financ. Mark. Inst. Instrum. 31, 3–44.
Mählmann, T., 2011. Is there a relationship benefit in credit ratings? Eur. Finan. Rev. 15, 475–510.
Moody's, 2006. Report on the code of professional conduct; Apr 2006.
Nguyen, L.T.P., Alsakka, R., Mantovan, N., 2023. The impact of sovereign credit ratings on voters' preferences. J. Bank. Financ. 154, 1069.
Podolny, J.M., 2001. Networks as the pipes and prisms of the market. Am. J. Sociol. 107, 33–60.
Politico, 2023. Finance ministers fail to strike EU spending rules deal after hours of talks. Dec 8, 2023.
Reuters, 2023. EU finance ministers to debate debt and investment rules, no deal imminent. Oct 16, 2023.
S&P, 2013. How we rate sovereigns, Standard and Poor's, November 2013.
S&P, 2014. S&P Rating Services. EU group of credit rating agencies. Transparency Report 2014. Standard and Poor's, December 2014.
S&P, 2018. S&P Global Ratings. S&P global ratings conflict of interest. Regulatory disclosures for European Union. Standard and Poor's.
Schriesheim, A., Neider, L., Scandura, A., 1998. Delegation and leader–member exchange: Main effects, moderators, and measurement issues. Acad. Manag. J. 41, 298–318.
Slapnik, U., Loncarski, I., 2021. On the information content of sovereign credit rating reports: improving the predictability of rating transitions. J. Int. Finan. Markets. Inst. Money 73, 1013–1044.
Slapnik, U., Loncarski, I., 2023. Understanding sovereign credit ratings: text-based evidence from the credit rating reports. J. Int. Finan. Markets. Inst. Money 88, 1018–1038.
Stanfield, J., Tumarkin, R., 2018. Does the political power of nonfinancial stakeholders affect firm values? Evidence from labor unions. J. Financ. Quant. Anal. 53, 1101–1133.
The Times 2017. Credit rating warnings if austerity is reversed. Jul 15, 2017.
Titl, V., Geys, B., 2019. Political donations and the allocation of public procurement contracts. Eur. Econ. Rev. 111, 443–458.
Unsal, O., Hassan, M.K., Zirek, D., 2016. Corporate lobbying, CEO political ideology and firm performance. Finance 38, 126–149.
Vernazza, D.R., Nielsen, E.F., 2015. The damaging bias of sovereign ratings. Econ. Notes 44, 361–408.
Wintoki, M.B., Linck, J.S., Netter, J.M., 2012. Endogeneity and the dynamics of internal corporate governance. J. Financ. Econ. 105, 581–606.