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# **The Return to Overseas Visits by Political Leaders: Evidence from Japanese yen loan procurement auctions**

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## **The Return to Overseas Visits by Political Leaders: Evidence from Japanese yen loan procurement auctions\***

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### **Abstract**

Securing infrastructure development contracts amidst the current growing demand for infrastructure overseas has become a pivotal policy issue in advanced countries. This study examines overseas visits by political leaders in infrastructure investment competitions, analyzing the case of Japan. First, by leveraging Japanese yen loan procurement auction data, I estimate the effect of overseas visits by Japanese political leaders on the probability of a contract being awarded to Japanese firms. Subsequently, to analyze the ripple effect on Japanese merchandise exports, I estimate short- and long-run Japanese export-contract value elasticities by adopting a dynamic panel specification with a system generalized method of moments estimator. Finally, I calculate the incurred travel costs. The results suggest that from 2001–2020, the net economic benefits owing to overseas visits by Japanese political leaders amounted to US\$ 53 billion in year-2023 dollars, with US\$ 2.6 billion annually. The estimated return on overseas visits by political leaders should be regarded as a lower bound because the scope of the current analysis has been limited to aid-related infrastructure in developing countries.

**Keywords:** Overseas visits by political leaders; infrastructure procurement auctions; international trade; Japan

**JEL codes:** F52, F35, F21, F14, C36

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## 1. Introduction

According to the Global Infrastructure Outlook, an investment of US\$ 97 trillion will be required by 2040 to respond to rapid income growth and urbanization particularly in developing countries, and the investment gap is estimated at approximately US\$ 15 trillion. Securing growing infrastructure demand abroad has become a pivotal policy issue in advanced countries, as overseas infrastructure projects are typically large scale, generating ripple effects on the domestic economy through exports and job creation. Additionally, the recent expansion of Chinese infrastructure investments under the Belt and Road Initiative (BRI) has become a serious threat, not only as a loss of economic opportunities for domestic firms in advanced countries but also as a rise in geopolitical risks (McCarthy 2018; Wang 2023).

Economic diplomacy through overseas visits by political leaders is believed to play a significant role in promoting overseas infrastructure investments by domestic firms in advanced nations. Face-to-face political meetings may enhance intergovernmental trust and mitigate transaction costs, political uncertainty, and asymmetric information (van Bergeijk and Moons 2018). Political intervention may also accelerate the negotiation process for infrastructure projects by resolving pending issues such as financing conditions. The 2009 United Arab Emirates nuclear power deal, where Korean firms beat France and US-Japan consortiums to win a 40-billion-dollar deal, heightened the awareness of the political leaders of advanced countries regarding the significance of diplomatic leadership in overseas infrastructure businesses (McCarthy 2018).

However, overseas visits by political leaders have remained controversial. The travel costs of organizing trade missions are high, particularly for a state visit, owing to the usage of government planes, a large number of attendants, and detailed planning and preparation (van

Bergeijk and Moons 2018). In addition, the empirical evidence in the literature analyzing the effectiveness of political leaders' overseas visits is mixed. For example, Head and Ries (2010) conclude that Canada's high-profile trade missions involving high-level government officials had no trade promotion effect, probably because most trade deals with visited countries would have occurred anyway.

This study aims to determine the net benefit of overseas visits by political leaders in promoting international infrastructure investments by analyzing the case of Japan. Examining Japanese cases is interesting and relevant because Japanese firms have been major players in global infrastructure markets, particularly in Asia. In addition, together with the utilization of official development assistance (ODA), "top-sale" by political leaders has been placed as a crucial policy tool of the infrastructure system overseas promotion strategy (ISOPS) launched by the second Abe administration in May 2013. Under the ISOPS, Japanese political leaders made 1234 overseas trips during 2013–2022 (excluding 2020) to promote Japanese infrastructure businesses. Prime Minister Abe stated in his policy speech to the session of the Diet:

*“Shinkansen (bullet trains), the pride of Japan, will run across the vast land of India. This September, construction began on a high-speed rail line there. My administration's more than 200 endeavors at the highest levels to expand our markets overseas have borne fruit, with the value of our infrastructure exports increasing by 10 trillion yen over the past five years. By expanding throughout the world Japan's high level of technology and know-how, we will increase our opportunities to grow significantly even in the midst of a decreasing birthrate and graying society.”* (Prime Minister of Japan and His Cabinet 2017)

Examples of successful bids by Japanese firms through diplomatic leadership include the Hamad International Airport Expansion Project in Qatar and the Abidjan Port Cereal Berth

Construction Project in Côte d'Ivoire (Prime Minister of Japan and His Cabinet 2020). However, no empirical evidence exists regarding the extent to which overseas visits by Japanese political leaders link to successful bids by Japanese firms.

First I estimate the effect of overseas visits by Japanese political leaders on the probability that a contract will be awarded to Japanese firms by analyzing 2123 Japanese yen loan procurement auctions across 70 countries from 2001–2020. Political leaders in this study include prime ministers, ministers, and high-level government officials, such as deputy ministers, parliamentary secretaries, and special advisors to prime ministers. To address the endogeneity problem, I instrument Japanese political leaders' visits with the BRI membership status for the visited countries. Subsequently, to analyze the ripple effect on Japanese merchandise exports, I estimate short- and long-run Japanese export-contract value elasticities by adopting a dynamic panel specification with a system generalized method of moments (GMM) estimator. Finally, I calculate the incurred travel costs for overseas visits by Japanese political leaders.

I discover that the probability of contracts awarded to Japanese firms in cases with Japanese political leaders' visits was 47 percentage points greater than in cases without visits. I also find evidence that successful bids by Japanese firms induced merchandise exports from Japan, with a long-run export-contract value elasticity of 0.03. For the cost side, I find that the aggregated cost associated with overseas visits by Japanese political leaders from 2001–2020 was approximately US\$ 90 million. Taken together, the results suggest that from 2001–2020, the net economic benefits owing to overseas visits by Japanese political leaders amounted to US\$ 53 billion in year-2023 dollars, with US\$ 2.6 billion annually.<sup>1</sup> The

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<sup>1</sup> Throughout the paper I convert any cost and benefit measured in Japanese yen into 2023-dollar terms using Japan's consumer price index and the average year-2023 exchange rate of 140 Japanese yen per US\$.

estimated return to overseas visits by political leaders should be regarded as a lower bound because the scope of the current analysis has been limited to relatively large-scale aid-related infrastructure in developing countries.

This study makes significant contributions to the literature by enhancing our understanding of how and to what extent overseas visits by political leaders impact the economic interests of the home country.<sup>2</sup> To the best of my knowledge, this is the first study to provide evidence of its effect on overseas infrastructure investments. Thus far, evidence has been limited to the effect on international trade (Nitsch 2007; Head and Ries 2010; Creusen and Lejour 2013; Fuchs and Klann 2013; Cassey 2016; Lin et al. 2017; Lavalley and Lochard 2022), outward foreign direct investment (FDI) (Park and Jung 2020; Adam and Tsarsitalidou 2023), and ODA inflows (Hoshiro 2020). Second, this study is also the first to reveal the net benefits of political leaders' overseas visits. Prior research has predominantly focused on benefit sides, while much attention has not been paid to costs. Third, my findings demonstrate that infrastructure investment is a potential channel through which political leaders' overseas visits increase merchandise exports from their home countries.

This study also contributes to enhancing our understanding of Japanese economic diplomacy. It is relatively well understood that Japanese ODA is effective in promoting Japanese merchandise exports (Nishitateno and Umetani 2023), outward FDI (Kimura and Todo 2010; Lee and Ries 2016), and overseas infrastructure investments (Nishitateno 2023). In contrast, despite growing intensity of travel activities by politicians in recent years, empirical analysis of economic diplomacy through overseas visits by Japanese political leaders has been scant.

The remainder of this paper is organized as follows: Section 2 describes the data used in this

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<sup>2</sup> See Appendix A for details.

analysis. Section 3 overviews Japanese yen loan procurement auctions. Section 4 provides an overview of overseas visits by political leaders in terms of prior evidence, Japan's policy context, and initial evidence of their link with Japanese yen loan auction outcomes. Section 5 explains the empirical approach, including the model specifications and estimation techniques. Section 6 reports the estimation results. Finally, Section 7 concludes the study.

## **2. Data**

### *2.1. Data sources and variable constructions*

Data on Japanese yen loan procurement auctions were obtained from "Bidding Results of Japanese-Government-Backed Yen Loan Credit," compiled by the Japan International Cooperation Agency (JICA). Procurement auctions comprise "employment of consultants" and "procurement of goods and services." The JICA data provide information on the borrowing country, signed years of Japanese yen loan, project names (e.g., construction of the Delhi high-speed transportation system), bidders and their nationalities, contractors, and contract value. The JICA data list only auctions for the employment of consultants worth more than 100 million yen (US\$ 0.7 million) and for the procurement of goods and services worth more than 1 billion yen (US\$ 7 million).

Using the JICA data, I constructed an outcome variable that takes the value of one if a contract is awarded to Japanese firms in each procurement auction, regardless of whether it is a single or joint bid with Japanese and non-Japanese firms. For placebo tests, I also constructed the same outcome variable for US, German, French, and UK firms. Utilizing the project name, I manually classified each auction into 13 sectors: roads, seaports, airports, bridges/tunnels, power, communication, railways, environment, water control, water supply, disaster management, education/health, and others. I also created a variable for the number of bidders at each auction.

Data on overseas visits by Japanese political leaders were collected from the Diplomatic Bluebook compiled by the Ministry of Foreign Affairs of Japan (MOFA). The MOFA data provide information on destination, visitor, positions (e.g., prime minister, ministers, other high-level government positions, and imperial family members), length of stay in days, and purpose of visit for all Japanese dignitaries. The purpose of the visit was to provide only approximate information, such as who they met and what ceremonies, conferences, and meetings they attended. In most cases, the content of discussions and negotiations is not available, making it difficult to identify overseas visits to promote Japanese infrastructure businesses.

To complement the limitations of the MOFA data above, I utilized the records of overseas visits by Japanese political leaders to promote Japanese infrastructure businesses for 2021 and 2022, provided by the Cabinet Secretariat through personal requests.<sup>3</sup> I excluded any dignitaries that did not appear in this record (e.g., minister of defense and imperial family members).<sup>4</sup> In this study, the Japanese political leaders include prime minister, ministers and other high-level government officials. The ministers cover 8 ministers: foreign affairs; economy, trade, and industry; land, infrastructure, transport, and tourism; education, science, sports, and culture; internal affairs and communications; environment; agriculture, forestry, and fisheries; justice, chief cabinet secretary, and deputy prime minister. The other high-level government officials cover deputy ministers, parliamentary secretaries for the above-selected ministries, and special advisors to the prime minister. Following prior studies, such as Nitsch (2007), Head and Ries (2010), and Fuchs and Klann (2013), I constructed a dummy variable

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<sup>3</sup> The records include information on destination, date, visitor, and positions for all Japanese political dignitaries, to promote Japanese infrastructure businesses. Any record before 2021 is not available, as the Cabinet Secretariat began collecting such information in 2021.

<sup>4</sup> While this procedure could help alleviate the measurement issue to some extent, I acknowledge that the measurement errors remain concerning. I employ an instrumental variable approach to deal with this concern. See Section 5 for a detailed discussion.



taking the value of one if a country receives any Japanese political leaders.

Data on the BRI membership status were collected from Nedopil (2024). By December 2023, 147 countries have joined the BRI by signing Memorandum of Understandings (MoU) with China since its first announcement in September 2013. I constructed a time-space-varying BRI membership status variable taking the value of one for periods after the MoU was signed. See Appendix B for details. Given no country had exited from the BRI during the sample period, there is no on and off for this variable after being assigned.

Using the Organization for Economic Co-operation and Development's (OECD) OECD.Stat database, I obtained data on bilateral Japanese ODA flows, measured in constant US\$ (2020 price) and disbursements. Data on GDP per capita, measured in current US\$, and population were obtained from the World Development Indicators compiled by the World Bank. I used the United Nations (UN) Comtrade database compiled by the UN to obtain information on bilateral merchandise trade flows measured in current US\$. I extracted the bilateral nominal exchange rate, measured as the national currency per Japanese yen, from the UN Conference on Trade and Development. Natural disaster data were obtained from the International Disaster Database compiled by UCLouvain. Natural disasters in this database include several phenomena such as earthquakes, storms, floods, droughts, and epidemics. The natural disaster variable in this study accounts for all of these phenomena. The status of economic partnership agreements with Japan was obtained from the MOFA.

## *2.2. Descriptive statistics*

Combining the information explained above, I constructed a pooled cross-sectional dataset covering 2123 procurement auctions for 70 countries from 2001 to 2020.<sup>5</sup> The sample

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<sup>5</sup> Appendix C lists the countries in the sample.

accounted for 97% of all Japanese yen loan auctions during the sample period in terms of contract value. Table 1 presents the summary statistics for all the variables used in the estimations. The mean probability that a contract was awarded to Japanese firms was 48%, ranging from 32% in the environment sector to 89% in the seaport sector. The successful bids by the US, German, French, or the UK firms were very limited. The mean value of the contract was 6.7 billion yen (US\$ 45 million). The mean number of bidders at each auction was 3.4. The procurement of goods and services accounted for 67% of the total yen loan auctions; the rest of the auctions were associated with the employment of consultants. Approximately 83% of the observations involved overseas visits by Japanese political leaders. State visits from the sample country to Japan were less frequent (43%). The BRI membership status that were officially recognized during 2001–2020 accounted for 15% of the observations. The interpretation of exchange rates is not meaningful because currency units differ among countries.

To estimate short- and long-run export-contract value elasticities, I constructed a year-country panel dataset covering 67 countries from 2004–2020. The country coverage was consistent with the initial analysis, as shown in Appendix C.<sup>6</sup> The sample period is three years shorter as lagged effects are accounted for. Appendix D shows the summary statistics for all the variables in the dynamic panel analysis. Note that to avoid a loss of observations, I added one (one Japanese yen) to the value of contracts awarded to Japanese firms before logarithmic transformation.

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<sup>6</sup> Serbia, Timor-Leste, and Turkey were dropped due to shorter sample period.

**TABLE 1. Summary Statistics**

	Mean	S.D.	Min	Max
Dummy if a contract is awarded to Japanese firms	0.48	0.50	0	1
<i>By sector</i>				
Road	0.34	0.47	0	1
Seaport	0.89	0.31	0	1
Airport	0.82	0.39	0	1
Bridge and tunnel	0.78	0.42	0	1
Power	0.49	0.50	0	1
Communication	0.85	0.37	0	1
Railway	0.58	0.49	0	1
Environment	0.32	0.47	0	1
Water control	0.38	0.49	0	1
Water supply	0.33	0.47	0	1
Disaster management	0.54	0.51	0	1
Education and health	0.59	0.50	0	1
Others	0.70	0.46	0	1
Dummy if a contract is awarded to US firms	0.01	0.12	0	1
Dummy if a contract is awarded to German firms	0.04	0.18	0	1
Dummy if a contract is awarded to French firms	0.03	0.17	0	1
Dummy if a contract is awarded to UK firms	0.01	0.09	0	1
Signed year of yen loan	2009	5	1996	2020
Contract value, billion yen	6.71	23.10	0.1	638.58
Number of bidders	3.4	2.5	1	23
Dummy if an auction is for procurement of goods and services	0.67	0.47	0	1
Dummy if a country receives any Japanese political leader	0.83	0.37	0	1
Dummy if Japan receives any state visit	0.43	0.49	0	1
BRI membership status	0.15	0.36	0	1
Population, million	414	535	0.3	1380
GDP per capita, thousand US\$	2.4	1.8	0.2	13.2
Japanese ODA, million US\$	826	675	1	2780
Bilateral trade with Japan, million US\$	24,000	46,600	2	346,000
Number of natural disasters	9.85	8.44	0	41
Exchange rates	34.42	65.50	0.01	261

*Notes:* This table presents summary statistics for the sample in pooled cross-sectional data covering 2123 Japanese yen loan procurement auctions across 70 countries during 2001–2020.

### 3. Japanese Yen Loan Procurement Auctions

Japanese yen loan procurement auctions have typically adopted an international competitive bidding, based on the guidelines formulated by JICA (Iimi 2006; JICA 2023).<sup>7</sup> The first step of the procurement auction is an invitation to prequalification through a public forum, such as

<sup>7</sup> There are some cases where an international competitive bidding may not be appropriate (JICA 2023). Examples include cases where the yen loan borrower wishes to maintain reasonable standardization of its equipment or spare parts in the interests of compatibility with existing equipment, and the number of qualified contractors, suppliers or manufacturers is limited. In such cases, alternative approaches such as limited international bidding, international shopping, or direct contracting may be adopted.

a newspaper or online platform. The prequalification is typically required for a large-scale procurement, for complex projects, or under any other circumstances where preparing detailed bids is costly, in order to ensure bidders with adequate capabilities and resources. Second, qualified bidders receive a formal invitation to bid and need to submit technical and financial bids simultaneously in two separate envelopes within about 45–90 days. Finally, the technical bids for all bidders are opened to determine if they meet technical requirements, and only for bidders satisfying technical requirements, the financial bids are opened. A contract is awarded to a bidder with the lowest evaluated costs.

**TABLE 2. Japanese Yen Loan Procurement Auctions, 2001–2020**

	Value (billion yen)	Share (%)
Total	14,243	100
By sectors		
Road	3,439	24
Seaport	495	3
Airport	633	4
Bridge and tunnel	655	5
Power	2,825	20
Communication	83	1
Railway	3,261	23
Environment	531	4
Water control	455	3
Water supply	892	6
Disaster management	70	0
Education and health	196	1
Others	708	5
By regions		
East Asia and Pacific	4,881	34
Europe and Central Asia	683	5
Latin America and Caribbean	752	5
Middle East and North Africa	1,424	10
South Asia	5,987	42
Sub-Saharan Africa	515	4

*Source:* Author’s calculation using “Bidding Results of Japanese-Government-Backed Yen Loan Credit,” compiled by JICA.

The forms of participation to Japanese yen loan procurement auctions vary substantially in terms of whether a bidder is single or joint, and if joint, whether the consortium is national or multinational. For example, the single bidder accounted for 46% of the 2123 successful bids in the sample, followed by the joint bidder of two firms (32%), three (12%), and four (5%).

Among the 1146 joint bidders, the national consortium was limited to 38%, indicating that the multinational consortium has been more prevalent.

Table 2 reports sectoral and regional distributions for Japanese yen loan procurement auctions in the sample. Over the past 20 years, the total value of Japanese yen loan procurement auctions amounted to approximately 14 trillion yen (US\$ 93 billion) globally. A large part of Japanese yen loan is used for economic infrastructure, particularly power (20%), railway (23%), and road (24%). Geographically, most of Japanese yen loan procurement auctions were undertaken in East Asia and Pacific (34%), or South Asia (42%).

It is important to point out that Japanese infrastructure investments through Japanese yen loan procurement auctions could capture only a part of the whole picture. According to the Heavy & Chemical Industries News Agency Co., Ltd., the total number of overseas infrastructures awarded to Japanese firms during 2001–2020 was 5540, which was more than five times greater than that in the sample (1011).

## **4. Overseas Visits by Political Leaders**

### *4.1. Prior research*

Initial research in the literature focused on its effect on international trade. Analyzing a year-country panel, Nitsch (2007) examined the effects of state visits on merchandise exports for the US, France, and Germany and found an export promotion effect of 8%. Similar evidence has been found in different settings and approaches (Creusen and Lejour 2013; Cassey 2016; Lavallee and Lochard 2022). Fuchs and Klann (2013) examined the hypothesis that the Chinese government punishes a country receiving the Dalai Lama to reduce imports from the host country and found that hosting the Dalai Lama led to a 20% reduction in the host country's exports to China.

However, examining the effectiveness of Team Canada Missions and Canadian Trade Missions, Head and Ries (2010) found no evidence of trade creation effects. Lin et al. (2017) investigated overseas visits by Chinese political leaders to African countries and found no evidence linking Chinese political leaders' visits to Chinese exports and imports.

In recent years, the analyses have expanded to outward FDI and ODA inflows, and the empirical evidence has been mixed, as is the case with the effect on international trade. Analyzing a year-country panel, Park and Jung (2020) examined whether state visits by South Korean presidents promoted outward FDI from South Korea and found no effect. Adam and Tsarsitalidou (2023) discovered that visits to the US by political leaders led to an increase in inward FDI in the home country. Hoshiro (2020) found that an additional diplomatic visit to Japan led to an increase in Japanese ODA in the home country.

Despite the growing body of literature in this field, several important questions remain unanswered. These questions pertain to whether overseas visits by political leaders serve the economic interests of home countries through channels other than international trade and outward FDI, the net benefit of overseas visits by political leaders, and how such visits by political leaders promote international trade and outward FDI. This study adds to the literature by addressing these questions through careful examination of a case study of Japanese overseas infrastructure investments.

#### *4.2. Japan's policy context*

The first overseas infrastructure investment policy in Japan dates back to June 2010 when the Democratic Party of Japan (DPJ) announced it as a key pillar of the national growth strategy to boost the domestic economy (Cabinet Secretariat 2010). After the DPJ administration ended in November 2012, successive Japanese governments maintained and developed DPJ

policies. In May 2013, the second Abe administration (2012–2020) of the Liberal Democratic Party (LDP) announced the infrastructure system overseas promotion strategy (ISOPS) to facilitate the securing of overseas infrastructure projects worth 30 trillion yen (US\$ 200 billion) by 2020 by Japanese firms. In December 2020, the Suga administration (2020–2021) of the LDP renewed the ISOPS with a new target of 34 trillion yen (US\$ 230 billion) by 2025, and the current Kishida administration (2021-) has maintained this new ISOPS.

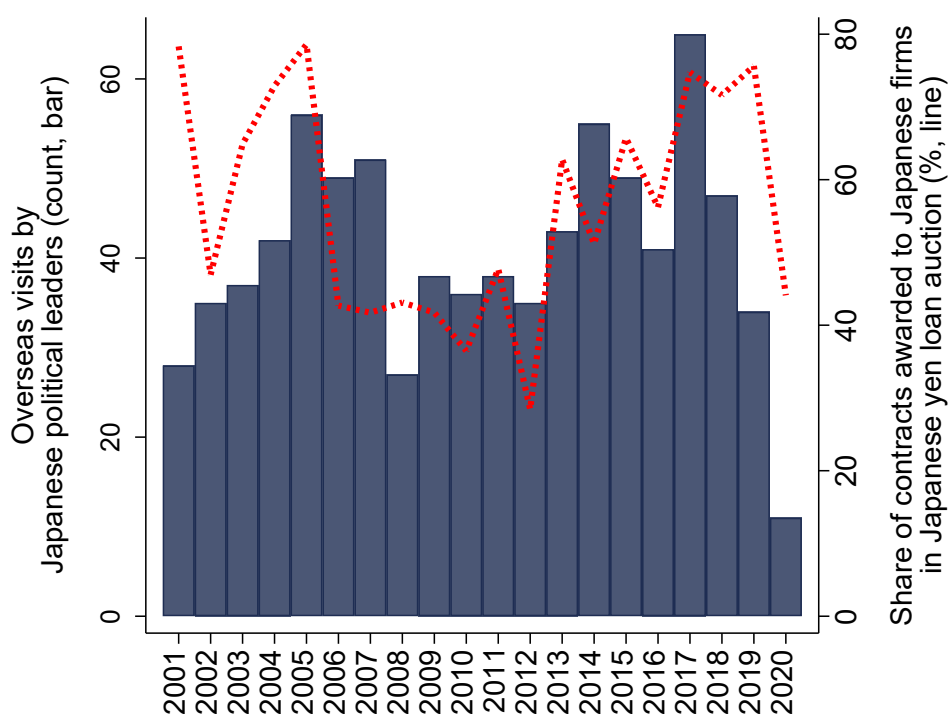
Under the ISOPS, together with the utilization of ODA, “top-sale” by Japanese political leaders has been a key policy tool to achieve the targets. Appendix E shows that 1234 overseas trips were made worldwide by Japanese political leaders from 2013–2022 to promote Japanese infrastructure businesses. The table also shows that during the same period, Japanese political leaders hosted foreign political leaders in Japan for infrastructure promotion to the same extent as overseas trips. Online meetings were excluded. Data for 2020 are not available.

During business trips, Japanese political leaders undertake various economic diplomacies. These include the promotion of Japanese infrastructure businesses, exchange of opinions about current and future infrastructure projects, and conclusion of the Memorandum of Cooperation to strengthen economic cooperation. They also participate in ceremonies, business seminars, and problem solving about outstanding payments and issues such as financial shortages and regulatory obstacles (Ministry of Land, Infrastructure, Transport and Tourism 2018, 2019).

#### *4.3. Initial evidence*

Figure 1 plots the trends in overseas visits by Japanese political leaders to 70 countries in the sample and the share of contracts awarded to Japanese firms in the Japanese yen loan

procurement auction during 2001–2020. Overseas visits by Japanese political leaders had grown during 2001–2007, whereas the share of successful bids by Japanese firms had substantially fluctuated between 40–80%. By contrast, the share of winning bids by Japanese firms appears to be correlated with overseas visits by Japanese political leaders after 2009. The subsequent section explains the empirical approach to formally estimate effect of overseas visits by Japanese political leaders on auction outcome.



**FIGURE 1. Overseas Visits by Japanese Political Leaders and Successful Bids by Japanese Firms**

*Notes:* The bars represent overseas visits by Japanese political leaders to 70 countries in the sample, measured in counts. The dotted line shows the share of contracts awarded to Japanese firms in the Japanese yen loan procurement auction in terms of contract values.

## 5. Empirical Approach

### 5.1. Effect of overseas visits by Japanese political leaders on auction outcome

I estimate the linear probability model (LPM) using the ordinary least squares (OLS) estimator

$$Japanese_{i,s,c,t} = \beta_1 SYLL_{i,s,c,t} + \beta_2 CONV_{i,s,c,t} + \beta_3 BIDDER_{i,s,c,t} + \beta_4 PROC_{i,s,c,t} + \beta_5 OVPL_{c,t} + \gamma X_{c,t} + \delta_s + \omega_c + \varphi_t + \varepsilon_{i,s,c,t} \quad (1)$$



where subscript  $i$  is the Japanese yen loan procurement auction,  $i = 1, \dots, 2123$ ;  $s$  is the sector of each auction,  $s = 1, \dots, 13$ ;  $c$  is the country,  $c = 1, \dots, 70$ ; and  $t$  represents the year,  $t = 2001, \dots, 2020$ . *Japanese* is a dummy variable indicating whether a contract is awarded to a Japanese firm. *SYL* is the year in which the Japanese yen loan was signed. *CONV* is the amount of the contracted value. *BIDDER* is the number of bidders, which captures the intensity of competition in each auction. *PROC* is a dummy variable that takes the value of one if an auction involves the procurement of goods and services and zero if it involves the employment of consultants. *OVPL* is the dummy variable taking the value of one if a country receives at least one Japanese political leader.  $X$  is a vector of country-level confounding factors, as discussed later.  $\delta$ ,  $\omega$ , and  $\varphi$  represent sector-, country-, and year-fixed effects, respectively.  $\varepsilon$  is an error term.

The sector fixed effects ( $\delta$ ) account for sector-specific characteristics including the size of the project, engineering and designing costs, and asset specificity, which could influence an auction outcome. The different probabilities of successful bids by Japanese firms among sectors, as presented in Table 1, indicate the significance of controlling for sector fixed effects in the model. The country fixed effects ( $\omega$ ) account for time-invariant factors relevant to auction outcome at the country level, such as geographical proximity and historical ties. The year fixed effects ( $\varphi$ ) control for any changes, such as altered Japanese economic diplomacies and diet schedules, across countries during the sample period.

My primary interest is to identify  $\beta_5$ . The key identification issue is that the travel destinations of political leaders are not randomly assigned, indicating that *OVPL* may be correlated with unobserved time-variant factors. One such variable may be the change in the visited country's policy environment, including the control of corruption, government

effectiveness, political stability, and the rule of law. An improvement in the policy environment may enhance investors' minds, whereas political leaders tend to visit more reliable countries. Failure to control for time-variant policy environments in the visited country might cause  $\beta_5$  to be biased upward.

Another identification issue is that *OVPL* may be susceptible to measurement errors, as the variable is likely to include political leader visits irrelevant to the promotion of Japanese infrastructure businesses. Additionally, face-to-face political meetings may occur in a third country during multiple conferences (e.g., Asian-Pacific Economic Cooperation) (van Bergeijk and Moons 2018). Assuming a positive effect of *OVPL* on Japanese overseas infrastructure investments, measurement errors might cause  $\beta_5$  to be biased downward.

To address potential endogeneity, I instrument overseas visits by Japanese political leaders with the BRI membership status for the sample country. I expect this instrumental variable to positively correlate with Japanese political leaders' overseas visits. The focus of China's overseas BRI engagement has been on energy and transport infrastructures (Nedopil, 2024), in which Japanese firms have heavily involved. Joining the BRI implies a loss of economic opportunities for Japanese firms in the sample country, encouraging Japanese political leaders to strengthen economic diplomacy.

My instrumental variable approach must meet several conditions. The first is that my instrument is sufficiently correlated with the instrumented variable. I find that the BRI membership status is indeed strongly correlated with the overseas visits by Japanese political leaders. I use the Stock-Yogo weak instrument test (Stock and Yogo 2005) to adjudicate on instrument strength. The second is that my instrument is not itself affected by Japanese yen loan procurement auction outcomes. The BRI membership status is likely to meet this

requirement, as the high-level political decision-making is exogenous to each auction outcome. The third requirement is that my instrument affects the procurement auction outcomes only via overseas visits by Japanese political leaders. To account for other potential channels, I add country-level controls ( $\mathbf{X}$ ) to Eq. (1), including population, GDP per capita, Japanese ODA, bilateral trade with Japan, the number of natural disasters, exchange rates, and foreign political leaders visiting Japan.

The use of a pooled cross-sectional dataset raises the concern that model errors may be serially correlated over time and that model errors for auctions in the same country might be correlated because of common shocks such as national government policies. Failure to adjust within-cluster correlations may lead to misleading small standard errors. To address this issue, I cluster standard errors at the country level throughout the analyses. The use of the LPM is motivated by the fact that the interpretation is more straightforward than the logit and probit models, enabling me to calculate the economic benefits of political leader visits transparently.

### 5.2. Japanese export-contract value elasticities

The supporting industries for infrastructure are extensive, ranging from raw materials to chemical and machinery products. To examine the ripple effect, I quantify the extent to which the value of contracts awarded to Japanese firms is linked to Japanese merchandise exports using the following dynamic panel model:

$$\ln JEX_{c,t} = \sum_{j=0}^3 \beta_j \ln JCON_{c,t-j} + \beta_4 \ln JEX_{c,t-1} + \boldsymbol{\gamma} \mathbf{X}_{c,t} + \omega_c + \varphi_t + \varepsilon_{c,t} \quad (2)$$

where  $c$  is the country,  $c = 1, \dots, 68$  and  $t$  represents the year,  $t = 2004, \dots, 2020$ .  $JEX$  represents the value of Japanese merchandise exports.  $JCON$  is the aggregate value of

contracts awarded to Japanese firms. I take the natural logarithm, denoted by “ln” for *JCON* and *JEX*, because their distributions are heavily skewed and to produce direct estimates of elasticity.  $X$  is a vector of confounding factors, including GDP, GDP per capita, population, exchange rate, and economic partnership agreements with Japan.  $\omega$  and  $\varphi$  are country- and year-fixed effects, respectively.  $\varepsilon$  is an error term. I report standard errors clustered by country.

$\beta_0$  can be interpreted as the short-run or same-year Japanese export-contract value elasticity: the % change in *JEX* with respect to a 1% change in *JCON* in the same year. Eq. (2) also enables me to obtain a long-run Japanese export-contract value elasticity using  $(\beta_0 + \beta_1 + \beta_2 + \beta_3)/(1 - \beta_4)$ . This captures the summed effect of the observed lagged responses by holding the assumed functional form fixed in a long-term simulation (De Boef and Keele 2008). Additional lags of *JCON* have effects that are statistically indistinguishable from zero and thus are not included.

There are several challenges to estimating Eq. (2). The first is the inclusion of country-fixed effects ( $\omega$ ), which does not eliminate dynamic panel bias because the lagged *JEX* and  $\varepsilon$  mechanically move together, leading to a correlated regressor and error (Roodman 2009). The second is that *JCON* might be correlated with  $\varepsilon$ . For example, the value of the contracts awarded to Japanese firms may co-move with the economic conditions of the sample country. Third, *JCOM* does not measure the true value of contracts awarded to Japanese firms given that JICA data do not include small-scale auctions.

To address these estimation issues, I apply the GMM estimator to Eq. (2). The system GMM uses lagged differences and levels of the dependent variable as instrumental variables in a dual-equation system and is known to have superior efficiency compared to the difference

GMM estimator (Blundell and Bond 1998). I assume that changes in instruments are uncorrelated with fixed effects (Roodman 2009). In my one-step system GMM estimation,  $t-1$  lagged *JEX* is regarded as predetermined but not strictly exogenous, and *JCON* and *X* as endogenous. Therefore, I place every regressor in Eq. (2) into the instrument matrix, excluding the country- and year-fixed effects. The matrix is collapsed to limit the number of instruments, resulting in 186 instruments in the system according to GMM specifications. I apply the forward orthogonal deviation transform, which subtracts the average of all available future observations from the previous observation (Arellano and Bover 1995).

## 6. Results

### 6.1. Estimated effects of overseas visits by Japanese political leaders

Table 3 presents the IV estimation results for Eq. (1) with a pooled cross-sectional dataset for 2123 Japanese yen loan procurement auctions across 13 sectors in 70 countries during 2001–2020. Column 1 reports the first-stage results, showing a point estimate for the BRI membership status of 0.21. This is statistically different from zero at the 5% level, with the 95% confidence interval ranging from 0.04 to 0.39. The Cragg-Donald Wald  $F$  statistic on the instrument exceeds 17, allowing me to reject the null hypothesis of the Stock-Yogo weak instrument test of 10% maximal IV size. The results suggest that the BRI membership led to an increase in probability of overseas visits by Japanese political leaders by 21 percentage points.

Column 2 of Table 3 reports the second-stage results. The point estimate for overseas visits by Japanese political leaders was 0.47, which was significant at the 5% level, with the 95% confidence interval ranging from 0.003 to 0.94. The IV estimates suggest that the probability of contracts awarded to Japanese firms in cases with Japanese political leaders' visits was 47 percentage points greater than in cases without visits. Given that the average probability of

contracts being awarded to Japanese firms was 48% in the sample, the results suggest that overseas visits by Japanese political leaders had a significant impact on Japanese yen loan procurement auction outcomes for Japanese firms. The cumulative impacts during 2001–2020 amounted to approximately US\$ 53 billion in year-2023 dollars, with US\$ 2.6 billion annually.

**TABLE 3: Estimated Effects of Overseas Visits by Japanese Political Leaders**

Dependent variables:	First-stage	Second-stage
	Dummy if a country receives any Japanese political leader (1)	Dummy if a contract is awarded to Japanese firms (2)
BRI membership status	0.214** (0.088)	
Dummy if a country receives any Japanese political leader		0.472** (0.239)
Signed year of Japanese yen loan	0.005 (0.004)	-0.001 (0.005)
Contract value, billion yen	-0.000 (0.000)	0.002*** (0.001)
Number of bidders in auction	0.001 (0.002)	-0.037*** (0.009)
Dummy for procurement of goods and services	0.012 (0.017)	-0.447*** (0.047)
Ln population	-2.348*** (0.578)	0.790 (0.521)
Ln GDP per capita	0.019 (0.122)	-0.109 (0.083)
Ln bilateral trade with Japan	-0.003 (0.066)	0.066 (0.043)
Exchange rates	-0.001 (0.001)	-0.001** (0.001)
Dummy if Japan receives state visits	0.029 (0.035)	-0.009 (0.020)
Number of natural disasters	-0.002 (0.011)	0.005 (0.007)
Ln Japanese ODA disbursement	0.058* (0.030)	-0.016 (0.018)
Cragg-Donald Wald $F$ statistic on instrument	55.80	-
$R^2$	0.49	0.45
Sector fixed effects		Yes
Country fixed effects		Yes
Year fixed effects		Yes
Year		2001–2020
Country		70
Sector		13
Observations		2,123

*Notes:* This table presents the IV results for estimating Eq. (1). The Stock-Yogo weak ID test critical values are 16.4 for 10% maximal IV size, 9 for 15%, 6.7 for 20%, and 5.5 for 25%. Standard errors are clustered at the country level.

\*\*\*, \*\*, and \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

How do overseas visits by Japanese political leaders influence auction outcomes in favor of Japanese firms? One explanation is that information obtained through economic diplomacy could be shared with potential Japanese bidders, leading to a reduction in their investment costs and thus incentivizing them to participate in procurement auctions. It is also possible that some overseas trips accompany business leaders, allowing for direct negotiations with the political dignitaries in host country.

Apart from the effect of overseas visits by Japanese political leaders, I also identified some determinants of successful bids by Japanese firms. The results suggest that Japanese firms are more likely to win a contract when the value of the contract is large, the number of bidders is small, the auction is for consultant employment, and the Japanese yen is strong. For example, one bidder reduction in auction led to a 0.04 percentage point increase in the probability that a contract was awarded to Japanese firms.

**TABLE 4: Estimated Effects of Overseas Visits by Japanese Political Leaders for Non-Japanese Firms**

Dependent variable is dummy if a contract is awarded to:	Japanese firms (1)	US firms (2)	German firms (3)	French firms (4)	UK firms (5)
Overseas visits by Japanese political leaders	0.472** (0.239)	0.050 (0.031)	0.050 (0.092)	0.015 (0.064)	-0.010 (0.027)

*Notes:* Column 1 of this table repeats the baseline estimates from Column 2 of Table 3. Columns 2–5 present the IV results for re-estimating Eq. (1) with dummy if a contract is awarded to the US, German, French, or the UK firms, separately, as a dependent variable instead of using dummy if a contract is awarded to Japanese firms. Employing the pooled cross-sectional dataset covering 2123 procurement auctions for 70 countries from 2001–2020, all analyses control for all variables listed in Table 3 and sectoral-, country-, and year-fixed effects. Standard errors are clustered at the country level.

\*\*\*, \*\*, and \* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Table 4 reports the IV results for re-estimating Eq. (1) with dummy if a contract is awarded to the US, German, French, or the UK firms, separately, as a dependent variable. Column 1 repeats the baseline estimates from Column 2 of Table 3. I find no noticeable evidence that overseas visits by Japanese political leaders affect auction outcomes for non-Japanese firms from major donor countries. The results for this placebo tests enhance credibility of empirical

evidence above.

## 6.2. Estimated Japanese export-contract value elasticities

Table 5 reports the results. Column 1 shows the estimation results for the static model without the lagged variables. The Japanese export-contract value elasticity is 0.002, which is indistinguishable from zero. Column 2 shows the estimation results for the dynamic panel model adopting the system GMM. I find that short-run export-contract value elasticities are 0.003 but statistically insignificant, as found in the static model. However, long-run export-contract value elasticities are 0.03 at the 5% significance level, with the noticeable 1- and 2-year lagged effects.

**TABLE 5. Estimated Japanese Export-Contract Value Elasticity**

Dependent variable: Ln Japanese merchandise exports		
	Static (1)	Dynamic (2)
Ln value of contract awarded to Japanese firms	0.002 (0.003)	0.003 (0.002)
Ln GDP	4.993 (3.886)	9.810 (19.381)
Ln GDP per capita	-3.812 (4.085)	-9.095 (19.554)
Ln population	-5.181 (4.183)	-10.507 (19.416)
Ln exchange rate	-0.162 (0.169)	-0.111 (0.169)
Economic partnership agreement	-0.144 (0.123)	-0.095 (0.133)
Ln 1-year lagged Japanese merchandise exports		0.611*** (0.065)
Ln 1-year lagged value of contract awarded to Japanese firms		0.003** (0.002)
Ln 2-year lagged value of contract awarded to Japanese firms		0.004* (0.002)
Ln 3-year lagged value of contract awarded to Japanese firms		0.001 (0.002)
Country fixed effects		Yes
Year fixed effects		Yes
Year		2004–2020
Country		67
Observations		1139
Long-run Japanese export-contract value elasticity	-	0.030**

*Notes:* This table presents the results for estimating Eq. (2) with a panel dataset for 67 countries from 2004–2020. Column 1 reports the result for estimating a static model without the lagged variables by OLS. Column 2 reports the results for estimating a dynamic panel model adopting a system GMM. Standard errors are robust to heteroscedasticity and clustered by country. For long-run elasticity, standard errors are generated using the delta method.

\*\*\*, \*\*, and \* indicate statistical significance at the 1%, 5%, and 10% levels, respectively.



Using the long-run Japanese export-contract value elasticity (0.03), I calculated that for every 1 US\$ increase in contract value, Japanese merchandise exports increase by US\$ 0.02. As shown in Subsection 6.1, the aggregate amount of contracts awarded to Japanese firms via overseas visits by Japanese political leaders during 2001–2020 was approximately US\$ 53 billion, suggesting that the ripple effect on Japanese merchandise exports is approximately US\$ 1 billion. Thus, the total economic benefits generated by overseas visits by Japanese political leaders during 2001–2020 are expected to reach approximately US\$ 54 billion in year-2023 dollars.

To examine whether Japanese overseas infrastructure investments are uniquely linked to Japanese merchandise exports, I re-estimate Eq. (2) with merchandise exports from other major exporters (the US, China, and Germany) as a dependent variable. Table 6 presents the short- and long-run export-contract value elasticities for each country based on the GMM results. Column 1 repeats the baseline estimates from Table 5. I find that the short-run elasticities are similar among the selected countries. However, Japan’s long-run elasticity is noticeably larger than that for the other selected countries. A joint test rejects the null hypothesis that long-run elasticities are equal across all four countries.

**TABLE 6. Estimated Export-Contract Value Elasticities for Other Major Exporters**

	Japan (1)	US (2)	China (3)	Germany (4)
Short-run	0.003 (0.002)	0.003* (0.002)	0.003* (0.002)	0.002 (0.002)
Long-run	0.030** (0.013)	0.013* (0.008)	0.013 (0.015)	0.010 (0.008)

*Notes:* This table presents the short- and long-run export-contract value elasticities for Japan and the other major exporters (the US, China, and Germany). This is based on the GMM results for re-estimating Eq. (2) with the merchandise exports from the US, China, and Germany as a dependent variable instead of using Japanese merchandise exports. The analysis employs the panel dataset for 67 countries from 2004–2020. Standard errors are robust to heteroscedasticity and clustered by country. For long-run elasticity, standard errors are generated using the delta method.

\*\*\*, \*\*, and \* indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

### 6.3. Costs

I refer to the Diet minutes as overseas business trip expenses for the prime minister and

ministers under the second Abe administration from December 26, 2012, to May 25, 2016. Table 7 summarizes the travel expenses of Prime Minister Abe and the ten cabinet ministers selected in the current study. Unsurprisingly, the most expensive travel cost (US\$ 287,000 per day) was incurred for the Prime Minister, mainly owing to the usage of government planes and a large number of attendants.<sup>8</sup> The travel costs for the ministers vary from US\$ 9,300 per day for those in justice and environment to US\$ 46,000 per day for the foreign affairs minister.

The summed days of overseas business trips during 2001–2020 for the Prime Minister, ministers, and other high-level government officials were 203, 991, and 1034, respectively. Combined with the cost information in Table 7, I calculated the travel costs incurred from 2001–2020 for the Prime Minister, ministers, and other high-level government officials as follows: US\$ 58 million, US\$ 23 million, and US\$ 10 million, respectively. I used the average and minimum travel costs of the ten ministers (US\$ 23,086 per day and US\$ 9,259 per day, respectively) to calculate travel costs for the ministers and high-level government officials. The aggregated costs associated with overseas visits by Japanese political leaders from 2001–2020 accounted for approximately US\$ 90 million in year-2023 dollars. Thus, I concluded that overseas visits by Japanese political leaders generated a far large net benefit.

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<sup>8</sup> According to the Diet minutes, the costs associated with the government plane during the period from December 26, 2012, to May 25, 2016 were approximately US\$ 32.5 million, which accounted for 56% of the total overseas business trip expenses for the Prime Minister.

**TABLE 7. Overseas Business Trip Expenses for Prime Minister and Selected Minister under the Second Abe Administration**

Position	Name	Trip	Visited country	Length of stay (day)	Attendant	Total cost (US\$)	Cost per day (US\$)
(a) Prime minister	Shinzo Abe	41	92	204	4643	58,493,333	286,732
(b) Ministers for foreign affairs	Fumio Kishida	44	72	202	1335	9,246,667	45,776
(c) Ministers for economy, trade and industry	Toshimitsu Motegi	22	35	98	466	3,706,667	37,823
(d) Ministers for land, infrastructure, transport and tourism	Hiroaki Ohta	12	16	44	222	800,000	18,182
(e) Ministers for education, science, sports and culture	Yoshitaka Shindo	7	16	50	91	826,667	16,533
(f) Ministers for internal affairs and communications	Hakubun Shimomura	21	28	92	122	1,086,667	11,812
(g) Ministers for environment	Nobuteru Ishihara	5	8	30	32	280,000	9,333
(h) Ministers for agriculture, forestry and fisheries	Yoshimasa Hayashi	12	18	48	150	1,286,667	26,806
(i) Ministers for justice	Sadakazu Tanigaki	2	4	18	14	166,667	9,259
(j) Chief cabinet secretary	Yoshihide Suga	1	1	2	11	26,667	13,333
(k) Deputy prime minister	Taro Aso	31	35	123	587	5,166,667	42,005
Average for (b)-(l)		16	23	71	303	2,259,333	23,086

*Notes:* This table summarizes the overseas business trip expenses for the prime minister and the ten selected ministers under the second Abe administration during the period from December 26, 2012, to May 25, 2016. I converted the Japanese yen value of travel costs to year-2023 dollars, using Japan's consumer price index and the average year-2023 exchange rate of 140 Japanese yen per US\$. The cost per day is calculated by dividing the total cost by the length of stay.

*Source:* Japan's Diet minutes as to overseas business trip expenses.

## 7. Conclusion

Overseas visits by political leaders have traditionally been a tool of economic diplomacy to stimulate the domestic economy by strengthening economic ties with foreign countries. Given the fierce competition with emerging economies, particularly China, as well as the sluggish domestic economy, the direct involvement of political dignitaries has become more significant than ever before among advanced nations in recent years. While overseas visits by Japanese political leaders averaged around 30 per year from 1966–1999, it increased to 100 during 2000–2022. A similar trend can also be found in the US (van Bergeijk and Moons 2018). This study has examined the effects of overseas visits by political leaders on overseas infrastructure investments by analyzing the case of Japan.

First, by leveraging Japanese yen loan procurement auction data, I estimated the effect of overseas visits by Japanese political leaders on the probability of a contract being awarded to Japanese firms. Subsequently, I analyzed the ripple effect of successful bids by Japanese firms on Japanese merchandise exports. I also calculated the incurred travel costs for overseas visits by Japanese political leaders. Taken together, the results suggest that from 2001–2020, the aggregated net economic benefits owing to overseas visits by Japanese political leaders amounted to approximately US\$ 53 billion in year-2023 dollars, with US\$ 2.6 billion annually. The estimated return to overseas visits by political leaders should be regarded as a lower bound, because the scope of my analysis has been limited to aid-related infrastructure in developing countries, and the analysis has not taken small-scale yen loan procurement auctions into account.

The findings of this study enhance our understanding of how and to what extent overseas visits by political leaders impact the economic interests of the home country. However, it remains unclear whether overseas infrastructure investments induced by diplomatic efforts

affect other economic outcomes, such as domestic employment. Examining these topics will be an avenue for future research.

### Appendix A: Summary of existing literature

Authors	Data	Methods	Political leader visits	Outcomes	Control variables	Effects
Nitsch (2007)	3 exporters (US, France, Germany), all importers, 1948–2003	OLS	Dummy if state and official visits were made	Merchandise exports	GDP, GDP per capita, regional trade agreements, currency union, current colony, country-paired & year dummies	State visits increased exports from US, France and Germany by 8%
Head and Ries (2010)	180 exporters, 180 importers, 1993–2003	OLS	Dummy if Team Canada Missions, or Canadian Trade Missions visited	Merchandise exports and imports	Population, GDP per capita, regional trade agreements, GATT membership, country-paired & year dummies	No effect on Canadian exports and imports
Fuchs and Klann (2013)	China, 151 countries, 2002–2008	2SLS	Dummy if Dalai Lama met political leaders	Merchandise exports	GDP, population, exchange rate, tariff rate, export orientation, UNGA voting alignment, country & year dummies	Dalai Lama visits reduced host country's exports to China by 20%
Creusen and Lejour (2013)	580,311 Dutch firms, 50 countries, 2003–2007	Probit	Count of trade missions accompanied by Dutch ministers	Probability of firm exporting	Firm productivity, size, firm dummies, GDP, distance to Netherland, import tariff	An additional trade mission led to 0.1pp increase in the probability of exporting by Dutch firms
Cassey (2016)	50 US states, 176 countries	OLS	Count of governor-led US state trade missions	State manufacturing exports	State dummies, country dummies	1% increase in the state trade missions led to 0.04% increase in state manufacturing exports
Lin et al. (2017)	China, 52 African countries, 1990–2012	OLS	Dummy if Chinese presidents, premiers, or lower level ministers visited	Merchandise exports and imports	GDP, population, exchange rate, country & year dummies, country-specific time trends	No effect on Chinese exports and imports
Hoshiro (2020)	Japan, 179 countries, 1969–2015	OLS	Count of diplomatic visits to Japan	ODA commitments given by Japan	Bilateral exports from Japan, UN votes, GDP per capita, number of natural disasters, ODA from US and other DAC countries, democracy indicators, country dummies	An additional diplomatic visit led to 6.6% increase in Japanese ODA
Park and Jung (2020)	South Korea, 144 developing	OLS	Dummy if South Korean presidents visited	Outward FDI	GDP, GDP per capita, bilateral investment treaty, foreign aid,	No effect on outward FDI from South Korea

Lavallee and Lochard (2022)	countries, 1995–2016 France, 187 countries, 1977–2007	OLS	Dummy if French government officials visited	Merchandise exports	government index, year dummies GDP, population, country & year dummies	French government official visits increased French exports by 8%
Adam and Tsarsitalidou (2023)	US, 143 countries, 1970–2019	IPWRA	Dummy variable if a country's leader visited US	FDI inflows relative to GDP	GDP per capita, population, openness, policy score, military expenditure, previous visits, trade with US, NATO member, communist country, UN security council member	A country's leader visit to US led to 0.5 percentage points increases in FDI inflows into visiting country

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*Notes:* OLS is ordinary least square. 2SLS is two-stage-least-squares. IPWRA is Inverse Probability Weighting Regression Adjustment. PML is Poisson maximum likelihood.

## Appendix B: Membership of Belt and Road Initiative for Sample Country

Country	2000– 2012	2013	2014	2015	2016	2017	2018	2019	2020
Cambodia									
China									
Kyrgyz Republic									
Moldova									
Mongolia									
North Macedonia									
Pakistan									
Thailand									
Armenia									
Azerbaijan									
Bulgaria									
Cameroon									
Indonesia									
Iraq									
Kazakhstan									
Romania									
Serbia									
Turkey									
Uzbekistan									
Egypt									
Georgia									
Myanmar									
Papua New Guinea									
Albania									
Bosnia and Herzegovina									
Côte d'Ivoire									
Kenya									
Madagascar									
Malaysia									
Maldives									
Morocco									
Nepal									
Panama									
Philippines									
Sri Lanka									
Timor-Leste									
Ukraine									
Vietnam									
Bolivia									
Cabo Verde									
Costa Rica									
El Salvador									
Ethiopia									
Ghana									
Lao PDR									
Mozambique									
Namibia									
Nigeria									
Rwanda									
Senegal									
Tanzania									
Tunisia									
Uganda									
Vanuatu									
Zambia									
Bangladesh									
Peru									
Bhutan									



Botswana  
Brazil  
Burkina Faso  
Eswatini  
Guatemala  
Honduras  
India  
Jordan  
Mauritius  
Mexico  
Nicaragua  
Paraguay

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*Notes:* Hollow shows the periods when the sample country does not join the Belt and Road Initiative (BRI).  
Dark gray shows the periods when they are member of the BRI.

**Appendix C: List of countries in the sample**

East Asia & Pacific (13)	South Asia (7)	Europe & Central Asia (15)	Middle East & North Africa (5)	Sub-Saharan Africa (19)	Latin America & Caribbean (11)
Cambodia	Bangladesh	Albania	Egypt	Botswana	Bolivia
China	Bhutan	Armenia	Iraq	Burkina Faso	Brazil
Indonesia	India	Azerbaijan	Jordan	Cabo Verde	Costa Rica
Lao PDR	Maldives	Bosnia and Herzegovina	Morocco	Cameroon	El Salvador
Malaysia	Nepal	Bulgaria	Tunisia	Côte d'Ivoire	Guatemala
Mongolia	Pakistan	Georgia		Eswatini	Honduras
Myanmar	Sri Lanka	Kazakhstan		Ethiopia	Mexico
Papua New Guinea		Kyrgyz Republic		Ghana	Nicaragua
Philippines		Moldova		Kenya	Panama
Thailand		North Macedonia		Madagascar	Paraguay
Timor-Leste		Romania		Mauritius	Peru
Vanuatu		Serbia		Mozambique	
Vietnam		Turkey		Namibia	
		Ukraine		Nigeria	
		Uzbekistan		Rwanda	
				Senegal	
				Tanzania	
				Uganda	
				Zambia	

### Appendix D: Summary statistics

	Mean	S.D.	Min	Max
Ln Japanese merchandise exports	18.93	2.42	13.05	25.81
Ln US merchandise exports	19.86	2.37	14.47	26.30
Ln Chinese merchandise exports	20.73	2.11	11.99	25.46
Ln German merchandise exports	19.53	2.10	12.36	25.43
Ln value of contract awarded to Japanese firms (plus one Japanese yen)	5.73	9.86	0	27.28
Ln GDP	25.31	1.76	20.15	30.77
Ln GDP per capita	8.81	0.77	6.68	10.36
Ln population	16.51	1.74	12.23	21.06
Ln exchange rates	-0.69	2.65	-5.14	5.56
Economic partnership agreements	0.09	0.29	0	1

*Notes:* This table presents summary statistics for the sample in panel data for 67 countries during 2004–2020. The number of observations is 1139. To avoid a loss of observations, I added one (1 Japanese yen, or 1 day) to the value of contract awarded to Japanese firms before logarithmic transformation.

### Appendix E: Japanese infrastructure business promotion by Japanese political leaders

	(a) Overseas visits by Japanese political leaders				(b) Incoming visits to Japan by foreign political leaders			
	Prime minister	Ministers	Other high-level political leaders	Total	Prime minister	Ministers	Other high-level political leaders	Total
2013	34	46	41	121	30	72	46	148
2014	32	42	53	127	12	41	37	90
2015	32	36	51	119	26	62	43	131
2016	33	31	52	116	22	46	32	100
2017	30	65	99	194	26	70	40	136
2018	29	65	101	195	43	135	70	248
2019	24	50	74	148	55	105	58	218
2020	-	-	-	-	-	-	-	-
2021	1	26	3	30	4	23	13	40
2022	11	103	70	184	16	101	58	175
2013–2022	226	464	544	1234	234	655	397	1286

*Notes:* This table shows (a) the number of overseas trips made by Japanese political leaders and (b) the number of meetings with foreign political leaders that Japanese political leaders held in Japan for the purpose of Japanese infrastructure promotion. Other high-level political leaders include deputy ministers, parliamentary secretaries for the selected ministries, and special advisor to the prime minister. Online meetings are not counted.

*Sources:* Data for 2013–2019 are from the Prime Minister of Japan and His Cabinet (2019, 2020). Data for 2021 and 2022 are provided by the Cabinet Secretariat through personal requests.

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