

Delivering the Belt and Road: Decoding the supply of and demand for Chinese overseas development projects

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Technical Appendix



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Appendix A. Data sources summary

Variable	Coverage period	Source and details
BRI membership	2013-2021	<p>Membership data collected by AidData staff and research assistants. Horigoshi et al., 2022.</p> <p>Data for BRI membership was collected to identify countries that signed a BRI Memorandum of Understanding (谅解备忘录), cooperation agreement (合作协议), cooperation document (合作文件), memorandum of cooperation (合作备忘录), Memorandum of Arrangement for Initiative Cooperation (倡议合作的安排备忘录), or issued a joint statement (联合声明) in support of BRI.</p> <p>Dates of joining were collected from the Council for Foreign Relations "Countries in China's Belt and Road Initiative: Who's In and Who's Out," published by Jennifer Hillman and David Sacks in March 2021.¹ Gaps in CFR coverage, and updating the data through early 2022 was done by using the publication dates from the Belt and Road Portal's announcements of MoUs or cooperation documents as of January 3, 2022.²</p>
Chinese financing	2000-2017	AidData's Global Chinese Development Finance Dataset (Custer et al., 2021; Dreher et al., forthcoming)
Perceptions of leaderships (USA, China, Russia, Germany, France, Japan)	2005-2021	Gallup World Poll (GWP)
Population, total	2000-2021	World Bank's SP.POP.TOTL: Total population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship. The values shown are mid-year estimates.
GDP (current US\$)	2000-2021	World Bank's NY.GDP.MKTP.KD: GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without

¹ <https://www.cfr.org/blog/countries-chinas-belt-and-road-initiative-whos-and-whos-out>

² Liu Meng, "一同中国签订共建'一带一路'合作文件的国家一览" [A list of the countries that have signed cooperation documents with China to jointly build the Belt and Road], 中国一带一路网 [Belt and Road Portal], <https://www.yidaiyilu.gov.cn/xwzx/roll/77298.htm>. Last updated December 9, 2021. Accessed January 3, 2022.

Variable	Coverage period	Source and details
		<p>making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollars. Dollar figures for GDP are converted from domestic currencies using single year official exchange rates. For a few countries where the official exchange rate does not reflect the rate effectively applied to actual foreign exchange transactions, an alternative conversion factor is used.</p>
CRS financing		<p>OECD's Creditor Reporting System (CRS). All financing reported to the OECD-CRS system</p>

Appendix B. BRI tagging methodology

To determine which projects were “BRI-like,” this study used a thematic tagging methodology, irrespective of time period, geography, or membership status. To identify core BRI themes, AidData staff reviewed key speeches and strategic frameworks introducing the Belt and Road Initiative for main foci. This process yielded five core themes: Strengthening policy communication, improving infrastructure connectivity, trade facilitation, enhancing monetary circulation, and people-to-people ties. The AidData team then developed a standardized taxonomy to assign typical project types to these five themes, as well as activities outside the scope of these themes. For example, projects centered on expanding railways were clearly linked to the focus of improving infrastructure. Meanwhile, many small-scale social interventions, such as local water, sanitation, and hygiene projects, were only tangentially related to the core foci detailed in the policy documents, and therefore considered “Non-BRI.”

We then applied tags corresponding with each of the five themes to the project-level data from AidData’s Global Chinese Development Finance Dataset, Version 2.0.³ These tags were applied in three stages: 1) automatic keyword-based coding, 2) manual coding of the tagged projects from the first stage, with the assistance of AidData student researchers, and 3) manual arbitration of all projects and quality assurance. If a project received a code for one or more of the themes, it then received a “BRI” tag. If it did not, or was explicitly focused on an activity that our taxonomy determined was outside the scope of BRI, it received a “Non-BRI” tag. For further information on this process, see the companion methodology document: *BRI-Project Tagging Methodology to Monitor the Historical Focus of Chinese Development Projects*.

³ The tagging schema we used to analyze whether and how the announcement of BRI has changed the supply of PRC development finance is best understood as a value addition that builds upon the foundation of AidData’s Global Chinese Development Finance Dataset, Version 2.0. In this respect, we owe a debt of thanks to the much larger team of people who produced this historical dataset of more than 13,000 overseas development projects financed by the PRC government between 2000 and 2017 (Custer et al., 2021; Dreher et al., 2022). For more information see: <https://www.aiddata.org/data/aiddatas-global-chinese-development-finance-dataset-version-2-0>.

Appendix C. Gallup World Poll imputation and weighting schemes

C.1 Gallup World Poll data on citizen approval/disapproval of foreign powers

In this report, we utilize the Gallup World Poll (GWP) as our barometer of citizen approval of foreign powers. Gallup provides annual public opinion data from 2005 to 2021 on world leadership including China, Russia, the US, France, Germany, and Japan. GWP surveys are designed to be representative of 95 percent of the adult, civilian, non-institutionalized population. Each year essentially represents interviews that were administered at various times within the calendar year in question in each country.

For details on the sampling methodology (nationally representative surveys with standardized questionnaire instruments), see GWP's detailed description on their website at <https://www.gallup.com/services/177797/country-data-setdetails.aspx>. We used the following GWP question: "Do you approve or disapprove of the job performance of the leadership of [insert foreign power]?" Respondents could select approve, disapprove, don't know, or refuse to answer.

We constructed three variables for analysis: approval, coded as '1' if the respondent replied "approve" and '0' otherwise; disapproval, coded as '1' if the respondent replied "disapprove" and '0' otherwise; and neither, coded as '1' if the respondent replied "don't know" and '0' otherwise. We excluded all "refuse to answer" responses.

C.2 Imputation method

The GWP data covers the 2005-2021 period but not without gaps, as our questions of interest are not necessarily asked in all countries and all waves of the poll. In order to avoid distortions due to variations in the selection of countries that answer our questions of interest in any given year, we impute the missing values.

We first impute by replacing any missing value with the last non-missing value, in other words, we fill the country-year panel "forward". Secondly we replace any remaining missing values with the next nonmissing values, filling the country-year panel "backwards". With this procedure we achieve a balanced panel of perceptions of Chinese leadership for 158 countries – 112 of which are LMIC – for the 2005-2021 period⁴.

C.3 Weighting scheme

GWP data includes weights to make the aggregated data statistically representative at the country-level, but does not include any between-country weighting scheme. In order to better represent perceptions while also considering the size of participating countries, we used a population based weighting scheme applied to the data already aggregated at the country-level such that the population share of a specific country with respect to the overall

⁴ Prior to the imputation procedure approximately 45 percent of the data points on opinion of the US, the PRC, Russia, and Germany is missing, while 71 percent of the data for Japan is missing and 77 percent for France.

group that is being analyzed (e.g., region or global) is used as the weighting factor. As a result countries with larger populations (e.g., India, Brazil) have greater weights and countries with a smaller population have smaller weight.

Appendix D. Details on the implementation of the BRI survey

Introduction

Policymakers and practitioners in low- and middle-income countries have a substantial influence over a multitude of sectors, and their decisions and beliefs have a strong impact on the direction of their country's development and relations with other powers. However, we find that there is often very little available information on the beliefs, priorities, and preferences which shape these important decisions. While public opinion surveys are often circulated through the general population, very few examine the beliefs of the elite, and those that do often rely on convenience sampling frames, lacking a clear population of interest and a systematic way to sample them. This makes it incredibly difficult to identify the extent to which the respondent views are generally representative of the individuals whose beliefs we wish to identify.

AidData is a market leader in fielding large-n surveys of policymakers and practitioners in low- and middle- income countries in a consistent and comparable manner. One of the comparative advantages of our surveys is the leverage of a global sampling frame that was initially developed in 2010 and consistently updated to reflect the changes occurring in the sampling frame. Rather than employing a convenience sample that most market research firms use, we at AidData build out our own sampling frame using position maps of institutions throughout target countries to better identify the government agencies and organizations that execute functions relevant to our research questions, followed by the search for contact information related to the individuals holding these positions.

For the *Perceptions of Chinese Overseas Development Survey*, hereafter referred to as the *BRI survey*, our research team updated the institutional position maps and respondent sampling frames to include over 30,000 individuals throughout the countries of Africa. These potential respondents are government and development partner officials, civil society leaders, private sector representatives, parliamentarians, and independent experts from think tanks, universities, and media. In this appendix, we provide an overview of our methodology and describe key attributes of our sampling frame construction, questionnaire design, survey implementation, and data aggregation processes.

Defining the Population of Interest

Although it is impossible to capture the entire population of development policymakers and practitioners, our team takes incredible pains to identify a well-defined and observable population of interest for this survey. We define this population as: those individuals who are knowledgeable about the formulation and implementation of government policies and programs in low- and middle-income countries between 2012 and 2022. We then break down this population into six key stakeholder groups, which are intended to identify the subgroups and how their priorities shift according to their work. These stakeholder groups are: (i) officials from host government agencies; (ii) representatives of development partners operating

in-country; (iii) leaders of civil society organizations and non-governmental organizations; (iv) representatives of private sector organizations, such as commercial associations; (v) independent experts from universities, think tanks, and media; and (vi) national-level parliamentarians.

Creating the Sampling Frame

The cornerstone of AidData's Listening to Leaders sampling frame is the construction and application of Institutional Position Maps (IPMs) that identify as many of the relevant organizations in-country as possible according to a list of different organization types we have constructed for each of the six stakeholder groups. We then identify the key mid- and senior-level positions within each organization to inform subsequent contact searching.

Our research team first identified a list of ideal-type organizations for the six stakeholder groups that can be found across all countries that discharge functions relevant to our questions of interest. For the six stakeholder groups we identify 67 ideal-type organizations, each of which was assigned a numeric code. For example, in the first stakeholder group, which identifies the individuals working within the host government, there are potentially 33 different types of organizations, such as the Ministry of Finance, the Supreme Audit Institution, and the National Statistical Office.

We then create an ideal Institutional Position Map for each country, which functionally identifies the equivalent country-specific institutions and positions that can be mapped back to a list of the ideal-type organizations. The use of IPMs allows us to accommodate each country's unique set of institutions while still facilitating cross-country comparison due to our systematic inclusion criteria.

Once country-specific IPMs are up-to-date, our research team begins to search for the names, titles, and contact information of those individuals working in the mid- to senior-level of the organization. To do this, we utilize publicly available resources to identify the information of potential survey respondents, such as organizational websites and directories, international conference records, Who's Who International, and public profiles on Facebook, LinkedIn, Twitter.

The variability in the degree to which individuals' contact information is publicly available can result in an unbalanced sampling frame. In order to mitigate this risk, our research team has a quota system we use to attempt to identify an ideal number of contacts for each institution type in the IPM. These quotas help the team to ensure the sampling frame includes contacts for each institution type whenever possible.

By clearly defining a population of interest and constructing a master sampling frame that was stratified by country, stakeholder group, and institution type, we managed to overcome one of the most vexing challenges associated with expert panels and opinion leader surveys: the absence of detailed demographic data and the inability to assess the representativeness of findings at various levels. The stratification of our master sampling frame by country,

stakeholder group and institution type makes it possible to generate extremely granular elite survey data that can be published at varying levels of disaggregation without compromising participant confidentiality. It also enables analysis of the factors that influence participation rates, as well as the underlying sources of response bias.

Developing and Testing the Questionnaire

When deciding which questions to ask our sampling frame, we consider first what we are interested in learning about, and second, what perspective our respondents can supply that we cannot get otherwise. AidData staff then finalized research questions of interest for the survey, and designed modules to examine those themes - including perceptions of international actors, and then perceptions of the Belt and Road Initiative. With these themes, we created a series of questions to explore the themes in mind in collaboration with our partners.

Once we had developed a draft version of the questionnaire, we identified a set of external experts with experience working with large-scale surveys to review and give feedback on our instrument. Following these consultations, the research team updated the survey instrument and programmed it in Qualtrics (a respected software program for conducting online surveys). We then identified a set of pre-testers to take the survey using the Qualtrics platform and give feedback on the design to assure a high quality survey experience. After pre-testing the survey, the research team finalized the English questionnaire and had it translated into five additional languages: Arabic, French, Portuguese, Russian, and Spanish. Although the survey in this report was only conducted in the African continent, the AidData team plans to scale this to other countries and regions in future.

Fielding the Survey

The *Perceptions of Chinese Overseas Development Survey* was administered under the direction of Principal Investigator Samantha Custer and Co-Principal Investigator Ana Horigoshi in compliance with the standards set out by the William & Mary Institutional Review Board's Protection of Human Subjects Committee (PHSC). The online survey was fielded between July 22 and August 23, 2022, guided by best practices in survey methodology such as the Weisberg (2005) total survey error approach and the Dillman et al. (2009) tailored design methods. The survey implementation process closely adhered to the approach used in the 2020 Listening to Leaders global survey, with a few key differences.

First, recognizing the advantages to improving the response rate seen in our test of pre-notification messages during the 2020 global survey, we sent pre-notification messages to all potential survey respondents on July 14, 2022. Second, due to the smaller sample size than our global survey and the smaller number of timezones covered for the Africa survey, we did not stagger the distribution of the survey link.

Survey recipients were sent a tailored email invitation to participate that included a unique link to the online questionnaire. Over the course of the survey administration period, survey recipients received two different automated electronic reminders. The day and time of the

reminders were varied to maximize the response rate. Survey participants were able to take the survey in one of six different languages: English, French, Spanish, Portuguese, Russian, and Arabic. Of 30,922 individuals identified in our sampling frame, 21,278 received our email invitation, 861 participated. Tables A-1 and A-2 show the breakdown of members in the sampling frame; survey recipients (or those individuals to whom we successfully emailed our survey invitation); and survey respondents.

Table A-1: Members of the Sampling Frame, Survey Recipients, and Survey Respondents, by Stakeholder Group

Stakeholder Group	Members of the Sampling Frame	Survey Recipients	Survey Respondents
Government	12583 (40.7%)	8397 (39.51%)	375 (43.55%)
Parliament	3799 (12.29%)	2265 (10.66%)	21 (2.44%)
Development Partner	7047 (22.79%)	5386 (25.34%)	108 (12.54%)
NGO/CSO	3141 (10.16%)	2114 (9.95%)	185 (21.49%)
Private Sector	782 (2.53%)	526 (2.47%)	43 (4.99%)
University/Think Tank	3352 (10.84%)	2406 (11.32%)	128 (14.87%)
	214 (0.69%)	160 (0.75%)	1 (0.12%)

Table A-2: Members of the Sampling Frame and Sample of Respondents, by African sub-regions

Sub-regions	Members of the Sampling Frame	Survey Recipients	Survey Respondents
Eastern Africa	11522 (37.27%)	7784 (36.62%)	298 (34.61%)
Middle Africa	3711 (12%)	2278 (10.72%)	116 (13.47%)

Northern Africa	2700 (8.73%)	1858 (8.74%)	50 (5.81%)
Southern Africa	4057 (13.12%)	2962 (13.94%)	94 (10.92%)
Western Africa	8928 (28.88%)	6372 (29.98%)	303 (35.19%)

Appendix E. BRI survey questionnaire

Notes about the survey, usually explaining display logic, will be italicized and in red (like this section). Anywhere where the survey pipes in information, it will be indicated in red font, unitalicized.

Introduction

We would like to begin by asking you a few questions about your professional background.

Q1. Which of the following countries did you work in for the longest time between 2012 and 2022?

Please select only one option.

- [List of 142 countries and independent territories]
- I did not work in any of these countries during this period

Respondents who selected 'I did not work in any of these countries during this period' routed out of the survey; respondent country selection piped into subsequent questions

Q2. In which type of organization did you serve for the longest time between 2012 and 2022?

Please select only one option.

- Government agency, Ministry or Office
- Parliament
- Development Partner
- Non-Governmental Organization or Civil Society Organization
- University, Think Tank or Media
- Private Sector
- Other (Please specify: _____)
- I did not work for any of these types of organizations during this period

Respondents who selected 'I did not work in any of these countries during this period' routed out of the survey

Q3. Please select all the years in which you held this position:

- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018
- 2019
- 2020
- 2021
- 2022

Module 1: General Perceptions of Development Partners

The next few questions are about views of foreign governments who may have supported development projects in **country** during the 2012 and 2022 period. We are interested in your perceptions, which may be based upon your knowledge or experience.

Q4. How active were the following foreign governments in supporting development in **country** between 2012 and 2022?

	Not active at all	Minimally active	Somewhat active	Very active	Don't know/Not sure	Prefer not to say
China						
The US						
Russia						
The UK						
France						
Region-specific route-in						

Region specific route-ins: Japan=East Asia & Pacific, India=South Asia, South Africa=Sub-Saharan Africa, Saudi Arabia=Middle East and Northern Africa, Brazil=Latin America & Caribbean, Germany=Europe, Türkiye (Turkey) = Central Asia.

Respondents who select minimally active, somewhat active, or very active on Q4 for one or more partners will be routed to Q5, respondents who select not active, don't know, or prefer not to say for all partners on Q4 will be routed to Q7.

Q5. You identified the following foreign governments as active in supporting development in **country**. How do these actors typically provide support to your country? *Please select all that apply.*

	Financial assistance (e.g., grants, loans)	Technical assistance or policy advice	Scholarships , training or exchange programs	In-kind support (e.g., food, raw materials, equipment,sup plies)	Non-military security assistance (e.g. policing, peacekeepin g)	Don't know/ Not sure	Prefer not to say
Partners selected in Q4							

Respondents will only evaluate those partners for which they selected minimally active, somewhat active, or very active in Q4

Q6. You identified the following foreign governments as active in supporting development in **country**. Which government is your preferred partner in each area? *You may select up to one answer in each area.*

	Energy, transport, or telecommunications infrastructure?	Health, education, or social protection?	Governance or rule of law?	Natural resource management or environmental protection?
Partners selected in Q4				
None of these partners				
Other (please specify_____)				
Don't know/not sure				
Prefer not to say				

Respondents will only evaluate those partners for which they selected minimally active, somewhat active, or very active in Q4

Q7. In your opinion, which of the following countries, if any, would be the best model for the future development of **country**?

Please select only one option.

- China
- The US
- Russia
- France
- The UK
- **Region-specific route-in**
- We should follow our own country's model
- None of these / There is no role model
- Don't know / not sure
- Prefer not to say

For Q7, each geographic region will have a region-specific route-in that is most applicable: Japan=East Asia & Pacific, India=South Asia, South Africa=Sub-Saharan Africa, Saudi Arabia=Middle East and Northern Africa, Brazil=Latin America & Caribbean, Germany=Europe, Türkiye (Turkey) = Central Asia.

Q8. Do you generally approve or disapprove of the job performance of the leadership of the following countries?

	Approve	Neither approve or disapprove	Disapprove	Don't know /not sure	Prefer not to say
China					
The US					
Russia					
The UK					
France					
Region-specific route-in					

For Q8, each geographic region will have a region-specific route-in that is most applicable: Japan=East Asia & Pacific, India=South Asia, South Africa=Sub-Saharan Africa, Saudi Arabia=Middle East and Northern Africa, Brazil=Latin America & Caribbean, Germany=Europe, Türkiye (Turkey) = Central Asia.

Respondents who selected not active, don't know, or prefer not to say for China on Q4 will skip Module 2 and be routed directly to Q18 in Module 3. All others will be asked to complete Module 2, beginning with Q9

Module 2: Awareness of Chinese development projects

The next few questions are about your views of development projects supported by the Chinese government in **country** during the 2012 and 2022 period. We are interested in your perceptions, which may be based upon your knowledge or experience.

Q9. What types of development projects does the Chinese government typically support in **country**? *Select all that apply.*

- Transportation infrastructure (e.g., support to roads, railways, ports)
- Digital telecommunications (e.g., support to mobile, fiber-optic networks, Internet, satellite)
- Equipment or buildings for government agencies
- Education, health, sports, or culture (e.g., hospitals, schools, stadiums, cultural centers)
- Energy, industry, or mining (e.g., power plants, gas pipelines, natural resources)
- Humanitarian assistance (e.g., disaster or other emergency relief)
- People-to-people exchange, technical assistance, or training (e.g., study abroad, language learning/teaching)
- General support to the national government's budget
- Agriculture, fishing, forestry

- Governance or public sector management
- Debt relief or forgiveness
- Other (please specify _____)
- None of the above
- Don't know / not sure
- Prefer not to say

Q10. How has the Chinese government's support to development projects in **country** changed, if at all, between 2012 and 2022?

	Much more	Somewhat more	No impact / Stayed the same	Somewhat less	Much less	Don't know / not sure	Prefer not to say
Number of projects							
Average amount of financing per project							
Generosity of repayment terms							
Inclusion of specific policy conditions							
Use of Chinese laborers, suppliers, or firms to implement							
Access to technical assistance or advice from Chinese experts							
Inclusion of local partners in design or implementation							

Q11. What do you think is the single most important benefit for **country** in partnering with the Chinese government, compared to other foreign governments, on development projects? *Please select up to three.*

- Provides financing on more favorable financial terms (e.g., lower interest rates, longer repayment schedules)
- Provides financing with fewer economic, political, or environmental conditions
- Promotes greater transparency to encourage coordination or collective action
- Supports projects more closely aligned with national development priorities
- Supplies higher-quality technical expertise to design or implement projects
- Completes projects with fewer delays

- Completes higher-quality projects with longer-lasting benefits
- Builds more local capacity to sustain projects and project benefits
- Other (please specify _____)
- None of the above
- Don't know / not sure
- Prefer not to say

If more than one answer is selected in Q11, respondents receive Q11A as a follow up.

Q11. A. Please rank the benefits you selected in order of importance.

- **Route-in previous selections from Q11**

If more than one answer is selected in Q12, respondents receive Q12A as a follow up.

Q12. What do you think are the biggest drawbacks for **country** in partnering with the Chinese government, compared to other foreign governments, on development projects? *Please select up to three.*

- Provides financing on less favorable financial terms (e.g., higher interest rates, shorter repayment schedules)
- Provides financing with greater economic, political, or environmental conditions
- Discourages greater transparency in reporting on project finances, terms, or progress
- Invests in projects that are less well aligned with our priorities
- Supplies lower quality technical expertise to design or implement projects
- Completes projects less quickly with more delays
- Completes projects with lower quality end results that are not durable
- Builds less capacity in local partners to sustain the project in future
- Other (please specify _____)
- None of the above
- Don't know / not sure
- Prefer not to say

Q12. A. Please rank the options you selected in order of biggest drawbacks.

- **Route-in previous selections from Q12**

Q13. Has Chinese government support to development projects in **country** made things better, worse, or had no impact on your economy in the following areas?

	Much worse	Somewhat worse	No impact / Stayed the same	Somewhat better	Much better	Don't know / not sure	Prefer not to say
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Jobs for local workers							
Vocational training or education opportunities							
Access to capital to start or grow businesses							
Technology or expertise to enter new sectors							
Trade or tourism revenues							
Standard of living							
Ease of movement for people or goods							

Q14. Has Chinese government support to development projects in **country** made things better, worse, or had no impact on the environment in the following areas?

	Much worse	Somewhat worse	No impact / Stayed the same	Somewhat better	Much better	Don't know / not sure	Prefer not to say
Level of pollution (e.g., air, water)							
Protection of wildlife, forests, and oceans							
Sustainable use of natural resources							
Vulnerability to climate change							
Preparedness for natural disasters							

Q15. Has Chinese government support to development projects in **country** made things better, worse, or had no impact on your country's governance in the following areas?

	Much worse	Somewhat worse	No impact / Stayed the same	Somewhat better	Much better	Don't know / not sure	Prefer not to say
Level of crime							
Level of corruption							
Access to quality public services							
Media freedom							
Access to justice (e.g., a fair trial)							
Ability to register and participate in civic groups							
Level of social unrest, protests, or riots							

Q16. In what ways, if any, has the Chinese government supported in **country** in COVID-19 response, recovery or preparedness for future pandemics?

- Donation of vaccines
- Donation of personal protective equipment (e.g., masks, face shields)
- Donation of other medical supplies or equipment for hospitals/clinics
- Selling vaccines, personal protective equipment or other medical supplies
- Provision of Chinese medical teams
- Provision of technical assistance or training for local health professionals
- Financing to support vaccine production and distribution in country
- Canceling debts or easing loan repayment terms
- Other (please specify _____)
- The Chinese government did not provide any assistance related to COVID-19
- Don't know / not sure
- Prefer not to say

Q17. In light of the Chinese government's response to the COVID-19 pandemic in **country**, do you view China as a development partner more positively, more negatively or the same as before?

- Much more positively
- Somewhat more positively
- Same as before
- Somewhat more negatively
- Much more negatively

- Don't know / not sure
- Prefer not to say

Module 3: Belt and Road Initiative

The next few questions are about your views of China's Belt and Road Initiative (sometimes called the One Belt, One Road Initiative or Silk Road Economic Belt) in **country**. We are interested in your perceptions, which may be based upon your knowledge or experience.

Q18. To your knowledge, has **country** joined China's Belt and Road Initiative (BRI)?

- Yes
- No
- Don't know / not sure
- Prefer not to say

Q19. Are there any additional ways that you would describe BRI in your own words?

- **Respondents write-in answers here.**

Q20. Which of the following statements best describes the Belt and Road Initiative? *Please select only one answer.*

- It is how the Chinese government describes its vision for partnering with other countries on economic and development issues
- It is the name of the Chinese government's overseas development program
- It is an advertising or marketing campaign to promote development projects financed by the Chinese government
- It is an development model that countries can adopt to improve their prosperity
- It is a political coalition that countries can join to amplify their voices
- It is a global cooperation mechanism for participating countries to work together on economic or development issues
- It is an initiative to solve China's domestic economic problems (e.g., excess supply of industrial capacity relative to domestic demand, excess foreign currency reserves)
- None of these statements describe BRI
- Don't know / not sure
- Prefer not to say

Q21. Which of the following do you consider to be a BRI project? *Select all that apply.*

- Supplying customs inspection equipment or training to facilitate cross-border trade
- Establishing joint disaster monitoring networks
- Building road, rail, or other transportation infrastructure
- Improving telecommunication network connectivity
- Expanding oil or gas pipeline networks
- Building a hospital, school, or government ministry
- Donating equipment (e.g., computers, vehicles) to a government ministry

- None of the above
- Don't know / not sure
- Prefer not to say

Q22. Which of the following do you consider to be a BRI project? *Select all that apply.*

- Establishing special economic zones
- Conducting bilateral currency swaps (i.e., allows two countries to exchange currencies at a fixed rate)
- Training financial regulators or investigators
- Building industrial parks
- Providing general budget support or balance of payments support
- Forgiving debt or easing loan repayment terms
- Supplying training or equipment to boost agricultural production for export
- None of the above
- Don't know / not sure
- Prefer not to say

Q23. Which of the following do you consider to be a BRI project? *Select all that apply.*

- Providing scholarships for students or professionals to study abroad in China
- Facilitating cultural or sports exchange programs
- Supplying teachers or salaries to support Chinese language teaching in host country
- Donating health equipment or medicine to a local clinic or hospital
- Donating food or other humanitarian assistance in an emergency situation
- Building wells to facilitate community access to potable water
- Conducting joint research projects between a Chinese and host country university
- None of the above
- Other (please specify _____)
- Don't know / not sure
- Prefer not to say

Q24. How would you compare BRI projects to other development projects financed by the Chinese government in **country** in the following areas?

	Much more	Somewhat more	Neither more or less	Somewhat less	Much less	Don't know / not sure	Prefer not to say
Average amount of financing per project							
Generosity of repayment terms							
Inclusion of							

specific policy conditions							
Access to technical assistance or advice from Chinese experts							
Use of Chinese laborers, suppliers, or firms to implement							
Inclusion of local partners in project design or implementation							
Degree of publicity in Chinese and local media							

Q25. To the best of your knowledge, how many BRI projects has the Chinese government supported in **country** to date? *Please select only one answer.*

- More than 100
- 50-100
- 25-50
- 11-25
- 6-10
- 1-5
- None
- Don't know / not sure
- Prefer not to answer

Q26. In what ways has the COVID-19 pandemic affected BRI projects in **country** from January 2020 to the present day? *Please select all that apply.*

- Projects have been postponed or suspended indefinitely
- Projects were redesigned to accommodate travel or meeting restrictions
- Projects have been canceled
- Projects were not officially postponed, but still experienced delays in implementation
- The borrowing terms of loans previously issued by the Chinese government were renegotiated
- The amount of Chinese government financing disbursed to support existing projects increased
- The amount of Chinese government financing committed to support new projects decreased
- None of the above

- Other (please specify _____)
- Don't know / not sure
- Prefer not to say

Q27. Please select the sector in which you have worked for the longest time period between 2012 and 2022. *If you worked across multiple areas, please select one area you are most familiar with.*

- Agriculture, Fishing and Forestry
- Economic Policy
- Education
- Energy and Mining
- Environment and Natural Resource Management
- Finance
- Health
- Human Development and Gender
- Industry, Trade and Services
- Information and Communications Technology
- Labor Market Policy and Programs
- Nutrition and Food Security
- Development
- Good Governance and Rule of Law
- Public Sector Management
- Rural Development
- Social Development and Protection
- Trade
- Transportation
- Urban Development
- Water, Sewage and Waste Management
- Foreign Policy
- Other (Please indicate): _____

28. Are you willing to participate in a future survey or interview? We would like to learn from your updated perspectives on developments in **country** and elsewhere.

- Yes, you can contact me at the same email address.
- Yes, you can contact me at the following email address:

- No

Appendix F. Weighting scheme for Survey Aggregate Statistics – Inverse Probability Weight

The response rate to the *Perceptions of Chinese Overseas Development Survey* was 4.1 percent. In light of imperfect information about the representativeness of our sample vis-à-vis the sampling frame (i.e., the population of interest), we use a weighting scheme to mitigate the potential for bias in our results. Consistent with the 2018 and 2021 Listening to Leaders publications, we employ non-response weights to account for unit non-response (or survey non-response) and to redress potential bias deriving from it. To generate non-response weights, we took the following steps. First, we estimated the probability of survey response using a logistic regression. For all members of our sampling frame, we have information on their gender, country, and stakeholder group (e.g., host government officials, development partners). We used all these predictors to estimate the probability of survey response for each member of the sampling frame (as each factor was significant in predicting survey response). Then, we took the inverse of the estimated probability to arrive at the final nonresponse weights used for our analysis. Additionally, we cap the weights at two standard deviations from the mean in order to avoid excessively large weights. This weighting scheme is the standard method used in AidData surveys.

Appendix G. Statistical analysis: Model and results

As part of the analysis on the effect of BRI on perceptions of Chinese leadership we test two Difference-in-Differences (DiD) models, which are quasi-experimental methods to estimate treatment effects by comparing change (difference) in the differences in observed outcomes between treatment and control groups, across pre-treatment and post-treatment periods.

The first model, a simple DiD, tests the effect of treatment (being a BRI member); time of treatment (BRI announcement in 2013); and the interaction of these two variables. The second model, a generalized DiD with multiple treatment periods, includes country and year fixed effects and an interaction variable that measures the effect of treatment between the control and treatment groups in the post-treatment period. This second model is more flexible as it allows for the intercept to vary per country and different timing of treatment across countries. In simpler terms, the first model tests the effect of BRI announcement in countries that eventually joined BRI on the outcome variable — approval or disapproval of Chinese leadership – while the second model tests the effect of the timing of each country becoming a BRI member on the outcome variable. The first model follows equation 1 below, and the second model follows equation 2.

Equation 1 :

$$y_{it} = \beta_0 + \beta_1 P_t + \beta_2 T_i + \beta_3 (P_t * T_i) + u_{it}$$

Equation 2 :

$$y_{it} = \beta_0 + \alpha_i + \delta_t + \beta_3 (P_t * T_i) + u_{it}$$

The results for Model 1 with approval and disapproval of Chinese leadership are presented below. We find that the treatment, being a BRI member, regardless of the timing does have the expected effect on public opinion of Chinese leadership. Being a BRI member is associated with higher approval and lower disapproval. However, the interaction between treatment and the post-treatment time variables is, surprisingly, negative and significant for approval. This means that being a BRI-member in the post-2013 period actually has a negative effect on approval in comparison with the control group. The results suggest that BRI members in general present higher approval rates which decline after BRI's announcement. The effect on disapproval, however, is as expected, with a dampening of disapproval post-BRI-announcement for countries that become BRI members.

Differences-in-differences: Model 1

	<i>Dependent variable:</i>	
	Approval of CH	Disapproval of CH
	(1)	(2)
Treatment = BRI-member	13.314*** (1.233)	-4.244*** (0.867)
Time = Post-2013	-1.565 (1.732)	5.649*** (1.218)
DiD = BRI-member X post-2013	-4.300** (1.910)	-3.515*** (1.343)
Constant	34.294*** (1.119)	26.394*** (0.787)
Observations	2,429	2,429
R ²	0.078	0.043
Adjusted R ²	0.076	0.042
Residual Std. Error (df = 2425)	17.728	12.470
F Statistic (df = 3; 2425)	68.009***	36.756***

*p<0.1; **p<0.05; ***p<0.01

Nevertheless, Model 2, which is better adapted for panel data analysis, shows not only an insignificant effect of the treatment in the post-treatment period (after a country joins BRI) but also the opposite sign than one would expect. Jointly we interpret these results as lacking evidence of a positive effect of BRI-membership on perceptions of Chinese leadership.

Differences-in-differences: Model 2

	<i>Dependent variable:</i>	
	Approval of CH	Disapproval of CH
	(1)	(2)
DiD = BRI-member X post-BRI membership signing	-0.649 (0.741)	0.896 (0.656)
Constant	42.550*** (1.920)	46.529*** (1.700)
Observations	2,429	2,429
R ²	0.813	0.692
Adjusted R ²	0.802	0.674
Residual Std. Error (df = 2295)	8.209	7.270
F Statistic (df = 133; 2295)	74.929***	38.829***

*p<0.1; **p<0.05; ***p<0.01

Appendix H. Sub-regional division of Africa

Sub-region (Regions as used to be in the World Bank Development Indicators - legacy)	Countries and autonomous territories
Eastern Africa	Burundi Comoros Djibouti Eritrea Ethiopia Kenya Madagascar Malawi Mauritius Mozambique Puntland Rwanda Somalia Somaliland Tanzania Uganda Zambia Zanzibar Zimbabwe
Middle Africa	Angola Cameroon Central African Republic Chad Democratic Republic of the Congo Equatorial Guinea Gabon Republic of the Congo Sao Tome and Principe
Northern Africa	Egypt Libya Morocco South Sudan Sudan Tunisia
Southern Africa	Botswana Eswatini (Swaziland) Lesotho Namibia

Sub-region (Regions as used to be in the World Bank Development Indicators - legacy)	Countries and autonomous territories
	South Africa
Western Africa	Benin Burkina Faso Cape Verde Côte d'Ivoire Gambia Ghana Guinea Guinea-Bissau Liberia Mali Mauritania Niger Nigeria Senegal Sierra Leone Togo

About AidData

AidData is a research lab at William & Mary's Global Research Institute. We equip policymakers and practitioners with better evidence to improve how sustainable development investments are targeted, monitored, and evaluated. We use rigorous methods, cutting-edge tools and granular data to answer the question: who is doing what, where, for whom, and to what effect?

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