BRI Project Tagging Methodology to Monitor the Historical Focus of Chinese Development Projects

Bryan Burgess and Samantha Custer

Version 1.0

Table of Contents

1. Introduction

With two key speeches in 2013, Chinese President Xi Jinping signaled a sea change in the foreign policy of the People's Republic of China (PRC). In September 2013, President Xi proposed the formation of the Silk Road Economic Belt from Beijing across Central Asia ("One Belt") with a speech at Kazakhstan's Nazarbayev University. In October of that same year, he spoke to the Indonesian Parliament about establishing a Maritime Silk Road across Southeast Asia ("One Road"). These two speeches announced what would become the PRC's "One Belt One Road" Initiative, or the Belt and Road Initiative (BRI).

The BRI was widely heralded as an inflection point in the PRC's overseas development strategy, on par with the 1999 announcement of the "Going Out" policy (Wang, 2016). The two BRI speeches promised a new era in the PRC's engagement with the world, with Beijing eyeing a global leadership role for itself in bankrolling hard infrastructure projects to improve physical connectivities between nations (e.g., roads, rails, ports, airports), as well as fostering digital and policy integration (e.g., telecommunications, trade facilitation), and people-to-people ties (e.g., scholarships, exchanges).

As the volume of its overseas investments have quantifiably grown over the last decade, BRI has become synonymous in both media coverage and policy discourse with the PRC's expanding global footprint. Yet, it is unclear whether BRI did indeed represent a fundamental shift in the PRC's investment portfolio in terms of what and whom it funded, as opposed to serving as more of a way to package or (re)package what it was already doing. In other words, should we view BRI as a pivot or change in strategic direction for the PRC's overseas development program, a rallying cry to crowd-in resources to double down on what it was already doing, or merely an exercise in rebranding its efforts in a more attractive offering?

For all the public scrutiny and policy discussion swirling around the BRI, there is a surprising lack of hard data to accurately assess whether and how it has altered the PRC's overseas development finance program in substantive ways. For member countries, what are the actual benefits of joining the BRI in differential levels of financing, types of projects, and terms? For non-member countries, what are the

drawbacks or penalties for being a hold-out? For great powers that seek to compete with, or counter, the PRC's growing global influence, does BRI represent something fundamentally new to outmaneuver or more of what has come before, but with shinier packaging? How should Beijing assess its success in aligning its rhetoric with how the PRC manages its extensive development finance portfolio?

One way to answer these questions is to examine whether and to what extent there has been a change in the PRC's revealed priorities—not only what Beijing says it wants to fund, but also how this translates into actual funded projects—before and after the announcement of BRI in 2013. Historically, this has been challenging for two reasons. First, the opacity of the PRC's investments has traditionally made it difficult to access project-level data on historical Chinese development projects. Fortunately, this is an area where AidData—a research lab at William & Mary's Global Research Institute—has made important strides to produce the world's most comprehensive project-level dataset on Chinese official finance. Second, there is no consensus and substantial confusion over what constitutes BRI at a strategic level, as well as in terms of discrete project-level investments.

Previous efforts to measure BRI funding have employed various proxy measures to begin to answer this question: (i) using 2013 as a global cut point to compare the PRC's development program before and after the announcement of BRI (Malik et al., 2021); (ii) using a country's signing of a BRI Memorandum of Understanding to compare the PRC's development projects before and after a country's ascends into membership (Boston University, 2020); (iii) limiting assessments to specific "BRI Corridor" countries after 2013 (Bandiera and Tsiropoulos, 2019); or (iv) examining infrastructure versus non-infrastructure projects to investigate financing shifts (Malik et al., 2021).

Each of these approaches has its merits, but all are limited. Focusing only on the "hard" infrastructure sectors in BRI ignores the parts of the strategy that emphasize softer people-to-people ties or other forms of policy integration that are also supposedly part of this initiative. Using the 2013 announcement of BRI or the signing dates of MOUs potentially ignores the possibility that Beijing was already investing in areas that are now included under the BRI banner.

In this methodology document, AidData introduces a systematic way of leveraging our historical Chinese official finance dataset to tag projects—irrespective of time period, geography or membership status—that are "BRI-like," in that they correspond to clearly identified thematic foci laid out in key speeches and strategic frameworks introducing the Belt and Road Initiative to the world. The tagging schema presented in this document is 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., forthcoming).[1]

This project was made possible with funding from a buy-in to a USAID/DDI/ITR Higher Education Solutions Network (HESN) cooperative agreement (AID-A-12-00096). This methodology has been applied to AidData's database of Chinese government-financed overseas development projects over nearly two decades in a companion dataset that is available for download via aiddata.org to support future research on the BRI. In an early use case, this data has been incorporated into a new AidData publication, "Delivering the Belt and Road," to assess whether and how Beijing's overseas development program has changed with the advent of BRI in terms of revealed funding priorities, along with the expectations and experiences of partner countries in the Global South.

The remainder of this document is organized as follows: an overview of the methodology (Section 2), conceptualizing key thematic foci of BRI (Section 3), and operationalizing a BRI tagging schema for historical Chinese development projects (Section 4). Additional information on the structure of the accompanying datasets are included in the ReadMe file.

2.   Methodology Overview

In this section, we provide an overview of the process and building blocks to create a BRI-project tagging methodology to monitor the historical focus of PRC-financed

development projects. This process included the following stages: (i) conceptualization and identification of the key thematic foci of BRI, as articulated in official documents and speeches by senior Chinese government leaders; (ii) developing a standardized taxonomy to cross-walk the types of projects, by activity, captured in our historical database of Chinese state-financed overseas development project to the thematic foci of BRI; and (iii) assigning a code to each project to capture which areas of BRI activity it encompasses (if applicable).

2.1 Stage One: Identifying Thematic Foci of BRI

Chinese President Xi Jinping's 2013 speeches specified five key themes underpinning BRI: Strengthening Policy Communication, Improving Infrastructure Connectivity, Promoting Trade Facilitation, Enhancing Monetary Circulation, and promoting People-to-People ties. Moreover, Xi gave examples of specific activities that the PRC planned to do in support of each of those five areas. We then combed through additional key BRI policy documents to identify other explicitly-mentioned activities to determine the breadth of the five thematic areas.[2] Section 3 provides further discussion of the identified thematic foci from this document review.

2.2 Stage Two: Developing a Standardized Taxonomy

The identified BRI themes were then mapped to a broader (while not exhaustive) list of typical Chinese aid and investment activities as part of standardized taxonomy to determine which types of Chinese state-financed development projects projects should be considered "BRI like" (i.e., consistent with the stated mandate and scope of BRI as defined by Beijing). The purpose of this standardized taxonomy is that it allows one to take a longer-term historical view and compare financing for projects that are substantively BRI-like in their intent, regardless of when they occurred or whether they involved a BRI member country. This effectively removes the noise of 'branding' from the determination of what is or is not a BRI-like project. Also, while infrastructure is a prominent part of BRI, a closer examination of the initiative's mandate clearly reveals that China is investing in a set of activities much broader than infrastructure that one would miss by looking at this sector alone. See Section 3 for more information.

---

[2] Note: These documents are pre-"recalibration" of BRI, due to few data sources being available with post-2018 coverage. For more on recalibration, see: https://www.nbr.org/publication/a-guide-to-the-belt-and-road-initiative/

Drawing on AidData's previous Activity Coding Scheme, the activity mapping taxonomy draws upon the specific activity taking place in a given project, via project title and project description, rather than the sector or year or other data indicators. Through this process, 116 different project types were mapped to BRI or Non-BRI areas, which was then translated into a set of project tags: the five thematic areas (which then rolled up into a binary BRI tag based on the positive presence of any of them) and "Non-BRI".

2.3 Assigning Codes at the Project-Level

The rest of this document details the identification of BRI activities and the application of the tagging schema using a semi-automated approach (blending human- and machine-coding) to balance precision and scalability. Given the high volume of historical Chinese overseas development projects (13,000+) in the AidData Global Chinese Global Development Finance dataset, we knew that it would be important both in this pilot, but also for future scalability to examine the extent to which we could utilize automated or semi-automated approaches to operationalize tagging. With this in mind, we developed a series of keywords and scalable queries to road-test auto-coding of the tags. In practice, due to the complexity of project descriptions, we found that machine applications generated "clean" results for 40 percent of the data, typically the more straightforward cases. For the remaining 60 percent of projects, we used a double-blind review and arbitration process to adjudicate the results and determine the appropriate tag. Section 4 provides further discussion of this process.

3.   Identifying Key Thematic Foci for BRI

In this section, we provide an overview of the primary source documents consulted in stage one of our methodology development to conceptualize and identify the key thematic foci of BRI, as articulated in official documents and speeches by senior Chinese government leaders. This includes the following documents: (i) President Xi's 2013 speech proposing formation of the Silk Road Economic Belt with Central Asian countries and the March 2015 Ministry of Foreign Affairs (MFA) Action Plan (section 3.1); (ii) President Xi's 2013 speech proposing the formation of the Maritime Silk Road with Southeast Asian countries (section 3.2); and (iii) additional BRI action plans (section

3.3). We conclude with a discussion of supplemental activities included (section 3.4) and excluded (section 3.5) from our BRI thematic areas.

3.1 Key BRI Thematic Areas as Detailed in Xi Jinping's 2013 Speech Proposing the Formation of the Silk Road Economic Belt ("Silk Road") with Central Asian Countries

In Table 1, we break down five key themes underpinning BRI within President Xi's 2013 Silk Road speech (China MoFA, 2013), categorized as themes S1-S5. Illustrative activities associated with these themes were gleaned from President Xi's speech, the March 2015 MFA Action Plan on the Belt and Road Initiative (China MoFA, 2015), or other related action plans issued by Chinese government ministries.

Table 1. Key BRI Thematic Areas Identified from President Xi's Silk Road Speech

Silk Road Area #	Key Phrase	Description	Illustrative Activities
S1	Strengthen Policy Communication	Countries in the region can communicate with each other on economic development strategies, and make plans and measures for regional cooperation through consultations.	- Intergovernmental policy exchange and communication mechanisms; - Policy coordination measures (across all sectors); - Joint policy support for large-scale projects; - Mechanisms for cooperation along marine ecological corridors; - Joint monitoring, evaluation, preservation and restoration of the health of mangroves, sea-grass beds, coral reefs, island ecosystems and coastal wetlands; - Cooperation mechanisms for addressing marine pollution, marine litter and ocean acidification, and in red tide monitoring and pollution emergency responses; 21st Century Maritime Silk Road Blue Carbon Program to monitor coastal and ocean blue carbon ecosystems, develop technical standards and promote research on carbon sinks, launch the 21st Century Maritime Silk Road Blue Carbon Report, and to establish an international Blue Carbon forum and cooperation mechanism;

			• Cooperation or technical assistance in maritime public services, marine rescue, marine security, maritime spatial planning, joint search and rescue missions, IOC South China Sea Tsunami Advisory Center (SCSTAC)
S2	Improve Road (Infrastructure) Connectivity	To open up the transportation channel from the Pacific to the Baltic Sea and to gradually form a transportation network that connects East Asia, West Asia, and South Asia. (Includes ports, roads, railways as well as power plants, telecommunications networks).	• Standardization projects, including "standardization for connectivity" projects in the field of telecommunications and electronic equipment; • Promoting standard transport rules and connectivity; • Port construction and improvement; • Aviation infrastructure improvement; • Connectivity and security of oil and gas pipelines, power supply networks; • Promoting maritime connectivity, maritime transport, maritime information infrastructure and networks, developing Arctic affairs through identifying and improving transport conditions; • Improving shipping service networks, regional shipping centers, constructing ports and forging port alliances, constructing submarine cables
S3	Promote Trade Facilitation	All the parties should discuss the issues concerning trade and investment facilitation and make appropriate arrangements.	• Customs cooperation and capacity improvement; • WTO Trade Agreement implementation; • Expand trading areas, trade structure, explore growth areas, promote trade balance; • Eliminate investment barriers, push forward negotiations on bilateral investment protection and double taxation avoidance agreements; • Deepen cooperation in agriculture, forestry, animal husbandry and fisheries, agricultural processing, desalination, ocean engineering technology, environmental protection, marine tourism and other fields; • Increase cooperation in the exploration and development of coal, oil, gas, metal minerals and other conventional energy sources; advance cooperation in hydropower, nuclear power, wind power, solar power and other clean, renewable energy sources; • Building industrial parks; • Promote investment in China; • Conducting joint surveys and developing inventories and banks for marine resources, cooperation for marine technologies; • Establish industrial parks for maritime sectors, maritime economic and trade cooperation zones, platforms for marine technology cooperation

S4	Enhance Monetary Circulation	All the parties should promote the realization of exchange and settlement of local currency, increase the ability to fend off financial risks and make the region more economically competitive in the world.	• Bilateral currency swap; • Asian bond market development; • Establish AIIB and BRICS New Development Bank; • Negotiation around Shanghai Cooperation Organization finance institution; • Strengthen cooperation of China-ASEAN Interbank Association; • Multilateral financial cooperation in the form of syndicated loans and bank credit; • Bond issuance (Renminbi and foreign currencies outside of China); • Cooperation on bilateral financial regulation; • Financial risk warning systems; • Cross-border exchange between credit investigation regulators and institutions.
S5	People-to-People Exchanges	All the parties should strengthen the friendly exchanges between their peoples to promote understanding and friendship with each other.	• Education and language programs; • Opening and running schools; • Cultural and arts festivals; • Tourism (icl. Sports Tourism); • Cooperation in science and culture; • Education policy coordination; • Frameworks for mutual recognition of academic credentials, develop national qualification frameworks; • Setting up joint research programs; • Student and parliamentary exchange; • Epidemic information sharing, the exchange of prevention and treatment technologies and the training of medical professionals, and improve our capability to jointly address public health emergencies; • Chinese scholarships; • Jointly conducting maritime and geoscience surveys and research; • Maritime Science and Technology Cooperation Partnership Initiative, Marine Scholarship Program, marine knowledge and cultural exchange; • Promoting Matsu folk culture, marine cultural heritage protection and underwater archaeology and excavation, holding The Ocean Culture Year and the Ocean Arts Festival in countries along the Road to celebrate the Maritime Silk Road's spirit of friendly cooperation.

Sources: China MoFA. (2013). President Xi Jinping Delivers Important Speech and Proposes to Build a Silk Road Economic Belt with Central Asian Countries. September 7, 2013; China MoFA. (2015). Leading Group for the BRI Action Plan to Connect BRI through Standardization, 2015-2017. China Ministry of Foreign Affairs; China MoE. (2016). Education Action Plan for the Belt and Road Initiative. July 2016.

China Ministry of Education; China MoA. (2017). Vision and Action on Jointly Promoting Agricultural Cooperation on the Belt and Road. May 2017. China Ministry of Agriculture; China MoFA. (2017). Full text: Vision for Maritime Cooperation under the Belt and Road Initiative. Ministry of Foreign Affairs. June 2017. China MoC. (2017). Ministry of Culture Belt and Road Cultural Development Action Plan (2016-2020). January 9, 2017. ChinA Ministry of Culture; China National Tourism Administration and General Administration of Sport of China. (2017). China issues Belt and Road Sports Tourism Development Action Plan. July 12, 2017.

3.2 Additional Focus Areas Outlined in Xi Jinping's 2013 Speech to the Indonesian Parliament Proposing the Formation of the Maritime Silk Road with Southeast Asian Countries

In Table 2, we break down five key themes underpinning BRI and illustrative activities as articulated in President Xi's 2013 speech to the Indonesian parliament (ASEAN-China Center, 2013), denoted M1-M5. We also cross-walked these themes with those previously identified in the Silk Road speech (S1-S5). Rows color-coded in yellow indicate partial relationship between Maritime and Silk Road goals, rather than full thematic overlap.

Table 2. Key BRI Thematic Areas Identified from President Xi's Maritime Road Speech Cross-walked to the Silk Road Speech

Maritime Road Area #	Linked Silk Road Area #	Key Phrase	Description	Specific Activities
M1	S1*, S5*	Develop Good Neighborliness	Promote strategic China-ASEAN cooperation, respect each other's right to explore and pursue economic and social development, and improve people's lives.	• "Treaties of good-neighborliness, friendship and cooperation… to build good-neighborly relations."
M2	S3	Win-Win Cooperation	Greater connectivity and trade with ASEAN countries.	• Upgrade China-ASEAN Free Trade Area, expand two-way trade
M3	S1	Stand Together and Assist Each Other	Forge synergy in responding to crises, promote new thinking of	• Cooperation in disaster prevention and relief;

			comprehensive security, common security, and cooperative security to jointly uphold regional peace and stability.	• Cyber security coordination; • Combatting cross-border crimes, joint law enforcement activities; • Improve China-ASEAN defense ministers' meeting mechanism, hold regular dialogues on regional security issues.
M4	S5	Mutual Understanding and Friendship	Social support of relations, nurture deeper bonds.	• Youth, think tank, parliament, NGO, cultural exchange; • Sending volunteers to ASEAN countries to support their cultural, educational, health and medical development; • Scholarships for study in China.
M5	S1*	Stick to Openness and Inclusiveness	Promote closer-knit relations between China and ASEAN for common progress in Asia, with the diversity of countries as a key strength (while encouraging non-regional countries to "respect the diversity of the region").	• Multilateral funds established with a focus on ASEAN countries, e.g. Lancang-Mekong Cooperation (LMC) mechanism was established at the 17th China-ASEAN Summit.
*Partially related to the specific Silk Road goal, rather than full thematic overlap.				

Sources: China MoFA. (2013). President Xi Jinping Delivers Important Speech and Proposes to Build a Silk Road Economic Belt with Central Asian Countries. September 7, 2013; ASEAN-China Center. (2013). Speech by Chinese President Xi Jinping to the Indonesian Parliament. October 3, 2013.

3.3 Full List of Additional BRI Action Plans Consulted

In Table 3, we disclose the full list of additional BRI action plans—beyond the two 2013 speeches and the 2015 Ministry of Foreign Affairs Action Plan—consulted in the process of constructing the taxonomy and tagging methodology. In addition to enumerating each plan, we also disclose our rationale for whether and why we chose to include or exclude this content in finalizing the taxonomy of activities and keyword construction to operationalize the tagging schema.

Table 3. List of BRI Action Plans Consulted

Name of Action Plan	Inclusion / Exclusion Rationale
Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road, March 2015	Excluded. Duplicates points in the main policy speeches in 2013, maritime activities are addressed with more specificity in the 2017 document which followed this.
Action Plan on Belt and Road Standard Connectivity (2015–17), October 2015	Excluded. English translation unavailable, standard promotion activities sufficiently well outlined in other policy documents.
Education Action Plan for the Belt and Road Initiative, July 2016	Included.
Action Plan on the Belt and Road Cultural Development (2016–20), December 2016	Included, but provided minimal additional insights. Cultural programming is well covered by other documents.
Vision and Action on Jointly Promoting Agricultural Cooperation on the Belt and Road, May 2017	Included–primarily used to define inclusion/exclusion cases around smallholder farmers.
Vision and Actions on Energy Cooperation in Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road, May 2017	Excluded. Activities covered by other documents.
The Belt and Road Ecological and Environmental Cooperation Plan, May 2017	Excluded. Activities covered by other documents.
Vision for Maritime Cooperation under the Belt and Road Initiative, June 2017	Included.
Belt and Road Sports Tourism Development Action Plan, July 2017	Included.
Special Plan on Advancing Cooperation of Science and Technology Innovation in the Belt and Road Construction, November 2017	Excluded. Activities covered by other documents.
Action Plan on Belt and Road Standard Connectivity (2018–20), January 2018	Excluded for now, as it comes after the end of the period covered by the Global China Development Finance data (2000-2017).

3.4 Additional Suggested Activities for Inclusion Based Upon Review of AidData's Database

In Table 4, we disclose additional project activities we included in our taxonomy upon review of AidData's historical Global Chinese Development Finance Dataset (version 2.0) and that appeared to be consistent with the intent of the BRI key thematic areas, even though they were not explicitly referenced in the core documents. These activities are included below and cross-walked to each BRI theme.

Table 4. List of Additional Included Activities with Illustrative Sample Projects from AidData's Historical Global Chinese Development Finance Database

Silk Road Area # + Key Phrase	Included Projects (in addition to activities listed above)
S1 - Strengthen Policy Communication	- Policy coordination, including policy coordination in sectors excluded below; - Disaster prevention / preparedness; - All cross-border crime prevention, including in sectors excluded below
S2 - Improve Road (Infrastructure) Connectivity	- Strengthen cooperation for well-planned labor migration policies; - Coal-fired power plants;
S3 - Promote Trade Facilitation	- Agricultural projects in support of increased production for export and processing, overcoming trade barriers - Crop modernization for export - Increasing employment opportunities/access to jobs, workforce development for trade-relevant industries - Trade integration - Trade-related Aspects of Intellectual Property Rights Agreement (TRIP Agreement) - Trade, working capital, and investment projects financing - Caribbean Region Positioned to Succeed in an Open Trade Environment - Multilateral trade negotiations
S4 - Enhance Monetary Circulation	Agreements regulating of remittance payment flows
S5 - People-to-People Exchanges	- Sports exchanges - Exchange of technical experts for training, including in sectors excluded below

	● Medical consultants ● Sustainable or eco-tourism ● Statistical training and cooperation (except when used for trade standardization)

3.5 Excluded Activity List

In Table 5, we disclose a list of activities we determined to exclude from our taxonomy of "BRI-like" projects, upon review of AidData's historical Global Chinese Development Finance Dataset (version 2.0). Even though these activities are more broadly part of Beijing's overseas development program, they are less clearly linked to the substantive thematic focus areas laid out in BRI. In practice, these activities would be considered to be "non-BRI like." One minor note for clarification is that we still do include policy coordination or exchange for technical assistance in these sectors as relevant to BRI, which were coded to the relevant sectors.

Table 5. List of Excluded Activities with Illustrative Sample Projects from AidData's Historical Global Chinese Development Finance Database

Description	Sample Projects
General social/welfare assistance (including poverty reduction), orphanages Social protection programs	● Social Resiliency Increased ● Improved Social Sector Development and Governance ● Girl child initiatives/ other social services ● Orphanages ● Social security reform cooperation ● Social safety net ● Child sensitive social protection to prevent/reduce vulnerability and/or exclusion ● Food Stamps Programs ● Psychosocial support ● Case management
Humanitarian response and general disaster relief/recovery. Note: Policy coordination for disaster prevention and preparation should be coded to S1.	● On 23 August 2017, the Chinese government committed a $1 million USD donation to the World Food Programme (WFP) for emergency 'food and nutrition assistance to vulnerable returnees and refugees in Eastern Afghanistan and people displaced by conflict.' ● 174-simple-bungalow project launched by the Chinese government for families affected by snow disasters and mudslides in 2017 ● Donating firetrucks/ambulances

Food aid, treatment of acute malnutrition	On April 7, 2017, the Chinese Embassy in Kenya (中国驻肯尼亚大使馆), the Kenya Chinese Economic and Trade Association (肯尼亚中国经贸协会), and the Kenya Overseas Chinese Federation (肯尼亚华人华侨联合会) jointly donated 144 tons of grain, including maize flour, wheat flour, and cooking oil, with a total value of $154,664 (about Ksh 16 million) to Kenya for drought relief.
Aid to smallholder farmers/fishers	- Training farmer organizations - Agricultural cooperatives - Farmer-to-farmer organization - Improve market opportunities for smallholder farmers through the expansion of food purchasing mechanisms - Agricultural alternative development - Projects providing support to small-scale fishers, ensure they can get their products to market
WASH interventions	- Shandong Electric Power Construction Third Engineering Company (SEPCOIII or SEPCO3) donated an unspecified amount of water dispensers, wheel chairs, food packages, and other materials to 500 poor residents of Hashemiya City, Jordan. - Community participation for water management
Medical aid other than: personnel exchange, scholarships for medical students, technical assistance, capacity development, or policy coordination for disease surveillance (code to policy coordination or people-to-people exchange as applicable).	- On December 14, 2017, the 12th Chinese medical team (recorded in #55839) officially donated medicine and equipment worth 370,000 LSL to Motebang Hospital in Leribe, Lesotho - Maternal and Child mortality - Combatting specific infectious diseases (see note about policy coordination for surveillance) - Insecticide-treated nets - Combatting non-infectious diseases, psychosocial care - Sexual and reproductive health interventions - Development of specific vaccines and medicines
Gender equality projects	- Preventing violence against women and girls - Child marriage reduction - Recognizing the value of domestic work - Providing equal opportunity to women entrepreneurs - Political empowerment and equality of women.
Biosphere / water resource protection, except when directly referencing policy coordination	- Lake and wetland protection - Restoring forests - Conserving migratory bird areas - Creating marine monuments and coastal conservation areas - General "environment" projects
Protecting endangered species and/or preventing poaching of species	- Protecting endangered plant/animal species - World Wildlife Fund activities - Combating invasive species - Reducing overfishing

Note: Do apply a BRI tag for cross-border law enforcement activities.	
Preventing forced labor Note: Do apply a BRI tag for cross-border law enforcement activities.	• Eliminating child labor • Raising issue of labor trafficking in the media to influence the authorities
Labor rights	• Projects supporting labor unions • Labor relations • Employment insurance • Safety and health at work • ILO projects in general • Trade Unions
Micro, Small, and Medium Enterprises	• MSME Development • Access to financial services and affordable credit for SMEs • Investment in specific SMEs
Inclusion of vulnerable groups	• Grant worth $5.1 million to the Government of Samoa for the Loto Taumafai Disability Society New Campus Construction Project • Chinese Embassy provides funding to Chinese Disabled Performing Arts Troupe who donates to 6 schools for the disabled in Myanmar • Improve social, economic, and developmental status of targeted vulnerable populations • Rights for specific groups (indigenous people, people with disabilities, etc.) • Helping handicapped people/children • Abandoned children/street children
Housing projects	• China pledges $85 million to build houses in Lahore, Pakistan • Residential construction • Real estate
Donation of sports goods without personnel exchange	• China donated 1500 sports balls to Albania, including basketballs, footballs and volleyballs worth 13,800 USD.
Protecting cultural and national heritage	• UNESCO Projects • Archeological mission • Building and/or grants for museums
Creating and maintaining green and safe public spaces	• Reducing public harassment, share of public space • Building parks, city squares • Building playgrounds
Environmentally sound chemical management	• Persistent Organic Pollutants (Elimination of POPs) • The Stockholm Convention on Persistent Organic Pollutants

	● Projects solely focused on ensuring that chemicals are not released into the air during the production process
Reducing waste/emission generation alone	● Prevention and reduction of waste ● Recycling products ● Waste management projects ● Diesel retrofitting projects ● Reducing greenhouse emissions (on its own, if part of broader project code to that)
Climate change mitigation and conferences	● Monitor climate change ● Responding to climate change ● Conference on climate change and human safety ● Grants to communities to funds priority climate change adaptation activities at the local level ● Supporting participants from developing countries to attend meetings during the multilateral negotiation under the Climate Convention and the Kyoto Protocol
Rule of law and judicial support activities (general)	● Legal and judicial systems development ● Law enforcement grants w/o coordination or training ● Intellectual property rights ● Transitional justice
Reducing in-country corruption and bribery	● Vietnam Anti-Corruption Program 2011-16: Supporting The Implementation Of An Anti-Corruption Strategy To 2020.
Responsive, inclusive, and participatory decision making	● Projects aimed at developing civil society and community participation in political processes; elections; parliaments and other local and national-level decision making bodies; civic engagement; political competition, political transition ● Legislative functions ● Voter education, pluralistic political process, decentralization ● Parliamentary strengthening/training of parliament members ● E-parliament
Microfinance	● Including expanding access to credit in rural areas
General budget support	● Mozambique budget support evaluation
Public sector financial management, public management	● The project provides general budget support to Mozambique during the years 2008-2010. Additional support is provided to build capacity in the policy analysis unit (DNEAP) in the Ministry of Planning and Development.
Legal identity support	● Birth registration
Human rights defense	● Education and support for victims of human rights violations ● Campaign against criminalisation of HRDs

Access to information, protection of journalists	● Includes freedom of information, press freedom, civil rights ● Open data policies, freedom of information laws
Domestic revenue mobilization	● Tax and revenue collection
Debt relief	● Paris Club Debt Reduction ● Debt cancellation/restructuring ● Reducing debt service rates/interest ● PPTE/HIPC
Data collection and dissemination (general)	● Census data ● MICS surveys ● Disaggregated data ● Open data initiatives ● MGD/SDG reporting
Research and analysis (no further information)	● Studies without specified or relevant areas ● General "knowledge management" ● Monitoring and evaluation

4.   Operationalizing a Tagging Schema for Projects

Given the high volume of historical Chinese overseas development projects (13,000+) in the AidData Global Chinese Development Finance dataset, we used a semi-automated approach (blending human- and machine-coding) to balance precision and scalability to operationalize our BRI tagging schema. In this section, we provide more information on: (i) the coding process steps used to identify, tag, and verify projects meeting our criteria of "BRI-like" (section 4.1); (ii) the keyword queries used for the machine-coding of "BRI-like" projects (section 4.2); and (iii) final notes and limitations (section 4.3).

4.1 Coding Process

We used a 10-step process to move from conceptualizing the thematic areas of BRI to operationalizing a tagging schema and applying it to the AidData Global Chinese Development Finance dataset (version 2.0). These steps are briefly outlined below.

Step 1. Preliminary Mapping of Project Activities

Systematic mapping of activities to "BRI" or "non-BRI" categories based on illustrative projects specified in public speeches, policy documents issued by the PRC Ministry of Foreign Affairs and National Development and Reform Commision, and supplemental expert research (see Section 3).

Step 2. Expert Review and Validation of Mapping

Submit project categorization to expert reviewers for assessment, including sample projects from the Global Chinese Development Finance dataset for reference. Finalize the taxonomy of "BRI-like" activities based upon this input.

Step 3. Identification of Keywords for Tagging Schema

Develop keywords for machine-coding to create "BRI" and "non-BRI" tags for the projects in the Global Chinese Development Finance dataset based on identified project activities (see Section 4.2 for examples of the keywords).

Step 4. First Round Application of Keywords

Apply the keywords to filter the description and title of all projects in the Global Chinese Development Finance dataset to the inclusion of those tags, generating four categories: (i) BRI-like; (ii) non-BRI-like; (iii) double-tagged (machine identified as both BRI-like and non-BRI-like); and (iv) non-tagged.

Table 6. First Round Results of Keyword Applications to the Historical Database

Category	Number of Project Observations
BRI-like	2k projects
Non-BRI-like	3k projects
Double-tagged	1k projects
Non-tagged	4.5k projects

Step 5. Revision of BRI-tag Keywords to Reduce Noise

Pull out most frequent two- to four-word phrases in all data, review to flag sources of noise (map to BRI, Non-BRI, Neutral). Review funding and implementing agency names that overlap with keywords. Move from broad terms ("education", "road") to verb-noun dyads. Add new keywords from the first round of "no-code" projects for commonly ignored projects. Assess how adjustments from the round 1 keywords to round 2 refined keywords would change the results (i.e., the number of projects by category) by mapping to the OECD's Creditor Reporting System sectors for quick assessment of expected versus actual inclusion.

Step 6. Sample Coding of Double-Tagged Projects to Create a Training Dataset

Subset a sample of the "double-tagged" projects that the machine assigned conflicting tags (i.e., both BRI-like and non-BRI like) and have AidData staff manually assign those to a classification of "BRI-like" or "non-BRI-like".

Step 7. Double-Blind Coding of Full Corpus of Double-Tagged and Untagged Projects

Using the staff-assessed sample as a training dataset, and a BRI Tag Project-Keyword Grid as a reference, have two rounds of research assistants hand-code the remaining double tagged and untagged projects. Instruct them to assign tags based on project titles and descriptions, linking them to activity types and previously coded examples. Include instructions that coding solely based on presence or absence of keywords should be avoided, as these projects are the ones that either proved too complex for a simple keyword classification, or lacked any of the identified keywords.

Step 8. Arbitration of Discrepancies

AidData staff arbitrates all projects that any two research assistants coded differently, including projects that received the same "BRI-Like" or "Non-BRI" codes but received different thematic area codes.

Step 9. Manual Verification of a Sample of Tagged Projects (All $ Values)

For the entire tagged dataset, pull a random sample of 2-5 percent of projects (all project $ values) to manually verify the accuracy and consistency of the assigned tags.

Step 10. Manual Verification of All Mega Projects ($ Values Above $500 Million)

We also perform an additional round of verification for all projects over $500 million (321 projects between 2000-2017) due to the outsized influence these projects will have on any aggregated dollar values (66 percent of the $843 Billion total).

4.2 Sample Keyword Queries for the Machine-Coding of "BRI-like" projects

This is the second round of keywords, after a first scoping round. It incorporates verb-noun dyads to improve specificity and reduce length of query where possible.[3]

Table 7. Illustrative Keyword Queries for Machine-Coding of BRI-like Projects

Silk Road Area #	Key Phrase	Keywords
S1	Strengthen Policy Communication	"policy coordination", "policy communication", "policy cooperation", "joint policy support", "joint policy communication", "combatting cross-border crime", "combat cross-border crime", "preventing cross-border crime", "joint law enforcement", "joint police", "police training", "organized crime", "trafficking", "customs inspection", "border police", "customs technology", "intergovernmental exchange", "intergovernmental forum", "Pacific Islands Forum", "disaster prevention", "disaster preparedness", "disaster preparation", "monitor earthquakes", "monitor tsunamis", "early warning system", "cyber security", "treaty", "defense ministers' meeting", "defense minister meeting", "regional dialogue", "regional security treaty", "Security threats", "marine ecoological cooridor", "marine cooridor cooperation", "mangrove", "sea-grass", "coral reef", "coastal wetlands", "marine pollution", "ocean acidification", "beach

---

[3] These keywords were applied in R statistical software, using the stringr package's str_detect() function. For more information, see Wickham H (2022). *stringr: Simple, Consistent Wrappers for Common String Operations*. http://stringr.tidyverse.org, https://github.com/tidyverse/stringr.

		sanitation", "maritime silk road", "blue carbon", "tsuanami advisory", "marine rescue", "marine security", "search and rescue"
S2	Improve Road (Infrastructure) Connectivity	"network contruction", "road improvement", "network improvement", "road construction", "construct a road", "build a road", "border road", "national route", "pave a road", "road paving", "highway improvement", "construction of a road", "length road section", "construction of a 1 km road", "construction of a 2 km road", "construction of a 3 km road", "construction of a 4 km road", "construction of a 5 km road", "construction of a 6 km road", "construction of a 7 km road", "construction of a 8 km road", "construction of a 9 km road", "construction of a 10 km road", "construction of a 11 km road", "construction of a 12 km road", "construction of a 13 km road", "construction of a 14 km road", "construction of a 15 km road", "construction of a 16 km road", "construction of a 17 km road", "construction of a 18 km road", "construction of a 19 km road", "construction of a 20 km road", "construction of a 21 km road", "construction of a 22 km road", "construction of a 23 km road", "construction of a 24 km road", "construction of a 25 km road", "construction of a 26 km road", "construction of a 27 km road", "construction of a 28 km road", "construction of a 29 km road", "construction of a 30 km road", "construct a bridge", "telecommunications network", "telecommunications connectivity", "river dredging", "maritime connectivity", "maritime transport", "maritime information", "maritime networks", "chinese highway standards", "chinese standard", "petroleum network", "electric network", "coal infrastructure", "oil pipeline", "petroleum pipeline", "lng pipeline", "pipeline security", "pipeline connectivity", "power substation", "thermoelectric power plant", "thermal power plant", "wind farm", "gas pipeline construction", "build a gas pipeline", "built a gas pipeline", "standardization", "airport construction", "aviation improvement", "airport improvement", " port construction", " port improvement", "labor migration policy"
S3	Promote Trade Facilitation	"Custom cooperation", "customs capacity building", "customs training", "WTO trade agreement", "trade promotion", "free trade area", "trade balance", "open trade", "foreign trade promotion", "foreign trade facilitation", "facilitate foreign trade", "promote foreign trade", "increase foreign trade", "duty-free area", "investment protection", "double taxation", "agricultural processing", "agricultural export", "farm production", "desalination", "ocean engineering", "environmental protection technologies", "marine tourism", "aquaculture development", "agricultural assistance", "livestock farming", "animal husbandry technology", "fishery promotion", "fishery development", "fisheries promotion", "fisheries development", "forestry promotion", "forestry development", "forest promotion", "forest development ", "forestry resources", "resources survey", "oil extraction", "coal extraction", "gas extraction", "lng extraction", "mineral extraction", "oil well", "coal mine", "gas well", "lng well", "mineral mine", "hydropower station", "nuclear power production", "nuclear power cooperation", "wind power", "solar power", "renewable energy", "gold mining", "oil refinery", "oil

		terminal", "hydropower plant", "hydroelectric power plant", "geochemical survey", "geochemical maps", "phosphate fertilizers", "industrial park", "industrial site", "investment in china", "marine survey", "barges terminal", "expansion of container terminal", "expansion of terminal", "China-ASEAN Free Trade Area", "farm processing", "agribusiness", "crop modernization", "agricultural equipment", "farming equipment", "agricultural expert", "employment opportunities", "access to jobs", "workforce development", "trade integration", "trade finance", "Trade-related Aspects of Intellectual Property Rights Agreement", "TRIP Agreement", "working capital", "investment project", "multilateral trade negotiation"
S4	Enhance Monetary Circulation	"currency swap", "currency market development", "development of capital markets", "Asian Infrastructure Investment Bank", "AIIB", "BRICS New Development Bank", "New Development Bank", "Shanghai Cooperation Organization negotiation", "interbank association", "multilateral loan", "multilateral credit", "multilateral grant", "bond market development", "bond issuance", "renminbi bond", "financial regulators training", "financial regulation", "financial monitoring", "financial risk management", "financial risk reduction", "financial investigation", "credit investigation exchange", "credit investigation regulators", "credit investigation institution", "credit investigation training", "capacity building credit investigation", "remittance payment system", "increase remittances", "settlement payment system", "increase settlements"
S5	People-to-People Exchanges	"Chinese language course", "Mandarin language course", "mandarin language class", "Chinese language class", "Chinese proficiency", "mandarin proficiency", "Confucius", "Hanyu Shuiping Kaoshi", "HSK testing", "educational volunteer", "kindergarten renovation", "construction of a kindergarten", "construction of a technical institute", "establishing a technical institute", "vocational and technical training ", "open school", "school construction", "school construction project", "art festival", "cultural festival", "tourism cooperation", "promoting tourism", "tourism promotion", "increase toursim", "increasing tourism", "support tourism", "tourism support", "cultural cooperation", "science and culture cooperation", "scientific exchange", "researcher visit", "scientist visit", "scientist exchange", "scientist training", "scientist courses", "bilateral research", "education policy coordination", "school policy coordination", "educational institute coordination", "academic credentials", "qualification frameworks", "joint research", "invited researchers", "joint research center", "technical expert ", "technical experts", "agreement for the research center", "university exchange", "university visa", "parliament exchange", "sent to china to study", "fellowship stipend", "fellowships stipend", "full-time fellowship", "disease surveillance", "epidemic monitoring", "epidemic information sharing", "sharing medical technologies", "train doctors", "train nurses", "train medical professionals", "health volunteer", "medical team", "naval hospital ship", "scholarship", "joint ocean research", "maritime science and technology", "marine scholarship", "ocean culture", "ocean arts", "matsu folk", "matsu culture", "matsu people", "youth exchange",

		"think tank exchange", "NGO exchange", "cultural volunteer", "sport team exchange", "sport visit", "table tennis", "technical expert", "expert exchange", "policy training", "experts from China", "consultant team", "team of consultants", "training courses", "ecotourism", "eco-tourism", "statistical training"
Non-BRI	Excluded Keywords	"child marriage", "domestic work", "women entrepreneurs", "women empowerment", "women's political participation", "women's political empowerment", "women's employment", "lake protection", "wetland protection", "forest restoration", "migratory bird areas", "marine monument", "coastal conservation area", "invasive species", "overfishing", "WWF", "world wildlife fund", "endangered animal species", "anti-poaching", "fight poaching", "child labor", "labor trafficking", "labor union", "trade union", "labor relations", "employment insurance", "international labour organisation", "international labor organization", "safety and health at work", "safe workplace", "workplace safety", "MSME development", "microentreprise development", "small and medium entreprise development", "SME development", "MSME support", "SME support", "access to credit for MSME", "access to credit for SME", "on-lending to smes", "disability", "disability advocacy", "social inclusion", "indigenous rights", "human rights of indigenous groups", "street children", "abandoned children", "orphans", "vulnerable grouphouses", "residential area", "apartments", "housing project", "sports equipment", "stadium construction", "stadium technical cooperation", "sports complex", "stadium rehabilitation", "stadium renovation", "UNESCO", "archeology", "archeologist", "archeological", "archeologists", "museum grant", "museum donation", "public harassment", "public park", "city square", "streetlights", "playground", "play area", "solar street", "street light", "Persistent Organic Pollutants", "POPs", "stockholm convention", "reducing chemical emission", "waste reduction", "waste prevention", "recycling", "waste management", "deisel retrofitting", "greenhouse gas reduction", "kyoto protocol", "climate change mitigation", "climate change conference", "effects of climate change", "legal development", "judicial systems development", "legal and judicial systems development", "intellectual property", "law enforcement grant", "transitional justice", "anti-corruption", "bribery", "civil society empowerment", "election monitoring", "civic engagement", "local decision-making bodies", "legislative functions", "voter education", "pluralistic political processes", "decentralization", "local governance", "parliamentary strengthening", "e-parliament", "public sector financial management", "public management", "tax collection", "DRM", "domestic resource mobilization", "tax and resource collection", "peacekeeping", "peacekeepers", "microfinance", "micro-finance", "microcredit", "micro-credit", "access to credit in rural areas", "general budget support", "birth registration", "human rights defense", "human rights defenders", "HRD", "journalist support", "journalist training", "journalist protection", "press freedom", "freedom of information", "civil rights", "debt relief", "debt reduction", "debt forgiveness", "debt restructuring", "debt rescheduling", "paris club", "debt cancellation", "reduced debt service rates", "PPTE", "HIPC", "debt obligations", "outstanding

		obligations", "reschedules", "debt financing", "eximbank restructures", "census data", "household survey", "disaggregated data", "open data", "MDG reporting", "SDG reporting", "mics survey", "mics household survey", "Multiple Indicator Cluster Survey", "knowledge management", "monitoring and evaluation", "school supplies", "office equipment", "office supplies", "printers", "donates books to", "computer equipment", "donates computers", "computers to", "magazine subscriptions", "sewing machines", "subscriptions", "musical instruments", "donates laptops", "trucks to", "aircraft acquisition", "buses to"

4.3 Additional Notes and Limitations

For projects that include a blend of BRI and non-BRI activities and research assistants were unable to identify which activities are the primary focus of the project, we include a "Vague-BRI like" tag. This may also be applied if there is an activity that appears connected to BRI, but the documentation does not provide concrete enough details to move forward with a BRI tag. This indicator allows researchers to "round up" to a more inclusive definition of BRI when computing aggregates, or "round down" to stay conservative and only work with the projects with a clear link to BRI in the project descriptions.

Thematic area #4, Enhancing Monetary Circulation, was one of the most challenging to work with in our BRI-tagging process. This is due to the frequently opaque nature of activities like currency swaps, which were not recorded in AidData's Global Chinese Development Finance Dataset, Version 2.0. Therefore, this particular sub-indicator likely underreports the value of this pillar of BRI finance and its share of total BRI funding. AidData is currently piloting a methodology to capture official Chinese currency swaps, which will be included in a future release of the Global Chinese Development Finance Dataset. Further research on BRI issues may choose to include these data when assessing the full impact of the BRI.

We made an intentional decision to base our BRI-like project taxonomy and methodology on the Chinese government's documentation related to the announcement of BRI in 2013 and the initial years of implementation through 2017 (i.e., BRI-1.0) that best corresponds to the time period covered by AidData's Global Chinese Development Finance database (version 2.0) which includes projects from

2000-2017. We recognize that in doing so, this methodology may not entirely address subsequent adjustments, such as 2018's "BRI Recalibration" or how BRI may evolve in future in light of President Xi's announcement of China's proposed Global Development Initiative at the U.N. General Assembly in 2021. In future years, as data becomes available, we may revisit this methodology to develop additional BRI-2.0 or BRI-3.0 tags, but that is presently beyond the scope of this first pilot effort.

Based upon our preliminary assessment, the 2018 recalibration and even the more recent 2021 announcement, do not appear to be a full restructuring of priorities; but we anticipate a greater emphasis in future on the "software" of development (e.g., human knowledge, institutional capacity) in response to scrutiny of the "hard" infrastructure investments,[4] suggesting that these categories will still apply to projects moving forward.

5. References

ASEAN-China Center. (2013). Speech by Chinese President Xi Jinping to the Indonesian Parliament. October 3, 2013. Retrieved from: http://www.asean-china-center.org/english/2013-10/03/c_133062675.htm

Bandiera, Luca; Tsiropoulos, Vasileios. 2019. A Framework to Assess Debt Sustainability and Fiscal Risks under the Belt and Road Initiative. Policy Research Working Paper; No. 8891. World Bank.

Boston University. (2020). China's Global Energy Finance Data.

China MoFA. (2013). President Xi Jinping Delivers Important Speech and Proposes to Build a Silk Road Economic Belt with Central Asian Countries. September 7, 2013. Retrieved from: https://web.archive.org/web/20201017031834/https://www.fmprc.gov.cn/mfa_eng/top ics_665678/xjpfwzysiesgjtfhshzzfh_665686/t1076334.shtml

---

[4] https://www.nbr.org/publication/a-guide-to-the-belt-and-road-initiative/

China MoFA. (2015). Leading Group for the BRI Action Plan to Connect BRI through Standardization, 2015-2017. China Ministry of Foreign Affairs. Retrieved from: https://www.followingthemoney.org/wp-content/uploads/2017/06/2015_Leading-Group-for-the-BRI_Action-Plan-to-Connect-BRI-through-Standardization-2015-2017_E-1.pdf

China MoFA. (2015). Full text: Action plan on the Belt and Road Initiative. March 30, 2015. http://english.www.gov.cn/archive/publications/2015/03/30/content_281475080249035.htm

China MoE. (2016). Education Action Plan for the Belt and Road Initiative. July 2016. China Ministry of Education. Retrieved from: https://eng.yidaiyilu.gov.cn/zchj/qwfb/30277.htm

China MoA. (2017). Vision and Action on Jointly Promoting Agricultural Cooperation on the Belt and Road. May 2017. China Ministry of Agriculture. Retrieved from: https://eng.yidaiyilu.gov.cn/zchj/qwfb/34829.htm

China MoC. (2017). Ministry of Culture Belt and Road Cultural Development Action Plan (2016-2020). January 9, 2017. China Ministry of Culture. Retrieved from: http://www.eamcp.net/en/beltandroad/supportpolicies/20200706418.html

China MoFA. (2017). Full text: Vision for Maritime Cooperation under the Belt and Road Initiative. Ministry of Foreign Affairs. June 2017. Retrieved from: http://www.china.org.cn/world/2017-06/20/content_41063286.htm

China National Tourism Administration and General Administration of Sport of China. (2017). China issues Belt and Road Sports Tourism Development Action Plan. July 12, 2017. Retrieved from: https://eng.yidaiyilu.gov.cn/qwyw/rdxw/19091.htm

Custer, S., Dreher, A., Elston, T.B., Fuchs, A., Ghose, S., Lin, J., Malik, A., Parks, B.C., Russell, B., Solomon, K., Strange, A., Tierney, M.J., Walsh, K., Zaleski, L., and Zhang, S. 2021. Tracking Chinese Development Finance: An Application of AidData's TUFF 2.0 Methodology. Williamsburg, VA: AidData at William & Mary.

Dreher, A., Fuchs, A., Parks, B. C., Strange, A., & Tierney, M.J. (Forthcoming). Banking on Beijing: The Aims and Impacts of China's Overseas Development Program. Cambridge, UK: Cambridge University Press.

Hillman, J. and D. Sacks. (2021). China's Belt and Road: Implications for the United States. Independent Task Force Report No. 79. Retrieved from: https://www.cfr.org/report/chinas-belt-and-road-implications-for-the-united-states/

Malik, A., Parks, B., Russell, B., Lin, J., Walsh, K., Solomon, K., Zhang, S., Elston, T., and S. Goodman. (2021). Banking on the Belt and Road: Insights from a new global dataset of 13,427 Chinese development projects. Williamsburg, VA: AidData at William & Mary.

Schlenzig, N. (2020). The Belt and Rebranding Initiative. The Interpreter. March 13, 2020. Lowy Institute. Retrieved from: https://www.lowyinstitute.org/the-interpreter/belt-and-rebranding-initiative

Wang, H. (2016). A Deeper Look at China's Going Out Policy. March 8, 2016. Retrieved from: https://www.cigionline.org/publications/deeper-look-chinas-going-out-policy/