Can Aid Buy Foreign Public Support?

Evidence from Chinese Development Finance

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CEPR International Lending and Sovereign Debt RPN

"China in the International Financial System" Workshop
Kiel Institute for the World Economy

Winning hearts and minds

Figure 1: China Aid

Winning hearts and minds

Figure 2: Song “The Belt and Road Is How”

Winning hearts and minds

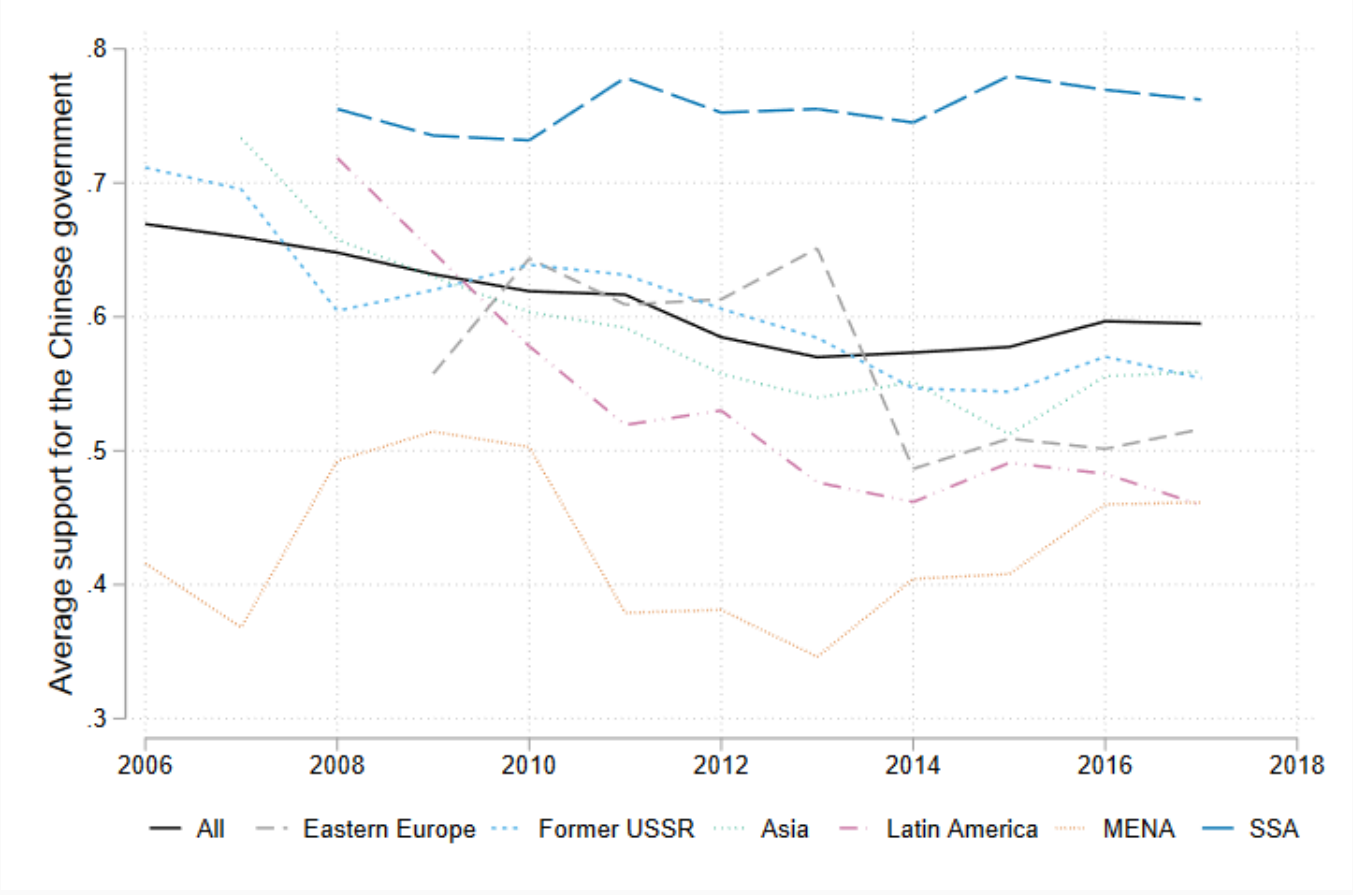

Figure 3: Support for the Chinese government by world region over time, 2006–2017

Winning hearts and minds

A positive image pays off

- Economically
  - Trade and investment increase with bilateral trust and affinity Guiso et al. 2009, Disdier and Mayer 2007
  - Evidence for political consumerism Pandya and Venkatesan 2016
  - Effect of soft power on exports Rose 2016
- Politically
  - Postive opinions help build closer cooperation in non-economic dimensions such as foreign policy Nye 2004, Goldsmith and Horiuchi 2012
  - “Vehicle for public diplomacy” Dietrich et al. 2017

Can development finance buy foreign public support?

Why use bilateral aid?

- Development: growth, income, health, corruption, ...

  Bandyopadhyay et al. 2014, Dreher et al. 2019, Lanati & Thiele 2018, Eichenauer et al. 2021

- Geoeconomics: markets, buying votes,...

  Kuziemko & Werker 2006, Fleck & Kilby 2010, Faye & Niehaus 2012, Rommel & Schaudt 2020

Goal: Soft power gains

- Aid is used as soft power instrument Nye 2002, Hattori 2003
  - *When one country gets another country to want what it wants*
- China: Official aid and lending key element of soft power

  Kurlantzick 2007, Shambaugh 2015

Can development finance buy foreign public support?

Figure 4: Mansa-Luwingu Road Project, Zambia

▶ Project Info ▶ Map ▶ Opening

Photo: Chinese Embassy in Zambia

Can development finance buy foreign public support?

We test the effectiveness of development projects as soft power instrument based on public perceptions of individuals in recipient countries in the Global South

Worldwide analysis

Global data on Chinese aid and loan projects and the approval of China

Three layers

(i) People living in the province(s) where a project takes place
(ii) People living in other areas of the country with less direct exposure
(iii) International audiences without direct exposure to projects

Micro data

Individual-level data for 1.5 million respondents on the province level

Precise dates

Collection of project commitment, start, and end dates

Can development finance buy foreign public support?

We test the effectiveness of development projects as soft power instrument based on public perceptions of individuals in recipient countries in the Global South

Short-term soft power effects

- **Event study approach** around project-related events
- Approval **increases** after project completion

Longer-term soft power effects

- **Instrumental variable approach** using Chinese raw material production
- Effect **depends** on the unit of analysis

Province	Country	Global	3rd Country
▼	▲	◆	▲ S

Data

Data

Chinese Official Finance

- **AidData's Global Chinese Official Finance Data**
  Bluhm et al. 2020, Dreher et al. 2022
- 3,485 projects, USD 273.6bn, 2000–2014, 2,092 geocoded ▸ Map
- **New data**: project-level commitment, start, and end dates ▸ Details

Gallup World Poll

- Individual level, repeated cross section, 140 countries, 2006 to 2018
- **Core question**: *Do you approve of the job performance of the leadership of China?*
- Exact interview date and spatial identifier GADM ADM1 ▸ Map

Short-term effects

Short term

Event study approach

- GWP needs **four weeks** to undertake a country year survey wave
- These survey waves *coincide with project events*
- Timing of the survey relative to project event is **random**
- We analyze the opinion on the Chinese government around project events
- Compare individuals interviewed one month **before to after event**
- Use high dimensional fixed effects to control confounding factors

Short term

$$Support_{ipcdy} = \beta post_{icdy} + \gamma X_{ipcdy} + \delta S_d + \zeta_{pcy} + \epsilon_{icpdy} \quad (1)$$

- $Support_{ipcdy}$ measures the approval of the Chinese government of individual i living in province p and country c interviewed on day d in year y
- $post_{icdy}$ indicates if interview occurred after project event or not
- X_{ipcdy} individual-level controls: gender, age, age^2, education, urban
- S_d survey-level controls: weekday, survey day
- ζ_{pcy} denotes province-year-fixed effects
- ϵ_{ipcdy} denotes the error term
- We restrict the sample to 30 days before and after the event

Short term

Table 1: Project Events and Approval of China

	All	Commit.	Start	End
Post	0.0108	-0.0509	0.0225	0.0303*
	(0.0121)	(0.0373)	(0.0154)	(0.0156)
Observations	32,716	5,610	15,362	15,465
R-squared	0.224	0.316	0.157	0.210
Level	Country	Country	Country	Country
Size	All	All	All	All
Number of Countries	38	9	19	20
Number of Provinces	467	128	185	247
Number of Projects	46	10	21	22

SE clustered by country-date

*** p<0.01, ** p<0.05, * p<0.1

▸ By Flow ▸ Large ▸ Province

Short Term

More Details & Robustness Checks

- Project details — ▶ Details
- Representativeness of projects — ▶ All Projects
- Pretrends and event study plots — ▶ Pretrends
- Randomization inference test — ▶ Randomization
- Alternative bandwidths — ▶ Bandwidths
- Different clustering — ▶ Cluster

Longer-term effects

Instrumental Variable Approach

Following Bluhm et al. (2020) and Dreher et al. (2021)

- Bartik-style instrument Werker et al. 2009, Nunn & Qian 2014
- China overproduces raw materials and offloads excess production to foreign markets which are used as inputs for development finance projects
    - Aluminum, cement, glass, iron, steel, and timber
- Interacted with variable varying between provinces:
  the province-specific probability of receiving development projects: $\mu_p = 1/15 \sum_{t=1}^{15} \mu_{cpt}$
- Differential effect of surplus Chinese project inputs on public opinion in provinces with high vs. low probability of receiving development projects

▸ Graphs

Longer term: IV approach

First stage

$$Project_{pt} = \beta(Input_{t-2} * \mu_p) + \sum_j \delta_j X^j_{pt} + \zeta_p + \eta_{ct} + \epsilon_{cpt} \quad (2)$$

Second stage

$$Opinion_{pt} = \hat{Project}_{t-1} + \sum_j \delta_j X^j_{pt} + \zeta_p + \eta_{ct} + \epsilon_{cpt} \quad (3)$$

- $Input_{t-2}$ denotes logged factor of Chinese raw material production
- μ_p denotes province-specific probability of receiving development projects
- $\sum_j \delta_j X^j_{pt}$ denotes aggregated individual-level controls
- ζ_p denotes province-fixed effects
- η_{ct} denotes country-year-fixed effects
- ϵ_{cpt} denotes the error term

Table 2: Project Completion and Approval of China

	Province	Country	World
		OLS	
Chinese OF (t-1)	-0.00380	0.00184**	4.53e-06*
	(0.00301)	(0.000852)	(2.49e-06)
		2SLS	
Chinese OF (t-1)	-0.0722*	0.00206**	3.92e-06
	(0.0389)	(0.000973)	(2.90e-06)
Observations	6,296	452	452
Country FE		yes	yes
Year FE		yes	
Country-Year FE	yes		
Province FE	yes		
Kleibergen-Paap F	22.14	463.3	24,925

SE clustered by country

*** p<0.01, ** p<0.05, * p<0.1

▸ IV Ctry ▸ First Stage ▸ Large ▸ Flow ▸ Randomization

Longer term: IV approach

Mechanisms

▸ Results

- Positive longer-term income effects in recipient country
- Greater satisfaction with current living standard
- Higher satisfaction with public services
- Lower perception of corruption
- No significant effect on attitudes on migrants and environment

Net assessment of soft power effects

Projects implemented worldwide ▸ Results

- There is **no global effect** on the opinion on China
- Implemented projects impact image of China in *third countries*:
  - Increase opinion in Africa, in politically neutral countries (“swing states”)
  - Polarization: positive effect where approval is already high, negative when low

Win-win cooperation ▸ Results

- Implementation of Chinese development projects **improves citizens attitudes towards their national government** in project provinces & recipient countries

Conclusion

Conclusion

Chinese development finance is an effective soft power tool

- **Chinese development finance increases foreign public support** in recipient countries
- Short run: Project *completion increases China approval* by 3 pp
- Longer run: *Additional project increases China approval* by 0.2 pp
- Positive approval effects in **subsets** of third countries

Thought experiment

- Take the country with a high number of projects in the sample and see how opinion of China depends on development finance
- **Cambodia with "aid"** (*91 projects*): 77% approval of China
- **Cambodia without "aid"**: est. 59% approval of China, - 18 percentage points

Cambodia is host to second highest number of completed projects, sample mean is 8.

Conclusions

Thank you very much.

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Appendix

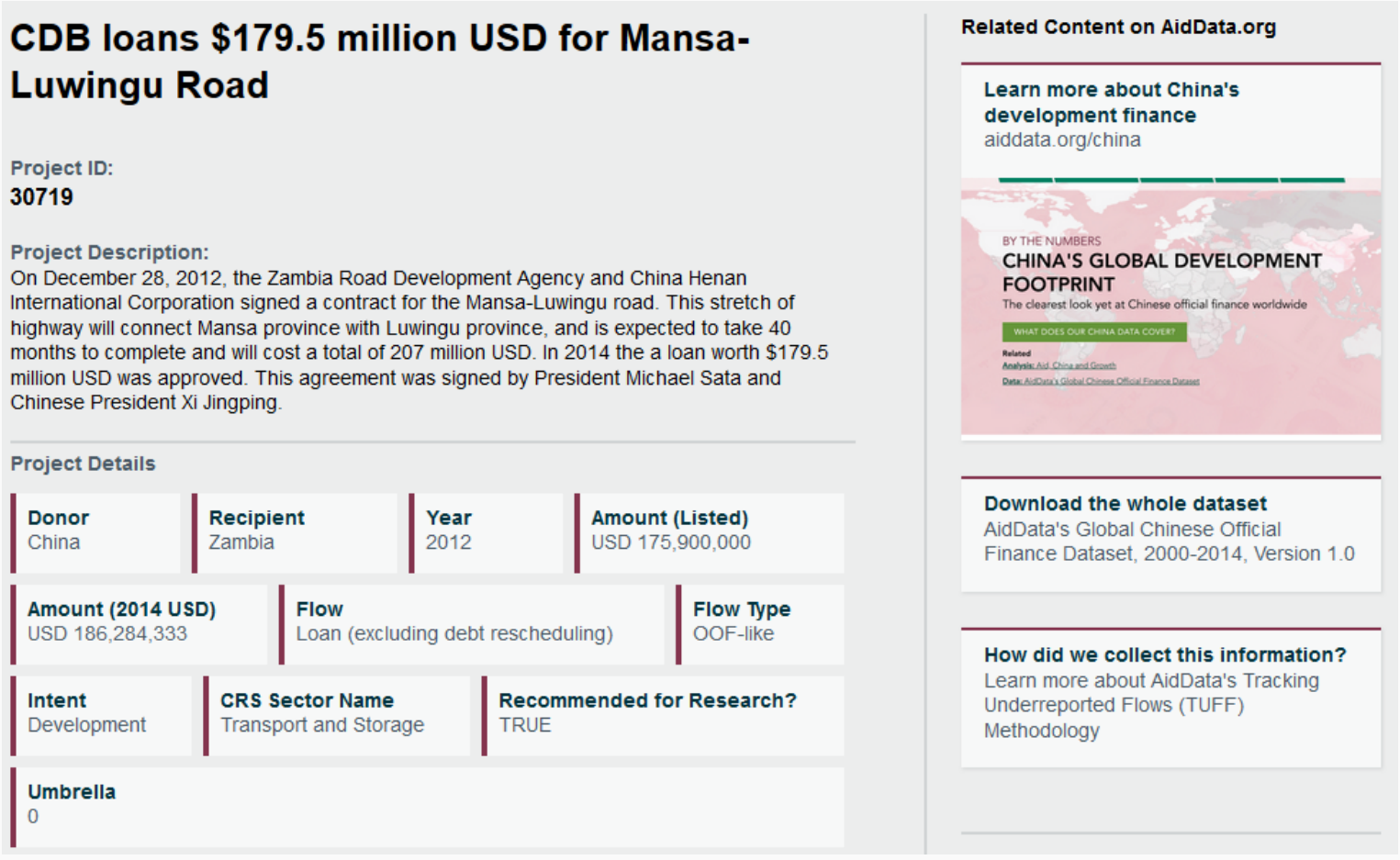

Figure 5: AidData, Mansa-Luwingu Road Project

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https://china.aiddata.org/projects/30719

Chinese Development Finance as Soft Power Instrument

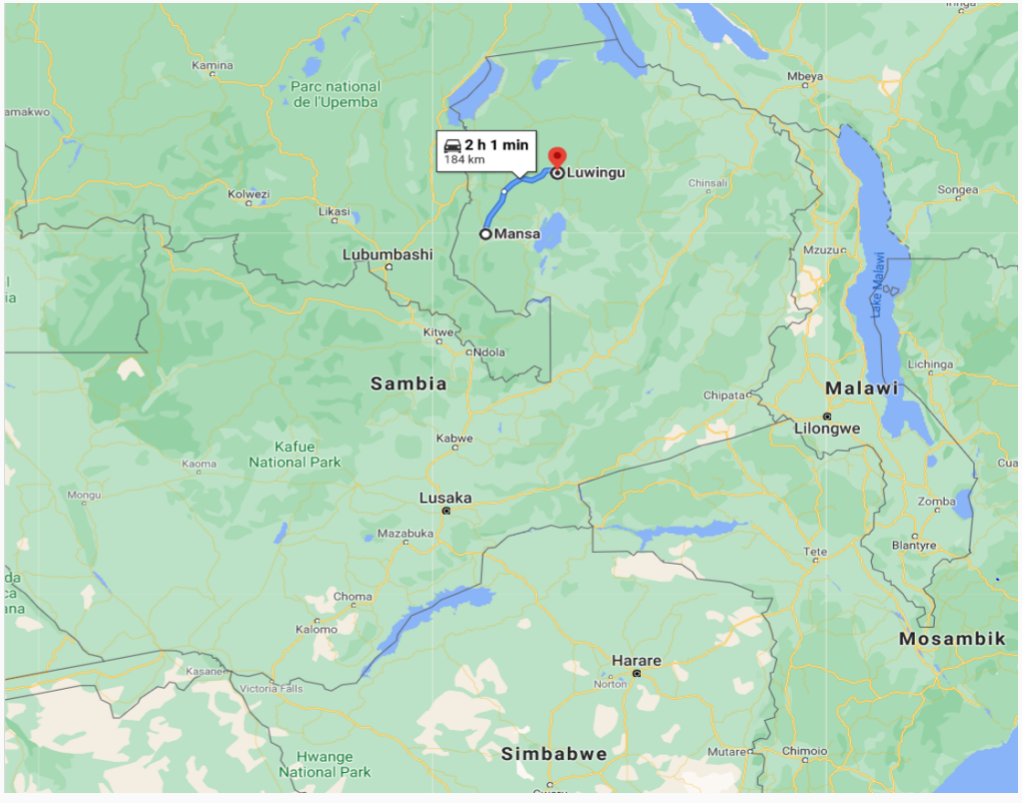

Figure 6: Map, Mansa-Luwingu Road Project

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Google Maps

Introduction

June 18, 2016: Mansa-Luwingu Road Project, Zambia, officially opened

Figure 7: Ambassador Youming

Figure 8: President Lungu

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Photo: Lusakatimes.com

Data

Collection of project-level dates

- Dates only scarecly populated (ca. 25%)
- Vast information on projects in project source documents
- Reopened documents and retrieved project event information ▸ Details
- Additional online search in Chinese speaking online outlets
- Increased coverage to 50% for start and end dates ▸ Details
- Quality assurance for both old and new project dates

▸ Back

Data

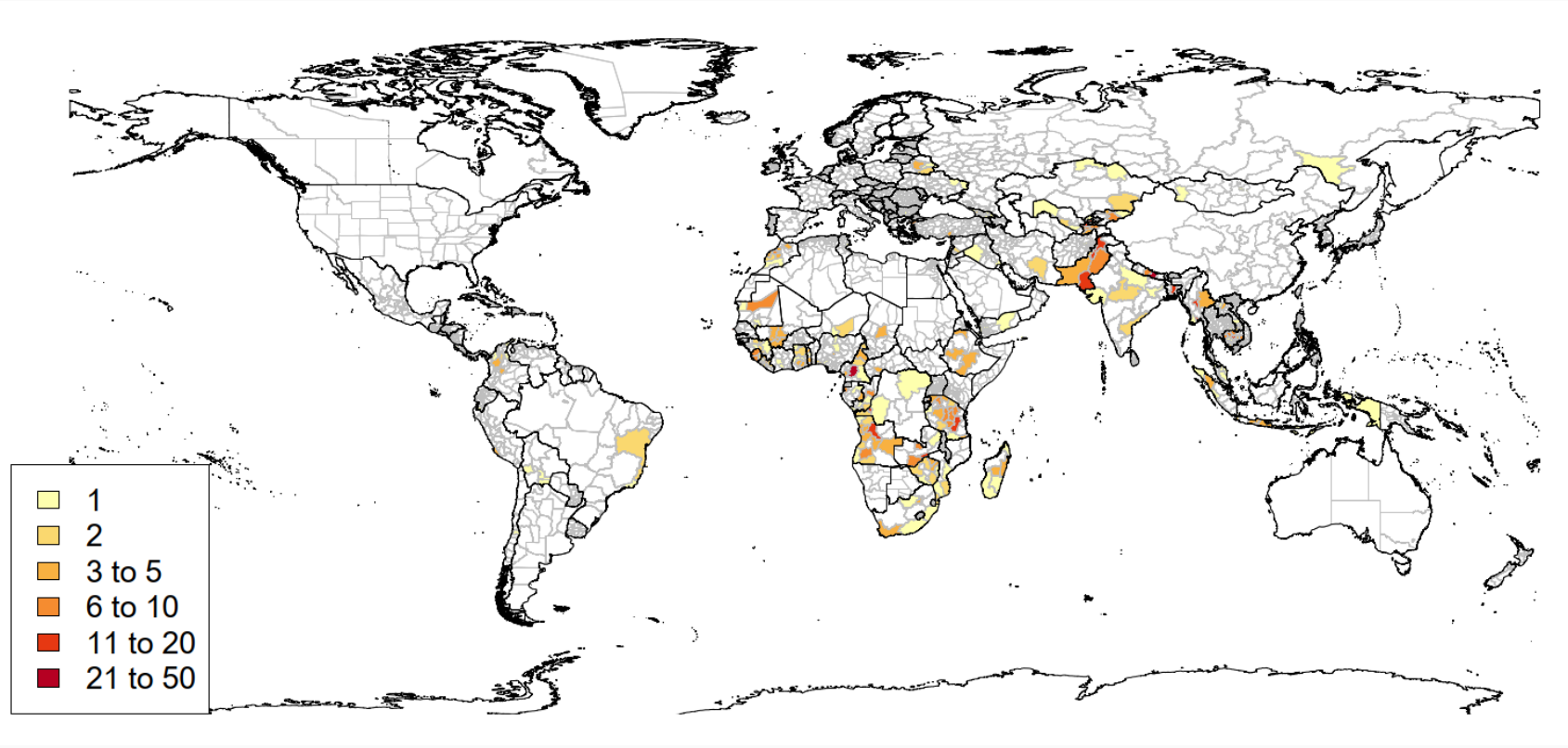

Figure 9: Number of completed projects by province (2000-2014)

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Data

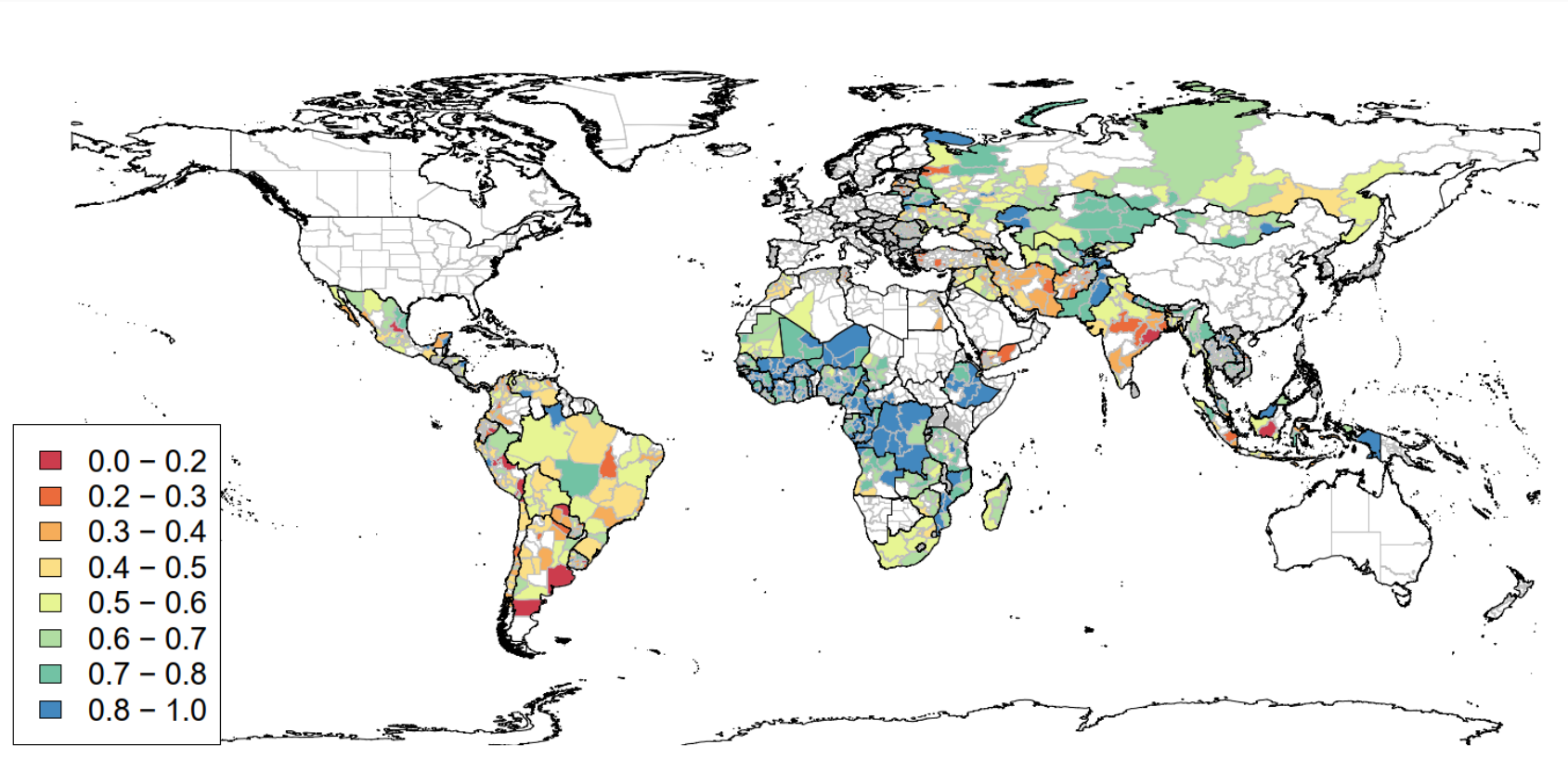

Figure 10: Average approval of the Chinese government (2006-2018)

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Event Study Results

Table 3: Large Projects

VARIABLES	All	Commit.	Start	End
Post	0.0243	0.0347	0.0413*	0.0574**
	(0.0185)	(0.0561)	(0.0249)	(0.0272)
Observations	15,630	2,169	5,619	7,865
R-squared	0.191	0.267	0.089	0.157
Level	Country	Country	Country	Country
Size	Large	Large	Large	Large
Number of Countries	21	5	7	11
Number of Provinces	278	61	62	161
Number of Projects	24	5	8	11

SE clustered by country-date

*** p<0.01, ** p<0.05, * p<0.1

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Event Study Results

Table 4: ODA Projects

VARIABLES	All	Commit.	Start	End
Post	0.0228	-0.0421	0.0462**	0.0412**
	(0.0145)	(0.0812)	(0.0183)	(0.0171)
Observations	21,543	1,744	10,528	12,226
R-squared	0.198	0.377	0.132	0.183
Level	Country	Country	Country	Country
Size	All	All	All	All
Number of Countries	26	3	14	15
Number of Provinces	327	58	125	171
Number of Projects	29	3	15	17

SE clustered by country-date

*** p<0.01, ** p<0.05, * p<0.1

▶ OOF ▶ Back

Event Study Results

Table 5: OOF Projects

VARIABLES	All	Commit.	Start	End
Post	-0.0178	-0.0329	-0.0440	0.0224
	(0.0216)	(0.0447)	(0.0295)	(0.0382)
Observations	10,242	3,730	3,690	2,706
R-squared	0.268	0.287	0.061	0.244
Level	Country	Country	Country	Country
Size	All	All	All	All
Number of Countries	12	6	4	4
Number of Provinces	134	80	33	47
Number of Projects	13	6	4	4

SE clustered by country-date

*** p<0.01, ** p<0.05, * p<0.1

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Province Level Results

Table 6: Province Level

	(1) All	(2) Commit.	(3) Start	(4) End
Post	0.00663	-0.0715**	0.0219	0.0254
	(0.0116)	(0.0362)	(0.0147)	(0.0158)
Post * Project province	0.0329	0.151*	0.00667	0.0402
	(0.0261)	(0.0813)	(0.0343)	(0.0322)
Sum of coefficients	0.0395	0.0795	0.0285	0.0656**
Joint sign. (p-value)	(0.1167)	(0.3173)	(0.3949)	(0.0379)
Observations	29,331	5,610	15,362	15,465
R-squared	0.217	0.317	0.157	0.210
Number of countries	35	9	19	20
Number of provinces	420	128	185	247
Number of projects	41	10	21	22
Province-year FE	✓	✓	✓	✓

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Data show: project duration strongly varies!

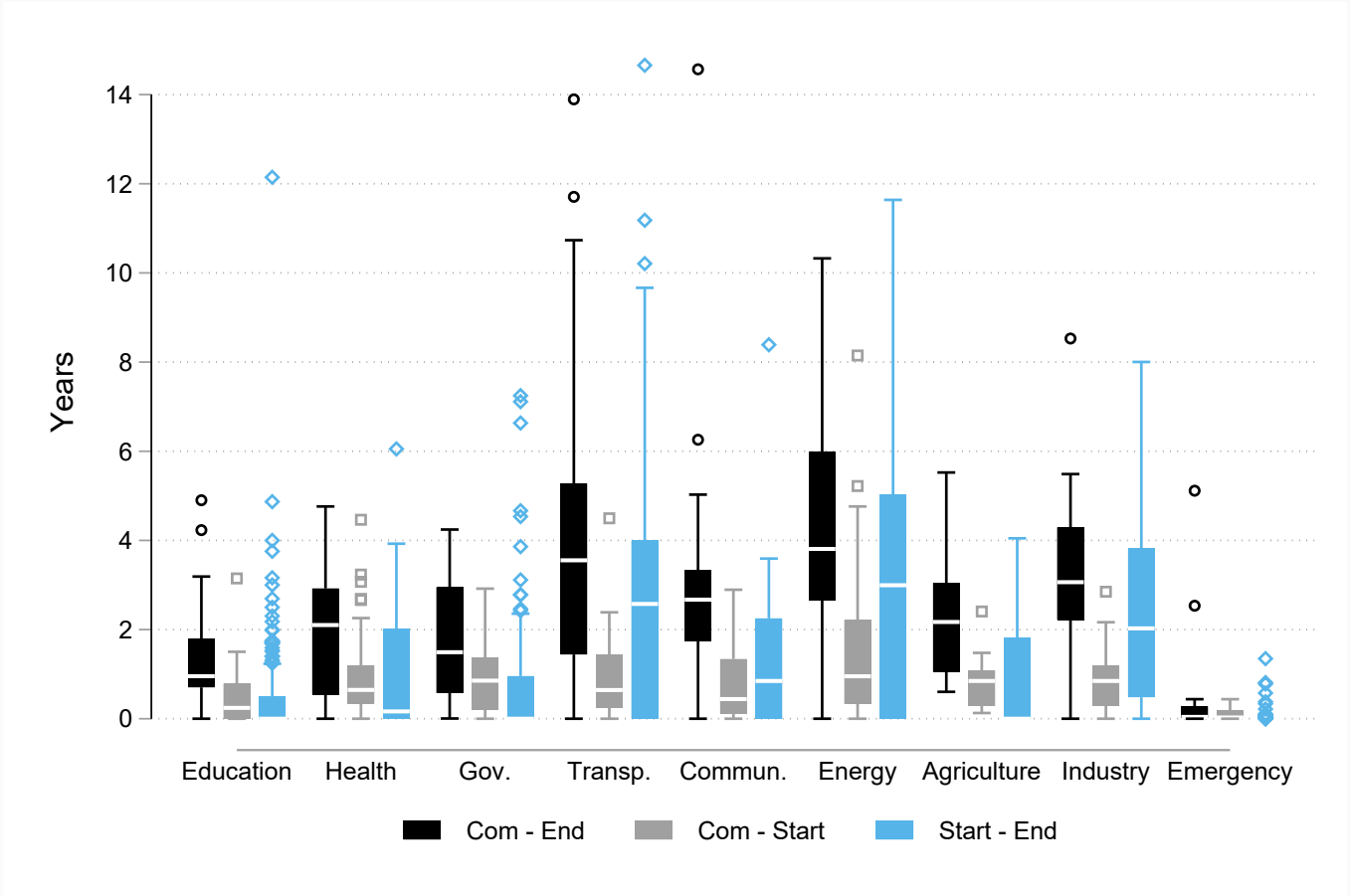

Figure 11: Project Duration by Sector

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Project Details

Table 7: Project Details Large Projects

Recipients	Title	ID	Year	Coefficient	SE
Gabon	Loan for Grand Poubara Hydroelectric Project	85	2013	0.00707	(0.0661)
Mauritius	Grants 480 billion CNY for the sewer netwok LOT2 project	145	2014	0.000662	(0.0929)
Cote D'Ivoire	Post-crisis reconstruction	718	2009	-0.158	(0.126)
Nigeria	Construction of Four Primary Schools	2134	2012	-0.0374	(0.0721)
Guinea	335 million USD loan for Keleta dam	13823	2015	-0.101*	(0.0559)
Sudan	700 million USD loan for construction of new Khartoum Airport	30543	2014	-0.0572	(0.230)
Zambia	CDB loans 179.5 million USD for Mansa-Luwingu Road	30719	2016	0.292**	(0.133)
Viet Nam	EXIMbank loans USD 250 million for Ninh Binh fertilizer plant	34478	2012	8.018***	(2.883)
Liberia	South-South Cooperation in Liberia	35267	2014	0.126	(0.117)
Pakistan	Grant for relief material for internally displaced persons	35903	2009	0.185***	(0.0605)
Venezuela	Construction of 3rd Joint Satellite	38297	2017	0.253*	(0.134)

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Table 8: Project Representativeness

VARIABLES	Com	Start	End	Com (dates)	Start(dates)	End (dates)
Precision	-3.11e-05	-0.000658	4.83e-05	0.000194	-0.00115	0.000278
	(0.000430)	(0.000623)	(0.000593)	(0.00333)	(0.00121)	(0.00115)
ODA	-0.00768***	0.00152	0.00289	-0.0324*	0.00230	0.00510
	(0.00289)	(0.00419)	(0.00399)	(0.0195)	(0.00805)	(0.00796)
Social Infra	0.00101	0.00490	0.000637	0.0197	0.00876	0.000696
	(0.00347)	(0.00502)	(0.00478)	(0.0316)	(0.00933)	(0.00882)
Econ Infra	0.00409	0.00959	0.00543	0.0170	0.0162	0.00992
	(0.00418)	(0.00605)	(0.00576)	(0.0324)	(0.0114)	(0.0113)
Production	0.0113**	0.00150	-0.00619	0.0647*	0.00405	-0.0126
	(0.00501)	(0.00726)	(0.00691)	(0.0379)	(0.0138)	(0.0132)
Year (Com)				0.00513		
				(0.00342)		
Year (Start)					0.00277**	
					(0.00127)	
Year (End)						0.00206*
						(0.00112)
Observations	2,651	2,651	2,651	350	1,393	1,381
R-squared	0.006	0.002	0.001	0.027	0.007	0.005

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

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Project Details

Table 9: Project Details

recipients	project_title	project_id	year
Gabon	Loan for Grand Poubara Hydroelectric Project	85	2013
Mauritius	China granted 480 billion CNY for the sewer netwok LOT2 project	145	2014
Sudan	China provided a loan to Sudan for Hydro-Mechanic Components of the Merowe hydroelectric power station	178	2009
Cote D'Ivoire	Post-crisis reconstruction	718	2009
Liberia	China contributes peacekeepers to UN mission in Liberia	1552	2010
Nigeria	China Constructs Four Primary Schools	2134	2012
Sudan	Donation of musical instruments	2465	2011
Guinea	China provides 335 million USD loan for Keleta dam	13823	2015
Togo	China Sends 18th Medical Team to Togo	25286	2011
Congo|Rep.	Scholarships for higher education, 2012-2013	30143	2012
Sudan	China Exim Bank loans 700 million USD for construction of new Khartoum Airport (link to project ID 33827)	30543	2014
Zambia	CDB loans 179.5 million USD for Mansa-Luwingu Road	30719	2016
Viet Nam	EXIMbank loans USD250 million for Ninh Binh Nitrogenous fertilizer plant	34478	2012
Madagascar	China Donates Anti-Malaria Medicine	35213	2008
Liberia	South-South Cooperation in Liberia	35267	2014
Pakistan	China grants materials and funds for a digital seismic network in Pakistan (maybe linked to 35377)	35615	2013
Laos	Chinese government provides preferential loan of 16.7 million USD for a Lao Airlines hangar and maintenance training center project	35759	2012
Pakistan	China provides in-kind grant of 30 million Chinese Yuan worth of relief material to Pakistan for internally displaced persons	35903	2009
Somalia	China Donates Goods to Banadir Hospital	36408	2014
Colombia	China donates 2 Harbin Y-12 aircraft to Satena, Colombian national airline	37138	2013
Indonesia	China develops earthquake and tsunami early warning system for Indonesia	37897	2010
Venezuela	Construction of 3rd Joint Satellite [Linked to 38290]	38297	2017
Costa Rica	China Offers 50 Scholarships Per Year to Costa Rican Students	40099	2010
Lebanon	Chinese engineers clear landmines in South Lebanon	40968	2013
Jordan	China donates 240 caravans and equipment to Jordan for Syrian refugees	41253	2012
Israel	China Hosts 'Experience China' Cultural Event in Israel	41293	2009

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Project Details

Table 10: Project Details Large Projects

recipients	project_title	project_id	year
Gabon	Loan for Grand Poubara Hydroelectric Project	85	2013
Mauritius	China granted 480 billion CNY for the sewer netwok LOT2 project	145	2014
Sudan	China provided a loan to Sudan for Hydro-Mechanic Components of the Merowe hydroelectric power station	178	2009
Cote D'Ivoire	Post-crisis reconstruction	718	2009
Nigeria	China Constructs Four Primary Schools	2134	2012
Guinea	China provides 335 million USD loan for Keleta dam	13823	2015
Sudan	China Exim Bank loans 700 million USD for construction of new Khartoum Airport (link to project ID 33827)	30543	2014
Zambia	CDB loans 179.5 million USD for Mansa-Luwingu Road	30719	2016
Viet Nam	EXIMbank loans USD 250 million for Ninh Binh Nitrogenous fertilizer plant	34478	2012
Liberia	South-South Cooperation in Liberia	35267	2014
Laos	Chinese government provides preferential loan of 16.7 million USD for a Lao Airlines hangar and maintenance training center project	35759	2012
Pakistan	China provides in-kind grant of 30 million Chinese Yuan worth of relief material to Pakistan for internally displaced persons	35903	2009
Venezuela	Construction of 3rd Joint Satellite [Linked to 38290]	38297	2017

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Results

Table 11: Alternative Bandwidths

VARIABLES	BW 15	BW 20	BW 25	BW 50	BW 60	BW 90
Post	0.00660	0.0314	0.0336	0.0329*	0.0330*	0.0271
	(0.0198)	(0.0218)	(0.0205)	(0.0199)	(0.0199)	(0.0196)
Observations	13,273	14,519	15,150	15,838	15,839	17,302
R-squared	0.199	0.203	0.208	0.211	0.211	0.230
Individual Controls	yes	yes	yes	yes	yes	yes
Survey Controls	yes	yes	yes	yes	yes	yes
Region-Year FE	yes	yes	yes	yes	yes	yes

SE clustered by province-year

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

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Table 12: Alternative Bandwidths Large Projects

VARIABLES	BW 15	BW 20	BW 25	BW 50	BW 60	BW 90
Post	0.0168	0.0600**	0.0634**	0.0489*	0.0490*	0.0348
	(0.0247)	(0.0300)	(0.0271)	(0.0261)	(0.0261)	(0.0273)
Observations	6,228	7,136	7,611	8,112	8,113	8,711
R-squared	0.129	0.136	0.150	0.163	0.163	0.172
Individual Controls	yes	yes	yes	yes	yes	yes
Survey Controls	yes	yes	yes	yes	yes	yes
Region-Year FE	yes	yes	yes	yes	yes	yes

SE clustered by province-year

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

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Results

Table 13: Changed Clusters

VARIABLES	Robust	Province	Country	Country-Year
Post	0.0348**	0.0348*	0.0348***	0.0348*
	(0.0149)	(0.0178)	(0.0103)	(0.0199)
Observations	15,465	15,465	15,465	15,465
R-squared	0.210	0.210	0.210	0.210
Individual Controls	yes	yes	yes	yes
Survey Controls	yes	yes	yes	yes
Region-Year FE	yes	yes	yes	yes

SE clustered as indicated in column title

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

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Results

Table 14: Project Completion by Project

VARIABLES	85	145	718	2134	13823	30543	30719	34478	35267	35903	38297
Post	0.00707	0.000662	-0.158	-0.0374	-0.101*	-0.0572	0.292**	8.018***	0.126	0.185***	0.253*
	(0.0661)	(0.0929)	(0.126)	(0.0721)	(0.0559)	(0.230)	(0.133)	(2.883)	(0.117)	(0.0605)	(0.134)
Observations	967	520	956	701	826	278	445	436	526	1,463	493
R-squared	0.111	0.084	0.091	0.174	0.068	0.116	0.046	0.296	0.138	0.093	0.173
Individual Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Survey Controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Region-Year FE	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

SE clustered by country-date

*** p<0.01, ** p<0.05, * p<0.1

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IV Results

Table 15: Project Completion and Approval of China

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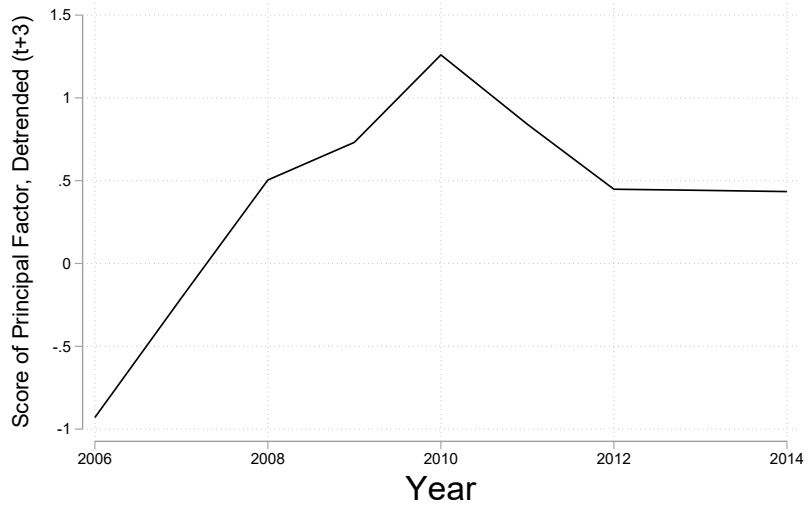
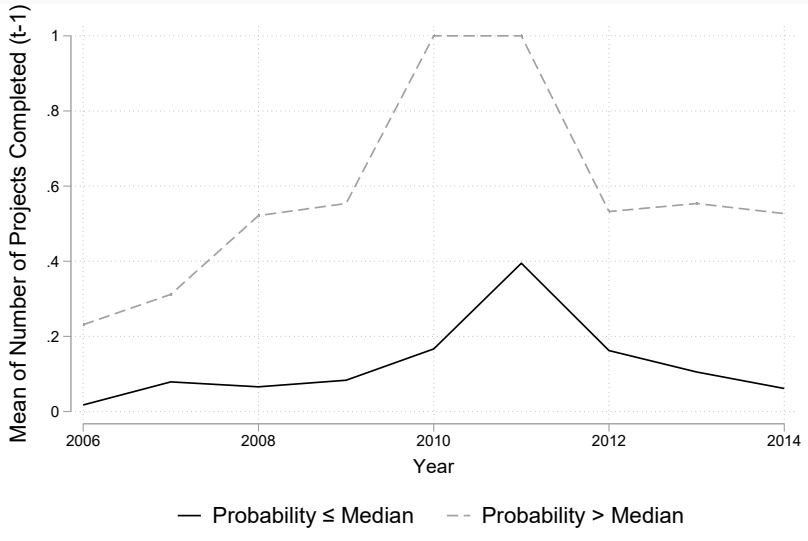
	Province	Country	World
	Panel B: Reduced form		
Input*probability (t-3)	-0.139**	0.00252**	4.75e-06
	(0.0677)	(0.00109)	(3.52e-06)
	Panel D: First-stage		
Input*probability (t-3)	1.929***	1.222***	1.214***
	(0.410)	(0.0568)	(0.00769)
Observations	6,296	452	452
Country FE		yes	yes
Year FE		yes	
Country-Year FE	yes		
Province FE	yes		
Kleibergen-Paap F	22.14	463.3	24,925

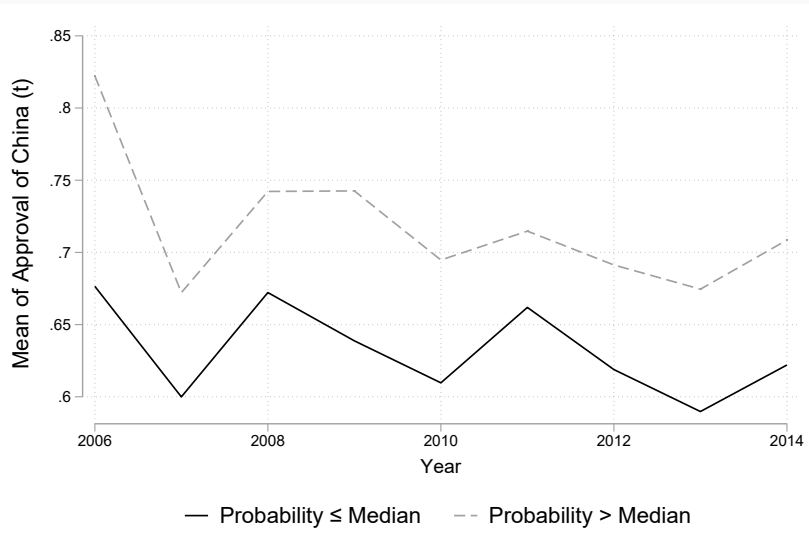
SE clustered by country

*** p<0.01, ** p<0.05, * p<0.1


Log Production Volume of Respective Input (t+3)
.4
.2
0
-.2
-.4
2006
2008
2010
2012
2014
Year
Steel
Cement
Iron
Timber
Glass
Alumn.


Score of Principal Factor, Detrended (t+3)
1.5
1
.5
0
-.5
-1
2006
2008
2010
2012
2014
Year


Mean of Number of Projects Completed (t-1)
1
.8
.6
.4
.2
0
2006
2008
2010
2012
2014
Year
Probability ≤ Median
Probability > Median


Mean of Approval of China (t)
.85
.8
.75
.7
.65
.6
2006
2008
2010
2012
2014
Year
Probability ≤ Median
Probability > Median

Back

instrumental Variable Regression

Table 16: Large Projects Back

	Province	Country	World
	Panel A: OLS		
Chinese OF (t-1)	-0.000135	0.00127*	4.33e-06*
	(0.00342)	(0.000669)	(2.58e-06)
	Panel B: Reduced form		
Input*probability (t-3)	-0.188*	0.00172*	4.97e-06
	(0.0997)	(0.000893)	(3.72e-06)
	Panel C: 2SLS		
Chinese OF (t-1)	-0.0682*	0.00140*	4.01e-06
	(0.0400)	(0.000771)	(3.00e-06)
	Panel D: First-stage		
Input*probability (t-3)	2.758***	1.230***	1.238***
	(0.719)	(0.0483)	(0.00803)

SE clustered by country

*** p<0.01, ** p<0.05, * p<0.1

IV Results

Table 17: Country Level instrumental Variable

VARIABLES	Country panel	Country panel
Aid	0.00733	0.00206**
	(0.0117)	(0.000973)
Observations	452	452
F-stat	3.210	22.14
Country FE	yes	yes
Year FE	yes	yes
Country level predictions	yes	
Province level predictions		yes

SE clustered by country

*** p<0.01, ** p<0.05, * p<0.1

▶ Back

IV Results

Table 18: Project Completion by Type of Flow

VARIABLES	ODA	OOF	ODA	OOF	ODA	OOF
Chinese OF (t-1)	-0.0149*	-0.00364	0.00189**	0.00380	5.61e-06	1.67e-06
	(0.00812)	(0.0141)	(0.000859)	(0.00398)	(3.50e-06)	(1.83e-05)
Observations	6296	6296	452	452	452	452
R-squared	0.003	0.003	0.068	0.062	0.039	0.045
Level	Province	Province	Country	Country	World	World
Individual Controls	yes	yes	yes	yes	yes	yes
Country FE	no	no	yes	yes	yes	yes
Year FE	no	no	yes	yes	no	no
Country-Year FE	yes	yes	no	no	yes	yes
Region FE	yes	yes	no	no	yes	yes
F-stat	136.5	37.52	553.8	13103	20783	569.4

SE clustered by country

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

▶ Back

IV Results

Table 19: Country Level Completion by Sector

VARIABLES	All	Social Infra	Econ Infra	Production	Other
Project	0.00206***	0.00213***	0.00549***	0.00253***	0.00184***
	(0.000561)	(0.000659)	(0.00188)	(0.000658)	(0.000568)
Sector		0.00883	0.0362**	0.0552*	0.0357
		(0.0118)	(0.0175)	(0.0292)	(0.0375)
Project*Sector		-0.000864	-0.00506**	-0.0272*	0.00166
		(0.00311)	(0.00210)	(0.0157)	(0.00501)
Observations	452	452	452	452	452
R-squared	0.866	0.867	0.868	0.868	0.868
Country FE	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes

SE clustered by country

*** p<0.01, ** p<0.05, * p<0.1

▶ Details ▶ Province ▶ Province Details ▶ Projects Abroad

▶ Back

IV Results

Country Level Heterogeneity

- Effect independent of continent ▸ Details
- Driven by lower middle income ▸ Details
- Driven by non-democracies ▸ Details

▸ Back

IV Results

Table 20: Sample Split by Continent

	Number of Projects				Committed Amounts			
VARIABLES	Europe	Asia	Americas	Africa	Europe	Asia	Americas	Africa
Aid	0.00910*	0.00681**	0.0105*	0.000948**	0.000602	0.000325	0.00201***	0.000414**
	(0.00467)	(0.00238)	(0.00520)	(0.000380)	(0.000576)	(0.000590)	(0.000400)	(0.000184)
Observations	101	119	72	160	101	119	72	160
R-squared	0.201	0.165	0.221	0.083	0.169	0.142	0.243	0.098
Country FE	yes	yes	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes	yes	yes
Country-Year FE	no	no	no	no	no	no	no	no
Province FE	no	no	no	no	no	no	no	no
Country level predictions	no	no	no	no	no	no	no	no
Province level predictions	yes	yes	yes	yes	yes	yes	yes	yes

SE clustered by country

*** p<0.01, ** p<0.05, * p<0.1

▶ Back

Europe includes countries of the former Soviet Union.

IV Results

Table 21: Sample Split by World Bank Income Classification

	Number of Projects			Committed Amounts		
VARIABLES	Low	Lower Middle	Upper Middle	Low	Lower Middle	Upper Middle
Aid	0.00116	0.00809**	0.00690	0.000355	-4.38e-05	0.00111*
	(0.000725)	(0.00372)	(0.00677)	(0.000294)	(0.000476)	(0.000595)
Observations	162	156	124	162	156	124
R-squared	0.071	0.049	0.185	0.073	0.029	0.191
Country FE	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes
Country-Year FE	no	no	no	no	no	no
Province FE	no	no	no	no	no	no
Country level predictions	no	no	no	no	no	no
Province level predictions	yes	yes	yes	yes	yes	yes

SE clustered by country

*** p<0.01, ** p<0.05, * p<0.1

▶ Back

Based on World Bank Income Classification. Leaving our high income countries.

IV Results

Table 22: Sample Split by Democracy

	Number of Projects		Committed Amounts	
VARIABLES	Non-Democracy	Democracy	Non-Democracy	Democracy
Aid	0.00183***	0.00409	0.000391*	0.000352
	(0.000670)	(0.00254)	(0.000210)	(0.000466)
Observations	196	196	196	196
R-squared	0.147	0.069	0.137	0.060
Country FE	yes	yes	yes	yes
Year FE	yes	yes	yes	yes
Country-Year FE	no	no	no	no
Province FE	no	no	no	no
Country level predictions	no	no	no	no
Province level predictions	yes	yes	yes	yes

SE clustered by country

*** p<0.01, ** p<0.05, * p<0.1

▶ Back

Data from Bjørnskov Rode 2020. A country is defined as democratic, if elections were conducted, these were free and fair, and if there was a peaceful turnover of legislative and executive offices following those elections.

IV Results

Table 23: Citizens' Satisfaction with

VARIABLES	Gov	City	Transport	Roads	Education	Healthcare	Housing
Chinese OF (t-1)	0.000811	0.00159***	0.000837*	0.00100	0.000296	0.000623	0.000756
	(0.00103)	(0.000465)	(0.000446)	(0.000683)	(0.000638)	(0.000534)	(0.000740)
Observations	429	478	477	477	478	474	471
R-squared	0.018	0.028	0.043	0.014	0.006	0.011	0.008
Individual Controls	yes	yes	yes	yes	yes	yes	yes
Country FE	yes	yes	yes	yes	yes	yes	yes
Year FE	yes	yes	yes	yes	yes	yes	yes
F-stat	342.6	327.5	327.9	327.9	327.9	327.7	328.9

SE clustered by country

*** p<0.01, ** p<0.05, * p<0.1

▶ Back

Table 24: Mechanisms

Back

	(1) Income	(2) Perceived income	(3) Living std up	(4) Living std down	(5) Living std good	(6) Community basics	(7) Corruption
			Panel A: Country level				
Chinese projects $_{t-1}$	0.00397*	0.00364**	0.000181	0.000454	0.00152**	0.000896**	-0.00118***
	(0.00237)	(0.00148)	(0.000604)	(0.000787)	(0.000585)	(0.000416)	(0.000434)
Observations	417	481	472	472	484	462	470
Number of countries	90	95	94	94	95	93	94
Mean of dependent variable	7.419	2.455	0.448	0.249	0.532	0.562	0.784
Country FE	✓	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓	✓
F-stat	327.7	328.9	332.5	332.5	328.1	316.2	328
			Panel B: Province level				
Chinese projects $_{t-1}$	0.225	-0.210**	-0.0619	0.0603*	-0.0408	0.0354	0.0231
	(0.200)	(0.0948)	(0.0395)	(0.0344)	(0.0464)	(0.0277)	(0.0377)
Observations	6,037	6,686	6,478	6,478	6,705	6,405	6,549
Number of countries	91	95	94	94	95	93	94
Number of provinces	1,415	1,465	1,439	1,439	1,465	1,444	1,443
Mean of dependent variable	7.540	2.476	0.433	0.249	0.543	0.577	0.799
Country-year FE	✓	✓	✓	✓	✓	✓	✓
Region FE	✓	✓	✓	✓	✓	✓	✓
F-stat	5.037	21.61	21.37	21.37	21.97	12.18	22.59

Table 25: Chinese Activities Worldwide & Abroad

Back

	(1) All	(2) Aid recipient	(3) Asia	(4) Africa	(5) Political neutral	(6) Opinion: low	(7) Opinion: neutral	(8) Opinion: high
	Panel A: Global South							
Projects worldwide $_{t-1}$	7.71e-05	6.23e-05	-0.000145	0.000196**	0.000180*	-0.000236**	0.000199	0.000186**
	(6.38e-05)	(7.12e-05)	(0.000166)	(7.76e-05)	(0.000102)	(0.000113)	(0.000133)	(7.75e-05)
Observations	452	388	119	160	177	136	154	162
	Panel B: Third country (projects weighted by political proximity to recipient country)							
Projects abroad $_{t-1}$	0.00122	0.00200**	0.00407**	0.00478**	0.00239*	-0.00149	0.000119	0.00125
	(0.000777)	(0.000906)	(0.00156)	(0.00185)	(0.00134)	(0.00185)	(0.00118)	(0.000785)
Observations	443	382	113	160	177	126	154	161
	Panel C: Third country (projects weighted by geographic proximity to recipient country)							
Projects abroad $_{t-1}$	0.00962	0.0104	-0.109**	0.0298	0.0175	-0.0247	0.0303	0.00838
	(0.0140)	(0.0162)	(0.0491)	(0.0198)	(0.0210)	(0.0302)	(0.0292)	(0.0169)
Observations	449	388	119	160	177	132	154	161
	Panel D: Third country (projects weighted by ethnic proximity to recipient country)							
Projects abroad $_{t-1}$	7.57e-05	0.000101	-0.00183***	0.000131	0.000189*	-0.000478*	-6.42e-05	6.81e-05
	(6.62e-05)	(6.85e-05)	(0.000576)	(9.02e-05)	(0.000102)	(0.000275)	(0.000140)	(0.000101)
Observations	449	388	119	160	177	132	154	161

Table 26: Chinese projects and approval of the national government

Back

	(1) Short-term country	(2) Short-term province	(3) Longer-term country	(4) Longer-term province
Post/project completed	0.0115	-0.00148	0.00211**	0.0992**
	(0.0178)	(0.0180)	(0.000821)	(0.0453)
Post*project province		0.116***		
		(0.0437)		
Observations	18,994	18,994	443	6,236
Number of countries	19	19	86	86
Number of provinces	248	248	-	1,337
Number of projects	21	21	-	-
F-stat	-	-	87.69	16.38
Province-year FE	✓	✓		
Country FE			✓	
Year FE			✓	
Country-year FE				✓
Region FE				✓

The dependent variable is binary and indicates whether or not an interviewed individual approves of the national government based on the question “Do you approve or disapprove the job performance of the (leader/head/president) of this country?”

Data show: project duration strongly varies!

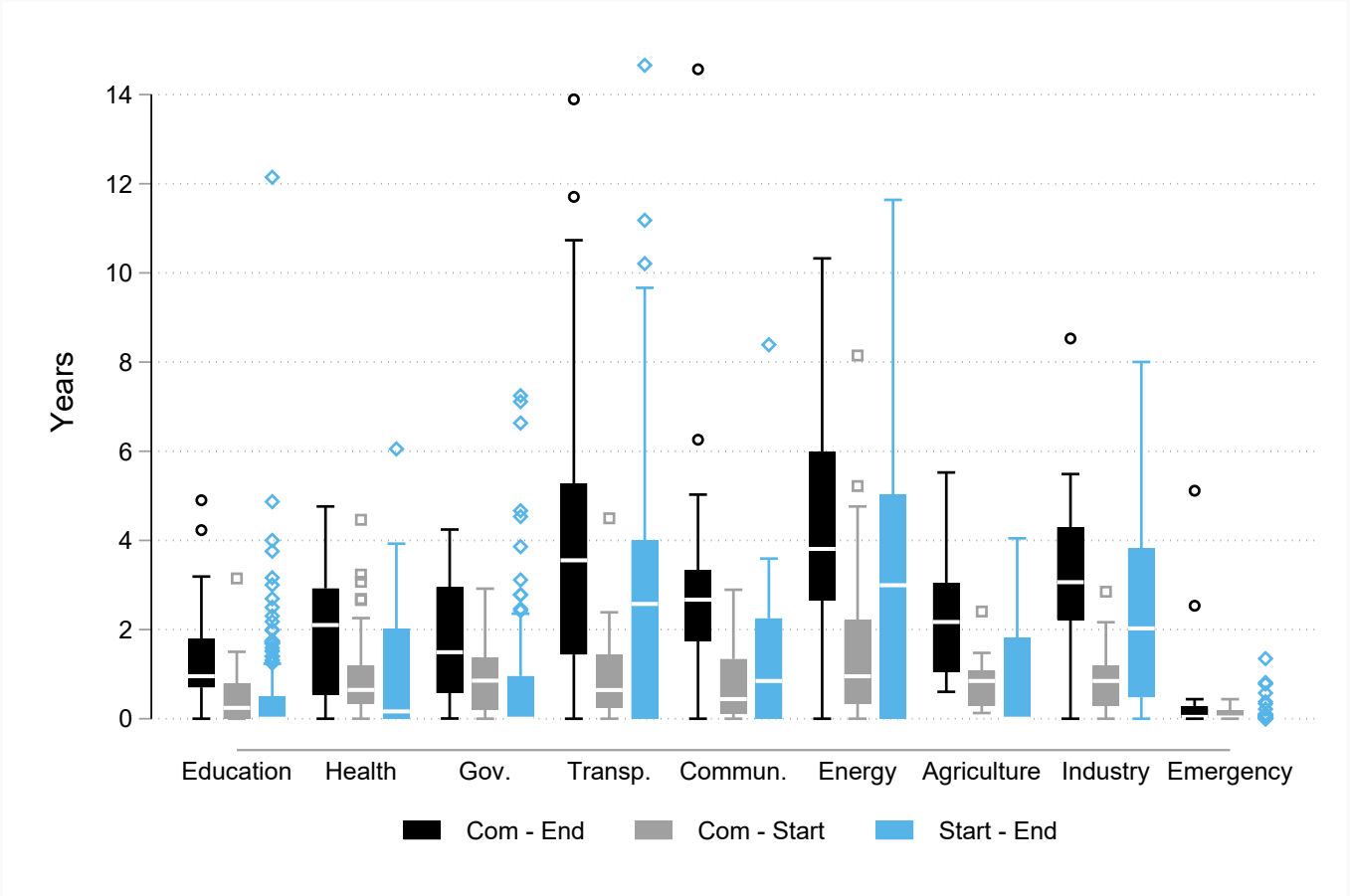


Figure 12: Project Duration by Sector

Back

Data show: project duration strongly varies!

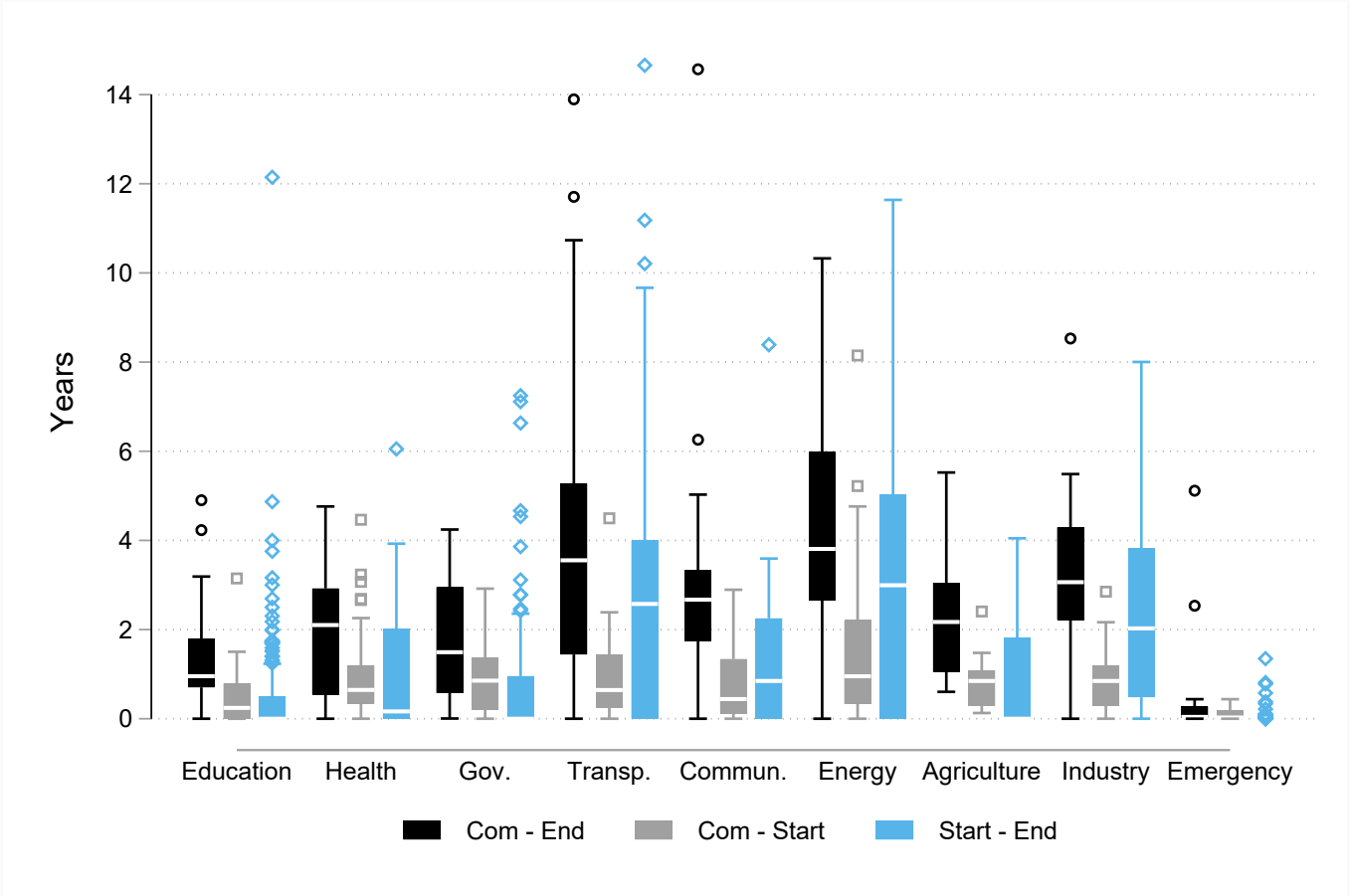


Figure 13: Project Duration by Sector

▶ Back

Figure 14: Chinese projects and support for the Chinese government, event study plots

Back

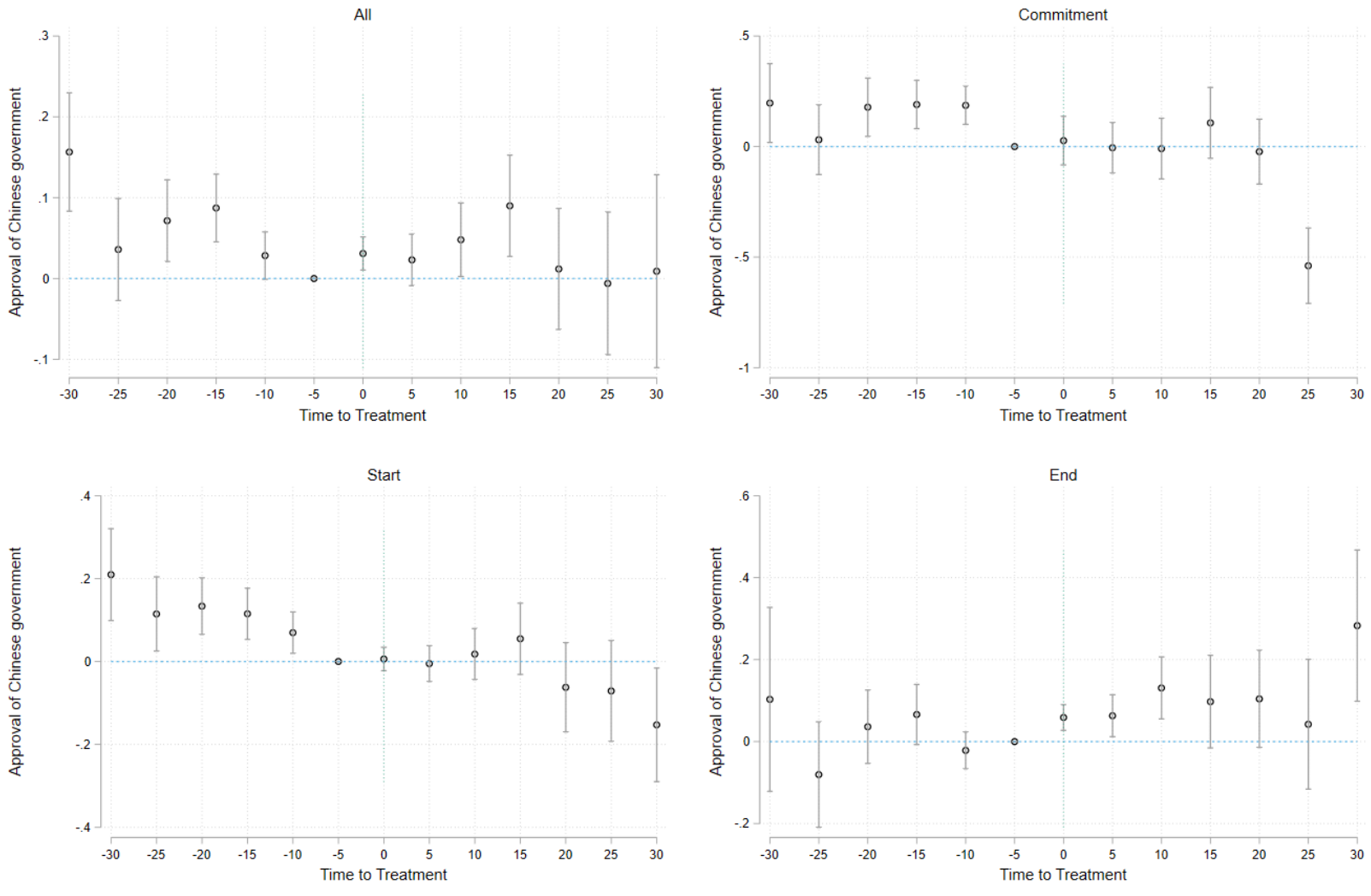
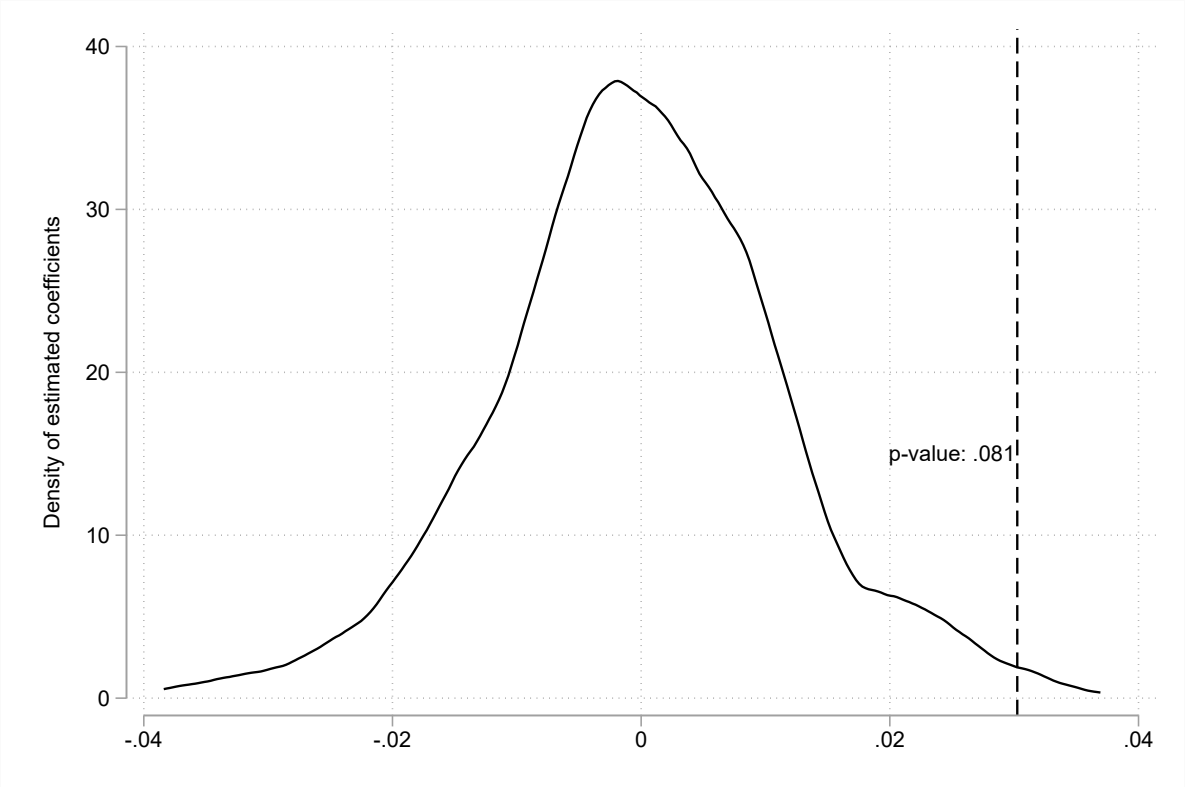


Figure 15: Randomization inference test, event study results

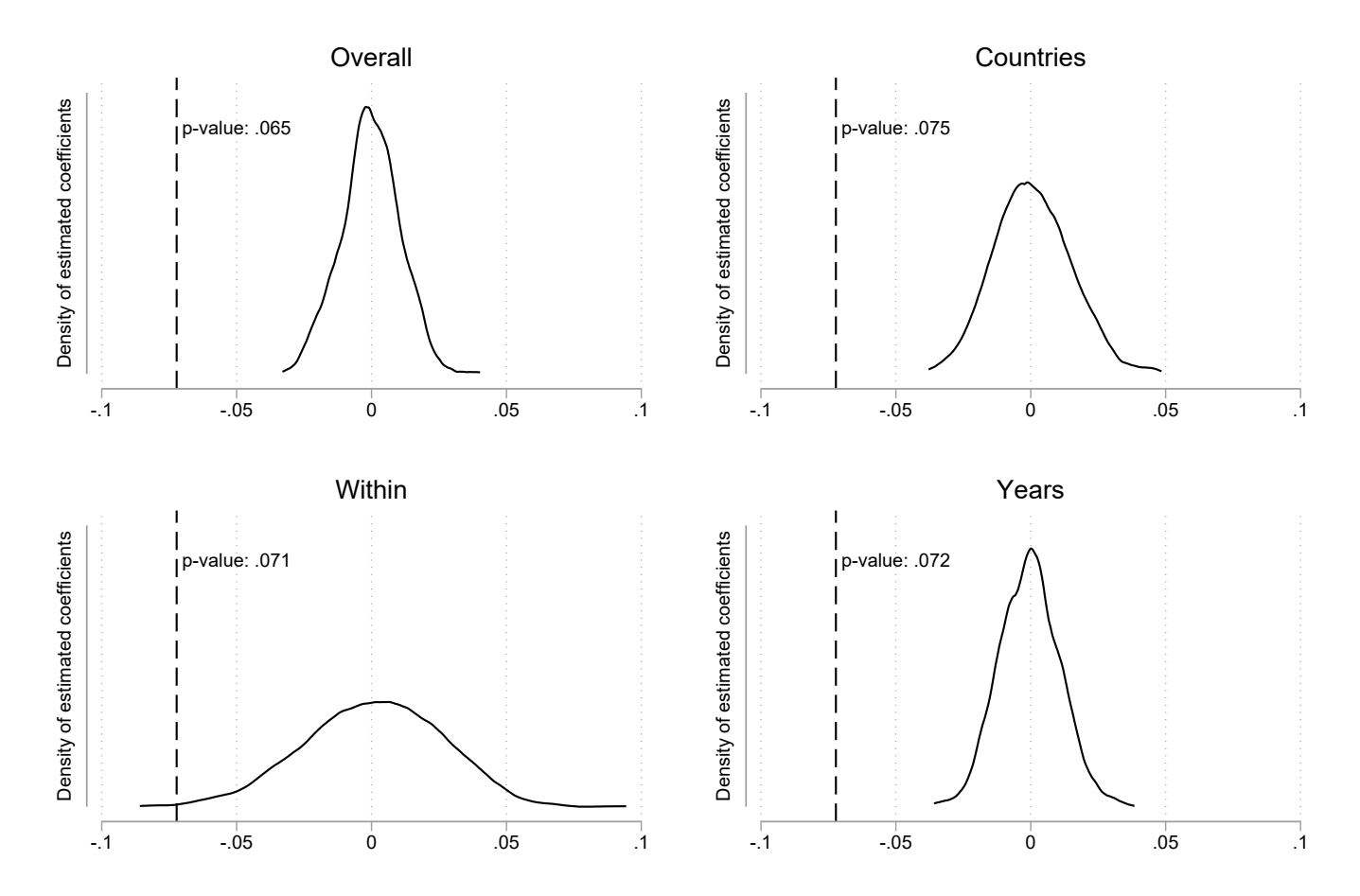
Back



Notes: The figure shows the randomization inference test based on 999 Monte Carlo replications for the event study analysis. For this, we first draw 22 60-day event windows randomly from the GWP, and then draw one random date from each of these 22 windows that we use as placebo treatment. The original estimate is shown by the dashed vertical line. The p-values is the proportion of times that the absolute value of the t-statistic in the simulated data exceeds the absolute value of the original t-statistic.

Figure 16: Randomization inference test, instrumental variables results

Back



Notes: The figure shows the distribution of point coefficients of the completion of Chinese development projects based on 999 Monte Carlo replications under different randomization inference tests. "Overall" swaps the number of projects completed and the instrument for all observations, "Countries" swaps the entire time series between countries, "Within" swaps years within countries, and "Years" swaps