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## Credit rating agencies' views on China's Belt and Road Initiative

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### ABSTRACT

How do credit rating agencies (CRAs) view China's Belt and Road Initiative (BRI)? Our analysis of 132 countries in 2000–17 demonstrates that Chinese foreign investment adversely affects sovereign ratings of recipient countries when these countries participate officially in the BRI but is otherwise insignificant. These results indicate that rather than being a generic China bias, the BRI bias is a geopolitical bias, based on CRA's expectation that BRI recipients become more dependent economically and politically on China. The main implication of our findings in financial terms is that CRAs limit the supply of international capital to BRI recipients. In broader terms of international political economy, this indicates a feedback loop whereby BRI funding repels Western funding and increases dependence on more BRI financing. Put differently, CRAs exacerbate the structural shift in the world political economy toward a decoupling between the US and Chinese financial spheres of influence.

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## Introduction

Launched in 2013 by President Xi Jinping, China's Belt and Road Initiative (BRI) has become the trademark of Chinese foreign policy. Motivated by the extension of China's opening-up economic reforms, concerns around industrial overcapacity following the 2007–8 global financial crisis, and the desire to implement a Chinese version of the Marshall Plan to accelerate global economic growth with China as its locomotive, the BRI has become a defining feature of the 21st century (He 2020). The official goals of the BRI are to promote policy coordination, facilitate connectivity, unimpeded trade, financial integration, and people-to-people bonds (National Development and Reform Commission 2015). As such, BRI is about much more than just building roads and bridges. Despite a recent decline in project lending (Carmody and Wainwright 2022), as of

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October 2023, a total of 148 countries had officially joined the BRI by signing a Memorandum of Understanding (MoU) with China (Green Finance & Development Center 2023). Far beyond a new Silk Road connecting China with parts of Central Asia and Eastern Europe, the BRI's spatial focus extends across all continents and includes 44 countries in sub-Saharan Africa, 21 in Latin America and the Caribbean, and 18 in the European Union (Green Finance & Development Center 2023).

A major research gap concerns the relationship between BRI and credit rating agencies (CRAs). CRAs assess the creditworthiness of firms and governments around the globe, determining the cost and sustainability of debt financing and shaping the norms of corporate and public governance in the process. Do CRAs view BRI engagement as a negative, positive, or a neutral factor in relation to sovereign creditworthiness? This is a significant question given that the BRI is expected to finance trillions of dollars' worth of projects across over 100 countries (Hurley, Morris, and Portelance 2019) and considering growing evidence on the biases of CRAs detectable in their ratings (e.g. Fuchs and Gehring 2017; Ioannou, Wójcik, and Pažitka 2021).

Our analysis, based on data for 132 countries and the period of 2000–17, shows that Chinese foreign investment following official admission of recipient countries to the BRI has a significant negative impact on their sovereign credit ratings. We show that what matters the most for CRAs is not the type of Chinese investment *per se*, but whether it takes place in the context of official participation in the BRI. We also demonstrate that while both largest CRAs (S&P and Moody's) rate countries down based on their BRI receipts, the negative impact is particularly prominent in S&P's ratings.

Our results have major implications for the international political economy. We show that the negative views on the BRI, so prevalent in Western media, are also present in the judgment of the world's largest and US-based CRAs, as major arbiters of global financial flows. This means that countries on the receiving end of BRI finance face higher barriers to access foreign funding and pay more for it, whenever their lenders and investors follow the guidance of CRAs' sovereign ratings.

The paper is organized as follows. The next section reviews literature on the topic and reflects on possible scenarios concerning the relationship of ratings with BRI. The following section elucidates our data collection process and econometric methods. This is followed by the presentation of the results of our estimations, including robustness tests. The final section discusses the results and their implications.

### ***Controversy over the Belt and Road Initiative***

As the spatial and sectoral foci of the Belt and Road Initiative expand, so does scrutiny over its financing. Western media often view the BRI as “debt-trap diplomacy” (Chellaney 2017). The idea is that China is leveraging its economic

power, deliberately indebting countries to enhance its geostrategic position, nurture dependence among smaller states, and enroll more actors into its alternative vision for globalization (Brautigam 2020). From this position, critics argue that the BRI is underpinned by unfair and unsustainable lending practices. This characterization is driven by a degree of opacity surrounding the specific terms of debt finance provided by China to participating countries (Hurley, Morris, and Portelance 2019). A lack of transparency around bidding processes, accountability, and dispute resolution (He 2020) fuels a Western narrative that the BRI is based upon predatory lending and that China is weaponizing its capital to challenge US hegemony (Truman 2018). Such a narrative is exemplified by a headline in the *Street Journal* (2018) describing Pakistan as “another belt and road hostage”.

A growing body of literature, however, has started to question this negative narrative, to shed more light on the actual financial agreements and relations underpinning the initiative, as well as its implications for global geopolitics (Lai, Lin, and Sidaway 2020). Eom, Brautigam, and Benabdallah (2018) and the Jubilee Debt Campaign (2018) show that in Africa Chinese lending had played a relatively minor role in the creation of debt distress. Evidence from Hurley, Morris, and Portelance (2019) supports this position, showing that although some BRI countries are at risk of debt distress, the underlying causes of this distress do not include Chinese lending. While there are some cases where BRI projects have created bilateral tensions, the most high-profile being Sri Lanka’s Hambantota Port (Hurley, Morris, and Portelance 2019), according to Brautigam (2020) there is little empirical evidence to support the debt-trap diplomacy narrative. Twillert and Halleck Vega (2023) find evidence of a positive effect of external debt on gross national income of BRI recipients, thus highlighting the investment opportunities that external debt has unlocked for these countries.

Broader research on Chinese foreign investment and aid – financial flows that now overlap with BRI – is also ripe with controversy. In an opinion piece, Naim (2010) describes Chinese international aid as “rogue aid”, with funds being allocated in unsustainable ways to generate new economic opportunities for Chinese firms, access natural resources, and bolster China’s geopolitical standing. Cormier (2022, 27) finds that “less transparent borrowers obtain relatively more Chinese than Western finance” and suggests that China prefers opaque borrowers, and they prefer Chinese finance as it is not conditional on reforms improving transparency. However, Dreher and Fuchs (2015, 988) demonstrate that “while political considerations shape China’s allocation of aid, China does not pay substantially more attention to politics compared to Western donors”. In a study focusing on Chinese state financing in Africa, Custer et al. (2021) show that while foreign policy drives the allocation of China’s Official Development Assistance, other overseas financing is better explained by economic interests.

Analyses of the financial structures and relations of the BRI stress the shared dynamics of Chinese and Western lending. They have shown that BRI projects

are typically underpinned by “traditional financial models” that align with international development standards (Liu, Zhang, and Xiong 2020, 142). While different in terms of the presence of state-owned enterprises and financial institutions (Hurley, Morris, and Portelance 2019), these models share similarities with Western public-private-partnerships, with BRI financing models “redolent of existing practices rather than novel ones” (Summers 2020, 149). A focus on finance can therefore reveal the quasi-paradoxical position of China, as it uses the BRI to provide an alternative to Western developmentalism while simultaneously implementing and supporting the financial practices it is built upon (Klinger and Muldavin 2019). As such, existing literature highlights the need to consider non-Western vs Western financial practices and cautions against treating all Chinese foreign financing as homogeneous.

### ***Credit rating agencies and their biases***

The history of CRAs goes back more than 100 years in the United States. Moody’s was the first rating agency to open its doors in 1909, offering ratings for bonds of railroad companies (Sylla 2002; White 2013). In 1916, Poor’s Publishing Company was established, followed by Standard Statistics Company in 1922, and Fitch in 1924. In 1941, Poor’s Publishing merged with Standards Statistics, to form Standard & Poor’s (S&P).

The first uplift in the status of the three CRAs took place in the 1930s, when ratings entered banking regulation in the US (Sylla, 2002). Banks, for example, were prohibited from investing in “speculative grade” bonds. In 1975, the US Securities and Exchange Commission (SEC) set up the Nationally Recognized Statistical Rating Organizations (NRSROs), thereby cementing the status of the three CRAs as intrinsic points of reference in banking regulation. Since the 1980s and the entrance of capitalist economies into the era of globalized and deregulated financial markets, the three CRAs have expanded their global reach. Moody’s, for example, nowadays provides sovereign ratings to 142 countries, up from 21 in 1986 (Moody’s 2024).

While there are currently more than 70 CRAs around the world (IMF 2010), only S&P, Moody’s, and Fitch are truly global. Their combined global revenue share has consistently exceeded 90% (Securities and Exchange Commission 2018). In 2017, out of the total number of outstanding ratings across all sectors (around 2.1 million), 49% were issued by S&P, 33% by Moody’s, and 14% by Fitch (Securities and Exchange Commission 2018). All three agencies are currently owned by US conglomerates whose broader scope involves ownership and administration of stock market indices, business data analytics, and media, and all are headquartered in New York City (with Fitch having joint headquarters in New York City and London) while also having offices in Hong Kong and Mainland China (Ioannou 2021). Chinese CRAs exist, but their international influence is negligible, in part due to chronic concerns regarding corruption

and moral hazard, as in the case of Dagong, one of the largest Chinese CRAs until 2018, when it was accused of over-rating Chinese issuers and subsequently suspended and taken over by a state-owned investment company (Hornby 2019).

The most important products of CRAs from a macroeconomic perspective are sovereign credit ratings (or “sovereign ratings”), which assess the creditworthiness of national governments. In most cases, sovereign ratings provide a ceiling and a point of reference for the ratings of all other entities in a country, including sub-national governments and companies. As such, these ratings play a major role in macroeconomic stability, interest rate movements, and capital flows (Gande and Parsley 2004; Ioannou 2017; Kim and Wu 2008).

What determines sovereign ratings by CRAs? In their own methodology reports, CRAs unanimously claim to consider fiscal and economic indicators, but also broader institutional and political dimensions (S&P 2015); Moody’s (2019c). Moody’s (2019c), for example, distinguishes among four groups of factors: economic strength, institutions and governance strength, fiscal strength, and susceptibility to event risk. Institutions and governance strength include the quality of legislative and executive institutions and the quality of civil society. Susceptibility to event risk focuses on political and geopolitical risks.

There is a voluminous empirical literature examining the *de facto* determinants of sovereign ratings (see, e.g., Afonso 2003; Afonso, Gomes, and Rother 2007, 2011; Alexe et al. 2003; Cantor and Packer 1996; Ioannou 2016). The most common variables identified as economically and statistically significant include GDP per capita, GDP growth, inflation, fiscal balance, external balance, external debt, default history, public debt, domestic credit, foreign reserves, as well as political variables, such as government effectiveness and political stability.

Existing literature highlights the active role of ideology in the designing of sovereign ratings (Hackworth 2002; Ioannou 2021; Sinclair 1994, 2005). Contrary to the self-portrayal of CRAs as objective technocrats aiming to assess the financial sustainability of rated governments, rating agencies’ recommendations tend to be closely aligned with neoliberal views on economic policy, typically favoring privatizations, market deregulation, and fiscal austerity. Their adverse reaction to the election of an anti-austerity government in Greece in 2015 and their enthusiasm for Argentina’s endorsement of reforms to deregulate its financial sector and cut public spending in 2016 are just two recent examples that testify to this end (for further discussion see Ioannou 2021).

The literature also proves the existence of various behavioral biases in sovereign ratings. First to be documented was a procyclicality bias, whereby CRAs gave many Asian countries including Indonesia, Malaysia, and South Korea overly optimistic ratings (in relation to economic and political fundamentals) prior to the Asian financial crisis of 1997–8 and downgraded them excessively in its aftermath (Ferri, Liu, and Stiglitz 1999). Gartner, Griesbach, and Jung (2011),

Vernazza and Nielsen (2015), and Ioannou (2016) also find a similar procyclicality bias in Europe in the context of the Eurozone crisis of 2010.

Second is a home bias, first documented by Fuchs and Gehring (2017) who demonstrate, based on a sample of 143 countries and nine CRAs, that CRAs tend to assign higher ratings to the countries of their headquarters and to countries culturally close to their home countries. They argue that cultural proximity – and particularly linguistic proximity – implies an easier, more favorable, and optimistic interpretation of information and enhances the level of trust that a sovereign government will repay its debts. Their evidence also suggests that CRAs give higher ratings to countries in which home-country banks hold large risk exposures. This indicates the role of economic in addition to cultural proximity. Yalta and Yalta (2018) and Altdörfer et al. (2019) further corroborate the evidence for home bias at the national level. At the sub-national level, Ioannou, Wójcik, and Pažitka (2021) find evidence of a “financial center bias” whereby CRAs give higher ratings to cities and regions with strong financial center characteristics. In sum, the home that affects CRAs’ behavior, and toward which they tend to be biased, is both the country and the city they come from.

Mixed evidence has emerged on what we can call a geopolitical bias. Fuchs and Gehring (2017) find that geopolitical ties (approximated by vote alignment in the United Nations General Assembly and a country’s share in total US military aid) between the home country of a CRA and the countries the agency rates play little role in shaping ratings. In contrast, Yalta and Yalta (2018), show evidence that countries with the presence of active US military personnel tend to receive more favorable ratings from the big-three CRAs. In their analysis of sub-sovereign ratings, Ioannou, Wójcik, and Pažitka (2021) confirm the results of Yalta and Yalta (2018).

### **Potential BRI bias**

Based on this literature, what can we expect about CRA’s views on BRI? *Ex ante*, it is far from clear whether the agencies’ views on BRI should be positive, negative, or indifferent. Theoretically, it is possible for CRAs to expect a positive impact of the BRI on the recipient economies due to investment in improving the quality of the infrastructure. Unless misplaced on “trophy projects” or “cathedrals in the desert”, infrastructure investment facilitates connectivity and trade and is an essential factor of economic development (World Bank 2009). For example, an improved road network can boost economic growth by reducing transportation costs, while train connections can support more environmentally sustainable development. On the other hand, CRAs could hold a more pessimistic view of BRI due to two groups of factors. First, CRAs may view the participation of countries in BRI as a heuristic that signals growing indebtedness and risk of default of recipient economies. Second, it is

also possible that CRAs hold a geopolitical bias against BRI and its recipients, viewing investment and credit flows from China under the BRI as signs of growing geopolitical dependency on China and the demise of US power and its allies.

A reasonable starting point to explore these questions are CRAs' own declarations. Unfortunately, but important to our analysis, the BRI is to the best of our knowledge never mentioned in the agencies' documents accompanying specific rating changes. This tells us that if the BRI affects rating upgrades or downgrades, CRAs do not advertise it anyway. Nevertheless, CRAs cover the BRI in their general reports discussing global and regional economic trends. In what follows, we review selected documents available from the three CRAs.

CRAs recognize the positive potential of the BRI, but the same documents always discuss the downside risk of increasing indebtedness and credit default risk. The parent company of the S&P rating agency stresses that the success of the BRI is to be determined by its perceived legitimacy in recipient economies and its ability to mobilize private sector money, by setting favorable conditions for further investment (S&P Global 2018). This indicates that there is a self-fulfilling mechanism at work here, whereby domestic and foreign confidence in the success of BRI investments can generate such success, and lack thereof can undermine it. Moody's general reports consider favorable and adverse scenarios for recipient economies. On the one hand, BRI projects are praised for having a clear potential to spur investment, enhance international trade, and boost economic growth, particularly in low-income countries with limited access to external financing (Moody's 2015). But the same report also raises concerns about increases in public debt and implementation risks, due to weak legal and regulatory frameworks, potential lack of political legitimacy and poor administrative capacity. Moody's (2017) reported that on balance they expect positive effects to outweigh negative ones, both for China and for recipient economies. Moody's (2018), however, emphasizes the risks associated with Chinese lending in the context of sub-Saharan Africa, arguing that potential benefits can be substantially compromised due to the lack of requirements for reforms. Put differently, what the report finds lacking is the so-called conditionality in lending and investment, long associated with the practices of Western financial institutions such as the World Bank. This concern ties in with evidence that opacity breeds BRI interactions (Cormier 2022). According to Moody's (2018), such opacity can in the long run discourage further public and private investment.

References to geopolitics are common in CRAs' general reports. Moody's (2019a) takes stock of the development of BRI over the preceding 6 years, explicitly acknowledging the use of BRI by China for geopolitical purposes:



... the BRI has geopolitical consequences. For example, by building links to Pakistan, China contains India and also minimizes China's dependence on trade flows via the Straits of Malacca. Furthermore, Beijing's cheque book diplomacy could potentially pull countries closer to its sphere of influence. There is evidence that this may already have paid dividends, with Cambodia—which counts China as its largest source of foreign direct investment—using its voting powers to undermine ASEAN's [Association of Southeast Asian Nations] position on the South China Sea dispute. (Moody's 2019a, 9)

Fitch (2020, 4) opens a report with a map of “China's Geopolitical Headache”, classifying countries as pro-China, pro-U.S.A., independent, and contested, and highlighting geopolitical flash points. The report discusses the increasingly difficult position of countries trying to rely on both China and the U.S. A. in the face of growing China-U.S.A. tensions. The latter are described as a new “Cold War” with the BRI in the center. As it predicts “US and its allies will step up efforts to stall BRI”, and they “will warn of the risks of participating nations becoming beholden to Beijing financially” but “we expect Beijing to remain staunchly committed to the initiative as a cornerstone of its foreign and economic policies” (6). Moody's (2019b) mentions criticisms about China's threats to other countries' sovereignty as a driving force against the BRI, and their most recent report (Moody's 2023) discusses the BRI as aligned with the objective of increasing China's geopolitical influence.

Overall, the qualitative evidence from CRAs' reports, combined with quantitative evidence from academic literature, underscores the significance of testing CRA's ratings for the impact of the BRI. The geopolitical concerns present in CRAs' reports and the geopolitical bias toward the U.S.A. uncovered in academic studies indicate a possibility of a geopolitical bias of CRAs against the BRI. At the same time, the literature suggests a list of factors that need to be accounted for to distinguish such a bias from other biases as well as from more fundamental economic and political factors affecting sovereign ratings. In what follows, we set out the details of our quantitative approach.

## Data and methods

We use country-level data for 132 countries outside China, for the years 2000–2017. For our analysis, we consider the sovereign ratings provided by Standard and Poor's and Moody's, the two largest CRAs. Existing econometric literature and CRAs' methodology reports suggest only minor differences in how rating agencies operate, hence, the consideration of two CRAs achieves a good balance between representation of the ratings industry and preservation of space for highlighting potential differences in ratings. For all the countries in our sample either Standard and Poor's or Moody's provides a rating, for at least 2 years.

To enable our econometric analysis, we convert the original alphanumerical ratings of Moody's and S&P into a numerical format, ranging from 1 to 21. Every

alphanumerical category is matched with one number. The higher the number, the higher the rating, e.g.  $Aaa = 21$ ,  $Aa1 = 20$  and so on.

Previous literature on credit ratings has either used a fixed effects panel model (e.g. Fuchs and Gehring 2017) or a panel ordered probit model (e.g. Afonso, Gomes, and Rother 2007, 2011; Ioannou, Wójcik, and Pažitka 2021). For our purposes, we use the fixed effects model as our baseline model and apply the panel ordered probit specification as a robustness test. The baseline model is as follows:

$$cr_{it} = \alpha + \beta X_{it-1} + \gamma w_{it-1} + \delta s_{it} + \mathbf{y}_t + \mathbf{u}_i + \varepsilon_{it} \quad (1)$$

where  $cr_{it}$  represents the credit rating variable;  $X_{it}$  is the vector of time-varying control variables;  $w_i$  is the time-varying variable accounting for Chinese investment (including BRI investment);  $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\delta$  are the corresponding sets of constant parameter values;  $s_{it}$  is a dummy that accounts for episodes of sovereign crises;  $\mathbf{y}_t$  stands for year dummies,  $\mathbf{u}_i$  is the country-specific fixed effect; and  $\varepsilon_{it} \sim N(0, 1)$  is the model's random error. In line with CRAs' methods and relevant literature, we employ the following control variables (expected coefficient signs in brackets): real GDP growth (+); fiscal balance (+); inflation (-); unemployment (-); external debt (-); total foreign reserves (+); a composite index of institutional quality, based WGI's indices for corruption, government effectiveness political stability, regulatory quality, rule of law, and voice and accountability (+); and total population (+). Other variables we tested but turned out to be insignificant include current account balance, credit to GDP, population growth, proxies for education, trade openness, and natural resources rents.

One limitation of the fixed effects model is that it does not allow for time-invariant measurements since all country-heterogeneity is captured by the fixed effects. Conversely, this is an advantage of the panel ordered probit model which relies on random effects. Considering this, our probit specification below also contains a dummy for OECD countries and two time-invariant variables, to account for economic and geopolitical biases identified in the previous literature (Fuchs and Gehring 2017; Yalta and Yalta 2018). These include a country's share in US exports, used as a proxy for a country's economic links with the US, and the presence of US military personnel in a country. We expect a positive sign for both variables. Detailed specifications of all variables are listed in Table 1.

Finding accurate data for projects undertaken under the Belt and Road Initiative is a known methodological challenge (He 2020). The most complete dataset to this date is the BRI-Tagged Chinese Official Finance Dataset of the William & Mary's Global Research Institute (Burgess and Custer 2022), a granular dataset with 10,849 projects, covering the period 2000–2017. The dataset builds on the earlier AidData Global Chinese Development Finance Dataset of the same institute (Custer et al. 2021) by providing an explicit tagging of what the authors describe as "BRI-like" projects, i.e. projects that fall under the broader

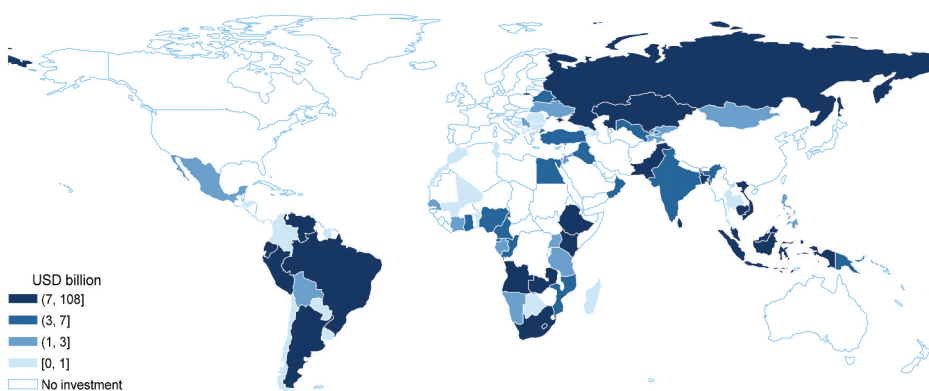
**Table 1.** Variable description and summary statistics.

| Variable   | Description   | Source   | Obs.  | Mean  | St. Dev. | Min    | Max    |
|--|---|--|-------|-------|----------|--------|--------|
| Moody's sovereign ratings                        | end of the year long-term foreign currency ratings; numerically converted in a 1–21 scale, 21 for Aaa, 20 for Aa1, etc.   | Moody's website  | 1,856 | 13.11 | 5.19     | 1.00   | 21.00  |
| Standard and Poor's sovereign ratings            | end of the year long-term foreign currency ratings; numerically converted in a 1–21 scale, 21 for AAA, 20 for AA+, etc.   | Standard and Poor's website                              | 1,923 | 12.76 | 5.18     | 1.00   | 21.00  |
| real GDP growth                                  | Real GDP annual growth rate   | World Development Indicators                             | 2,391 | 3.86  | 3.87     | -15.14 | 25.00  |
| institutions                                     | composite indicator of institutional quality, based on indices for corruption, government effectiveness, political stability, regulatory quality, rule of law, and voice and accountability | World Governance Indicators                              | 2,398 | 0.16  | 0.87     | -1.90  | 1.97   |
| government debt                                  | General government gross debt, % of GDP   | IMF World Economic Outlook                               | 2,341 | 51.00 | 34.74    | 0.49   | 344.32 |
| fiscal balance                                   | General government balance, % of GDP  | IMF World Economic Outlook                               | 2,361 | -1.78 | 5.54     | -35.40 | 43.30  |
| inflation  | Inflation, consumer prices (annual %)   | World Development Indicators                             | 2,266 | 5.28  | 7.44     | -10.07 | 98.22  |
| unemployment                                     | Unemployment, total (% of total labor force) (ILO estimate)   | World Development Indicators                             | 2,340 | 8.02  | 5.86     | 0.14   | 37.25  |
| external debt                                    | Loans from nonresident banks (amount outstanding), % of GDP   | World Bank Financial Development and Structure Dataset   | 2,315 | 21.90 | 34.66    | 0.02   | 388.83 |
| reserves   | total reserves (incl. gold) in USD, % of GDP  | World Development Indicators                             | 2,256 | 17.46 | 16.01    | 0.27   | 119.87 |
| total population                                 | total population in natural logarithm   | World Development Indicators                             | 2,412 | 15.95 | 1.84     | 10.41  | 21.01  |
| oecd dummy                                       | 1 for member states of the OECD   | authors' calculations                                    | 2,412 | 0.28  | 0.45     | 0.00   | 1.00   |
| sovereign crisis dummy                           | 1 for episodes of sovereign crises  | Laeven and Valencia (2018)                               | 2,412 | 0.01  | 0.08     | 0.00   | 1.00   |
| US active military personnel (in nat. logarithm) | No. of active US military personnel as of September 2019 (includes army, navy, marine corps, air force, and coastal guard)  | US Department of Defence                                 | 2,412 | 3.01  | 2.38     | 0.00   | 10.92  |
| share in US's exports                            | country's share in US exports, full sample average  | US Census Bureau   | 2,412 | 0.66  | 2.19     | 0.00   | 20.12  |
| Chinese foreign investment                       | Total Chinese investment, % of recipient country's GDP  | BRI-Tagged Chinese Official Finance Dataset, Version 1.0 | 2,409 | 0.45  | 1.68     | 0.00   | 25.24  |
| BRI-like investment                              | Total Belt and Road Initiative (BRI) investment, % of recipient country's GDP. Numerator includes what is tagged as "BRI-like" and "Vague BRI" in the dataset.                              | BRI-Tagged Chinese Official Finance Dataset, Version 1.0 | 2,409 | 0.28  | 1.23     | 0.00   | 23.02  |

agenda of BRI, even if undertaken prior to the official agreement of a recipient country to join BRI. To bring BRI data to the macro-level, we aggregate projects by country and year.

We run regressions separately for Moody's and S&P. Furthermore, we repeat our analysis for four specifications of Chinese investment: first, we consider total Chinese investment from 2000 to 2017. Second, we use total BRI-like investment, also from 2000 to 2017. Third and fourth, we multiply total Chinese investment and BRI-like investment with a dummy that takes the value of 1 from the year each recipient country signs a BRI agreement with China onwards (we track these dates based on Malik et al. 2021, 140–144). While the BRI was officially launched in 2013, not all countries joined in the same year. Belarus and Cambodia, for example, officially joined BRI in 2013, whereas Poland and Kazakhstan joined in 2015. Interaction of our investment variables with this dummy enables us to distinguish more precisely between total Chinese investment and BRI-like investment following official admission to the BRI. In our regressions, we also tested the dummy independently which, nonetheless, turned out to be statistically insignificant, indicating that just the signing of a BRI agreement does not exercise an autonomous effect on credit ratings. All our variables that express various measures of Chinese investment are taken as a percentage of GDP of the recipient country and are lagged by 1 year.

To complement our analysis, we also run three robustness tests for our models with official BRI investment (fourth specification of the above). First, we re-run our regressions using the panel ordered probit model as our estimation technique instead of using fixed effects. Secondly, we repeat our regressions for the part of our sample that only includes countries with at least one Chinese project of any kind between 2000 and 2017 (this includes 86 of the 132 countries of our sample). As seen in [Figure 1](#), Latin America, sub-Saharan Africa, Middle-East, South Asia, and the countries of the former Soviet Union are the areas toward which most Chinese investment was oriented between 2000 and 2017. Third, we re-run our models using moving averages for BRI investment instead of the original BRI investment time series. Conversion of raw data into moving averages smoothens to some extent the corresponding time-series, and enables inference based on the broader trends observed in the data. In consideration of space constraints, we only report the robustness models for S&P ratings. For transparency and completeness, we also provide some brief in-text commentary over the regression results for Moody's ratings.



**Figure 1.** Total Chinese investment around the world (2000–2017). Source: BRI-Tagged Chinese official finance dataset of the William & Mary’s Global Research Institute and authors’ calculations.

## Results

**Table 1** presents the summary statistics of all variables used in the analysis. As it shows, the average rating for the sample is close to 13 for both agencies, corresponding to BBB and Baa2 for S&P and Moody’s, respectively. This falls within the category that the two agencies identify as “good investment grade”. The table also demonstrates the range of values for Chinese investment (per country and year), from none to 25% of the GDP of the recipient country (highest value corresponds to aggregate Chinese investment in Tajikistan in 2006).

Most countries that receive Chinese investment have non-extreme ratings. According to our dataset, 61% of participating countries, defined as those with at least one “BRI-like” project between 2000 and 2017, held ratings within the “speculative to highly speculative” range in 2017 (Ba1 to B3 in the alphanumeric notation of Moody’s). Twenty-six percent held ratings in the “good to very high investment grade” range (Baa3 to Aa1). Only 13% of the countries had bottom-level ratings (C to Caa1), while no country held a triple-A rating.

**Table 2** presents our econometric results. As displayed in columns 1–4, both total Chinese investment and BRI-like investment are largely insignificant, for both rating agencies. The models are otherwise consistent with our expectations. Institutional quality is highly significant and positive, whereas government debt, unemployment, external debt, and the sovereign crisis dummy are significant and negative. Total population is also significant in the model of Moody’s and is accompanied by a positive sign, as in Fuchs and Gehring (2017). Fiscal balance is positive and significant for S&P ratings.

Columns 5–8 report the same models with the only difference that total Chinese investment and BRI-like investment are now each multiplied with a dummy that is set equal to 1 from the year each recipient country signs

**Table 2.** Econometric models.

|                     | Models with total Chinese and BRI-like investment. |                          |                          |                          | Models with total Chinese and BRI-like investment, following official BRI agreement. |                             |                           |                             | Robustness tests (based on the model of column 8). |   |                            |  |
|---------------------|--|--------------------------|--------------------------|--------------------------|--|-----------------------------|---------------------------|-----------------------------|--|---|----------------------------|--|
|                     | Moody's (1)  | S&P (2)                  | Moody's (3)              | S&P (4)                  | Moody's (5)  | S&P (6)                     | Moody's (7)               | S&P (8)                     | panel ordered probit model (9)                     | Countries with at least 1 Chinese investment project (10) | moving averages (11)       |  |
| Chinese investment  | <b>0.012</b><br>(0.021)                            | <b>-0.003</b><br>(0.018) | <b>-0.005</b><br>(0.030) | <b>-0.001</b><br>(0.028) | <b>-0.151**</b><br>(0.072)   | <b>-0.152***</b><br>(0.051) | <b>-0.177*</b><br>(0.094) | <b>-0.187***</b><br>(0.051) | <b>-0.191***</b><br>(0.055)                        | <b>-0.150***</b><br>(0.047)                               | <b>-0.330**</b><br>(0.150) |  |
| BRI-like investment |  |                          |                          |                          |  |                             |                           |                             |  |   |                            |  |
| real GDP growth     | 0.022<br>(0.019)                                   | 0.014<br>(0.014)         | 0.022<br>(0.019)         | 0.014<br>(0.014)         | 0.021<br>(0.019)   | 0.014<br>(0.014)            | 0.022<br>(0.019)          | 0.014<br>(0.014)            | 0.005<br>(0.013)                                   | 0.000<br>(0.015)  | 0.014<br>(0.014)           |  |
| institutions        | 3.763***<br>(0.724)                                | 3.307***<br>(0.607)      | 3.765***<br>(0.725)      | 3.307***<br>(0.608)      | 3.792***<br>(0.727)  | 3.336***<br>(0.608)         | 3.785***<br>(0.725)       | 3.331***<br>(0.607)         | 3.978***<br>(0.523)                                | 2.803***<br>(0.675)                                       | 3.351***<br>(0.606)        |  |
| government debt     | -0.055***<br>(0.007)                               | -0.048***<br>(0.007)     | -0.055***<br>(0.007)     | -0.049***<br>(0.007)     | -0.055***<br>(0.007)   | -0.048***<br>(0.007)        | -0.055***<br>(0.007)      | -0.048***<br>(0.007)        | -0.048***<br>(0.007)                               | -0.052***<br>(0.011)                                      | -0.048***<br>(0.007)       |  |
| unemployment        | -0.201***<br>(0.041)                               | -0.149***<br>(0.038)     | -0.201***<br>(0.041)     | -0.149***<br>(0.038)     | -0.202***<br>(0.041)   | -0.151***<br>(0.037)        | -0.202***<br>(0.041)      | -0.150***<br>(0.037)        | -0.128***<br>(0.032)                               | -0.031<br>(0.043)   | -0.151***<br>(0.037)       |  |
| fiscal balance      | 0.016<br>(0.013)                                   | 0.048***<br>(0.015)      | 0.016<br>(0.013)         | 0.048***<br>(0.015)      | 0.016<br>(0.013)   | 0.048***<br>(0.015)         | 0.016<br>(0.013)          | 0.048***<br>(0.015)         | 0.051***<br>(0.015)                                | 0.060**<br>(0.024)  | 0.048***<br>(0.015)        |  |
| inflation           | -0.010<br>(0.012)                                  | -0.015<br>(0.010)        | -0.010<br>(0.012)        | -0.015<br>(0.010)        | -0.011<br>(0.012)  | -0.015<br>(0.010)           | -0.010<br>(0.012)         | -0.015<br>(0.010)           | -0.019**<br>(0.008)                                | -0.005<br>(0.010)   | -0.015<br>(0.010)          |  |
| external debt       | -0.007*<br>(0.004)                                 | -0.005*<br>(0.003)       | -0.007*<br>(0.004)       | -0.005*<br>(0.003)       | -0.007*<br>(0.004)   | -0.005*<br>(0.003)          | -0.007*<br>(0.004)        | -0.005*<br>(0.003)          | -0.008***<br>(0.003)                               | -0.011<br>(0.010)   | -0.005*<br>(0.003)         |  |
| reserves            | 0.009<br>(0.009)                                   | 0.009<br>(0.011)         | 0.009<br>(0.009)         | 0.009<br>(0.011)         | 0.009<br>(0.009)   | 0.009<br>(0.011)            | 0.009<br>(0.009)          | 0.009<br>(0.011)            | 0.018<br>(0.012)                                   | 0.036**<br>(0.015)  | 0.009<br>(0.011)           |  |
| total population    | 1.585**<br>(0.765)                                 | 0.427<br>(0.614)         | 1.590**<br>(0.764)       | 0.425<br>(0.614)         | 1.615**<br>(0.766)   | 0.450<br>(0.610)            | 1.610**<br>(0.765)        | 0.442<br>(0.610)            | 0.309*<br>(0.159)                                  | -0.157<br>(1.628)   | 0.458<br>(0.609)           |  |
| sov. crisis dummy   | -2.680**<br>(1.166)                                | -2.148*<br>(1.094)       | -2.685**<br>(1.165)      | -2.147*<br>(1.094)       | -2.684**<br>(1.166)  | -2.147*<br>(1.093)          | -2.684**<br>(1.166)       | -2.145*<br>(1.093)          | -1.902*<br>(0.978)                                 | -0.330<br>(1.337)   | -2.144*<br>(1.093)         |  |
| oecd dummy          |  |                          |                          |                          |  |                             |                           |                             | 2.853***<br>(0.791)                                |   |                            |  |
| active duty         |  |                          |                          |                          |  |                             |                           |                             | 0.311***<br>(0.108)                                |   |                            |  |
| export share        |  |                          |                          |                          |  |                             |                           |                             | 0.137<br>(0.095)                                   |   |                            |  |

(Continued)

Table 2. (Continued).

|                  | Models with total Chinese and BRI-like investment. |                  |                    | Models with total Chinese and BRI-like investment, following official BRI agreement. |                     |                  | Robustness tests (based on the model of column 8). |                  |                                |   |                      |
|------------------|--|------------------|--------------------|--|---------------------|------------------|--|------------------|--------------------------------|---|----------------------|
|                  | Moody's (1)  | S&P (2)          | Moody's (3)        | S&P (4)  | Moody's (5)         | S&P (6)          | Moody's (7)  | S&P (8)          | panel ordered probit model (9) | Countries with at least 1 Chinese investment project (10) | moving averages (11) |
| constant         | -9.648<br>(12.217)                                 | 8.163<br>(9.899) | -9.737<br>(12.208) | 8.186<br>(9.891)   | -10.133<br>(12.232) | 7.783<br>(9.826) | -10.060<br>(12.224)                                | 7.918<br>(9.827) | 4.417***<br>(0.955)            | 14.404<br>(26.677)  | 7.664<br>(9.817)     |
| r2_overall       | 0.505  | 0.666            | 0.504              | 0.665  | 0.505               | 0.670            | 0.504  | 0.669            |                                | 0.464   | 0.672                |
| r2_within        | 0.569  | 0.542            | 0.569              | 0.542  | 0.570               | 0.543            | 0.570  | 0.543            |                                | 0.519   | 0.544                |
| No. of obs.      | 1614   | 1625             | 1614               | 1625   | 1614                | 1625             | 1614   | 1625             |                                | 918   | 1625                 |
| No. of countries | 115  | 112              | 115                | 112  | 115                 | 112              | 115  | 112              |                                | 70  | 112                  |

Time period: 2000–2017. \*, \*\*, and \*\*\* denote significance at the 10%, 5%, and 1% levels respectively; standard errors in parentheses; heteroskedasticity robust errors and fixed effects used in all regressions; all right hand side variables except the sovereign crisis dummy included with a year's lag; year dummies used in all regressions; columns 5–11: Chinese and “BRI-like” investment multiplied with a dummy taking the value 1 from the year each recipient country signs a BRI cooperative agreement or Memorandum of Understanding (MoU) with China onwards; the dummy is otherwise set equal to zero; column 11: moving averages based on 1 lag, 1 current, and 1 forward value, all incorporated with equal weights.

their BRI agreement with China and up until 2017. Once specified as such, both variables turn out to be highly significant and negative. This finding suggests that while CRAs do not have a generic negative predisposition toward Chinese investment per se, their attitude changes once a country officially joins the BRI. Thereafter, CRAs react adversely to all types of Chinese investment, not just those characterized as “BRI-like”.

Columns 9 to 11 report our robustness tests for the model of column 8, that is, the model that uses S&P ratings on the left-hand side and includes the interactive version of “BRI-like” investment on the right-hand side. First, the panel ordered probit specification confirms the negative sign and statistical significance of official BRI investment, at 1% for S&P ratings. Although not reported here, our results also indicate a negative sign and statistical significance at 10% for Moody’s ratings. The model also confirms that the presence of active US military personnel has a positive and statistically significant impact on ratings, a finding in line with prior research on CRAs’ bias toward countries with close geopolitical ties with the US (Fuchs and Gehring 2017; Yalta and Yalta 2018). On the other hand, the share of a country in US exports is statistically insignificant, albeit with a positive sign too.

The statistical significance and negative sign of official BRI investment are also confirmed for the subsample that only includes those countries that have received at least one investment from China during the period covered by the analysis; for Moody’s ratings, on the other hand, statistical significance falls just below the 10% threshold (not reported). Model 11 with moving averages for BRI investment provides further evidence that corroborates our results by showing that CRAs’ view on BRI investment is not driven by short-term fluctuations in Chinese investment (results are also statistically significant for Moody’s at the 10% level). In all robustness models, the signs and significance of control variables are broadly consistent with the main models of columns 1–8.

## Conclusion

While there is a voluminous literature on credit rating agencies (CRAs) and the determinants of sovereign ratings, as well as the literature on the factors and implications of Chinese foreign investment, and the BRI in particular, no studies to date have examined how these two major phenomena relate to each other. To address this research gap, we ask how CRAs view BRI investment, by examining its impact upon the sovereign ratings of recipient economies. Our analysis covers 132 countries and the period of 2000–17 and distinguishes between total Chinese foreign investment and investment on areas associated with the agenda of the BRI, such as infrastructure and trade. It also distinguishes between Chinese foreign investment in general and investment undertaken after formal admission of each recipient country to the BRI.



While CRAs' own reports note that the BRI could have both positive and negative effects on the economies of receiving countries, their ratings reveal a negative outlook. As our econometric analysis shows, larger reliance on BRI investment results in significantly lower sovereign credit ratings, after all other important factors affecting ratings are accounted for. More specifically, our results suggest that while CRAs do not discriminate between different forms of Chinese foreign investment *per se*, they perceive Chinese investment carried out before and after formal admission of recipient countries to the BRI differently, regardless of the specific purpose of such investment. The negative views of S&P are stronger than those of Moody's, reminding us of the subjective nature of ratings, and the potential role of corporate culture (Altdörfer et al. 2019).

Given that our analysis controls for all important fundamental economic and political factors affecting ratings, CRA's negative view of BRI can be considered a bias. We would not classify it as a form of home-bias since our estimations also control for the US-home bias of the leading CRAs. Could the BRI bias be a legacy of their procyclical bias? Recall that CRAs rated down Asian economies affected by the Asian crisis of 1997–8, becoming excessively pessimistic about their prospects (Giovanni, Liu, and Stiglitz 1999). However, it would also be unlikely for procyclical downgrading of Asian economies to persist for decades. In addition, we find the BRI bias beyond Asia. In conclusion, we consider the BRI bias a geopolitical bias, based on CRAs' expectation that BRI recipients become more dependent economically and politically on China, and their institutions are less likely to converge to norms of Western governance, such as democratic institutions and rule of law.

The BRI bias has major implications and their identification represents a contribution to interdisciplinary studies on BRI, whether in the field of international political economy or economic, financial, and political branches of human geography. In effect, CRAs limit the supply of international capital to BRI recipients. As a result, receiving countries face a situation in which attracting more BRI financing increases the cost and lowers the chances of receiving Western financing that follows the guidance of CRAs. This creates a feedback loop whereby BRI financing repels Western funding and increases dependence on more BRI financing, instead of a scenario in which US and its allies compete with Chinese financing seeking to capitalize on investment opportunities in the same receiving economies. To be sure, one could argue that the US and its allies have left many of the countries now relying on the BRI behind in terms of financial support a long time ago. As Cambodia's Prime Minister put bluntly in 2021 "If I didn't rely on China, who would I rely on?" (Sokhorn and Sony 2021). There is a broader history of Western discrimination against and neglect of financing development in countries like Cambodia. What our results show is that CRAs can contribute to this discrimination and in the process contribute to a more politically and financially divided world. Just as CRAs exacerbate the

boom-and-bust cycle, so they may exacerbate the structural shift in the world economy toward a decoupling between the US and Chinese financial spheres of influence. Our findings highlight their role as arbiters of the changing geopolitical order, influencing this very order in the process.

Highlighting the role of CRAs in BRI, our results contribute to economic, financial, and political geography. CRAs certainly need to be added to a list of actors that affect China's integration in the world economy (Klinger and Muldavin 2019). One way to conceptualize their role is to consider them as part of the financial and business services complex in global financial networks (Haberly and Wójcik 2022). According to that framework, they play a significant part in intermediating and regulating relationships among governments, companies, and other financial and business services firms like banks and asset managers. Importantly, they are also embedded in financial centers (mainly New York and London), where they consolidate information from overseas offices (including those in China and countries receiving BRI investments). Another element of the global financial network framework that could be added to the analysis is offshore jurisdictions and their potential use for the registration of financial vehicles in the financing of BRI investments. As a whole, the global financial network could be considered a source of structural power in the global economy, which shapes and constrains the implementation of the BRI (Summers 2020).

Our results, showing the difference between the CRAs' treatment of BRI versus non-BRI projects, also serve as a reminder that Chinese cross-border investment is far from homogenous. In this sense, we contribute to the literature on heterogeneity and differentiation in global finance (Knox-Hayes and Wójcik 2021). To delve deeper into the roots of this heterogeneity, it would be useful to compare similar projects funded by Chinese investment undertaken prior and after a country joined BRI. Alternatively, a comparative case study could focus on comparing similar projects between a BRI participating country and a nonparticipating country.

Although our data end in 2017, our findings also contribute to studies of the decreasing volume and value of BRI investments since 2018. Carmody and Wainwright (2022) explain this decline with regard to the economic and geopolitical contradictions of the BRI, which generate risks for both China and receiving countries. For the latter, this includes potential repayment problems, entrenchment of existing political regimes reducing economic growth, and political backlash against economic and environmental impacts, opacity, and corruption in deals. It is likely that the geopolitical bias of CRAs against BRI reflects such contradictions.

Further research is needed to examine the roots of the BRI bias and its consequences. Improvements in data quality will hopefully allow a more precise identification of the exact aspects of BRI that affect ratings. Such research should, however, remain mindful of the possibility that CRAs' geopolitical bias

is not necessarily based on these agencies' insight into BRI projects and their details but is rather more ideological. Future studies could also extend the analysis beyond S&P and Moody's and include the ratings of Chinese CRAs. Existing research shows, for example, that Chinese CRAs rate Chinese firms much higher than Moody's or S&P (Jiang and Packer 2019). Perhaps, in contrast to US CRAs, they overrate BRI recipients above levels justified by fundamental factors? As is well documented (e.g. Braithwaite and Drahos 2000), today's leading CRAs were created in the early 20th century during the global shift of financial power from the UK to the US, and they rose to power through US-led financial globalization. It is possible that their bias against BRI can hasten the rise of Chinese CRAs and their international influence. Fieldwork research, including interviews with professionals from CRAs and officials in countries receiving BRI investment, can also shed further light on the topic.

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