From Commitment to Implementation: Chinese Development Assistance and Governance Perceptions in Southeastern Europe

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Abstract

Over the past two decades, the geographical scope and financial flows of Chinese development assistance have expanded significantly. However, the implications of this for governance in recipient countries remain contested. This study examines whether, and under what conditions, Chinese development projects mediate between citizens and the state and shape governance perceptions. Focusing on six countries in Southeastern Europe, a region that has received substantial Chinese financing but remains understudied, I merge geocoded project-level data from the Geocoded Official Development Assistance Dataset (GODAD) with six waves of the Balkan Barometer survey (2016–2021, N = 36,186). Using a mixed-effects approach, I identify a time-sensitive and conditional relationship between regional exposure to Chinese projects and individual perceptions of governance. In the commitment year, projects are associated with higher perceived rule of law and administrative effectiveness. This effect is strongest when the project sector matches citizens' preferred investment sectors. However, the initial enthusiasm is lower if projects were present in the region beforehand; time-lagged models show that prior exposure decreases the positive influence of current projects. Robustness checks confirm the stability of these patterns across alternative codings, sample restrictions and other donor controls. By distinguishing between the announcement and implementation phases, the study demonstrates that Chinese

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development assistance can temporarily strengthen, but not necessarily sustain, state legitimacy in recipient countries.

Keywords: Chinese Development Assistance, Governance, Southeastern Europe, State-Society Relations

1 Introduction

The landscape of development assistance has shifted significantly over the past two decades, with the emergence of non-traditional donors, such as China, reshaping the dynamics. While the phenomenon of autocratic aid has received growing scholarly attention (Tannenberg 2019), the literature on its effects in recipient countries remains in a relatively early stage of development. When it comes to China, some studies highlight the benefits of its engagement in the development arena (Alden 2018; Chris and Ocquayeb 2021), and others point to positive impacts on economic outcomes (Mandon and Woldemichael 2023). However the question of the effects of Chinese aid on governance remains open, while the evidence is mixed. Operating outside the institutional framework of the Development Assistance Committee (DAC), China's approach to development assistance is characterized by limited transparency and oversight, close alignment with political elites in recipient countries (Dreher et al. 2019), and the absence of governance-related conditionalities. This has generated considerable interest in whether and under what conditions Chinese engagement in recipient countries influences domestic governance dynamics and shapes citizens' relationship with their own state.

These questions call for revisiting of the long standing debates on the links between development assistance and governance, and more recent ones on aid and state-society relations (Blair and Winters 2020), two of which being closely linked. While scholarly interest in the aid–governance nexus is not new, the literature remains divided. Some argue that foreign aid can undermine governance by weakening accountability mechanisms or fostering rent-seeking behavior (Bräutigam and Knack 2004; Djankov et al. 2008; Knack 2001). In contrast, there is also evidence of a positive relationship, highlighting the conditions under which aid can strengthen governance ((Jones and Tarp 2016)). It is widely accepted, however, that the effect of foreign aid depends on the type of aid and its delivery mechanism (Winters and Martinez 2015; Dietrich 2013), the implementation process (Winters 2010), and the pre-existing conditions in recipient countries (Ahmed 2012). The literature on aid and state–society relations examines how foreign aid influences citizens' perceptions of their own state, and whether and in what ways these perceptions shift because of aid. Two primary mechanisms are identified in the literature: direct and indirect (Blair and Winters (2020)). The direct mechanism suggests that when citizens are aware of and engage with aid projects, change their perceptions of the state. The indirect mechanism, by contrast, posits that citizens may perceive changes in state performance or service delivery without knowing that aid projects played a role, thereby altering their perceptions of the state.While this literature is largely based on evidence from DAC aid, with some exceptions (e.g.,

(Blair and Roessler 2021)), it remains underexplored whether and under what circumstances non-DAC aid, particularly from China, affects citizens' perceptions of governance. Some studies have addressed this question in relation to local corruption (Isaksson and Kotsadam 2018; Brazys et al. 2017). However, other dimensions of governance remain underexplored. This paper contributes to the growing literature on Chinese development assistance and its domestic political effects by bridging debates on aid–governance and aid–state–society relations. Specifically, I examine whether and under what conditions Chinese development projects alter citizens' perceptions of governance in recipient countries, thereby shaping the relationship between citizens and the state.

To investigate the links between development flows and perceptions of governance, I combine ADM1-level data on projects financed by China (a non-DAC, autocratic donor), the World Bank, and European donors (DAC, democratic donors) from the newly released Geocoded Official Development Assistance Dataset (Bomprezzi et al. 2025) with individual survey data from the Balkan Barometer in six countries of Southeast Europe over six years, employing mixed effects approach. Given the absence of geocoded respondent locations, direct proximity to aid projects cannot be measured. Instead, I employ survey cluster matching and ADM1-level development flows to measure exposure to different types of development projects on the regional level, while controlling for individual- and regional-level characteristics, and exploring temporal dynamics and cross-level interactions. This study focuses on Southeast Europe for several reasons. First, countries in the region (excluding Kosovo) are among the largest recipients of Chinese development assistance in Europe, while also receiving substantial aid from European donors and the World Bank. This makes the region a valuable context for comparing the effects of different types of aid. Second, Southeast Europe remains significantly under-researched in the aid literature, particularly with regard to aid–governance linkages, although some recent contributions have examined related questions, such as citizens' perceptions of democracy (Gafuri 2024) and effects of donor regime type (Gafuri). Third, no comprehensive, region-wide analysis has yet examined the political effects of aid across all countries in the Western Balkans. These countries share important structural and historical similarities, yet remain sufficiently diverse to support meaningful cross-national comparison. To the best of my knowledge, this is the first time-series cross-sectional study to systematically examine the links between development assistance on governance perceptions in this region.

I argue that how Chinese development assistance shapes citizens' perceptions of their own state depends both on the stage of the project (announcement vs. implementation) and on citizens' underlying preferences and expectations of the state. I find that project announcements are positively associated with citizens' perceptions of governance, especially when the project sector aligns with citizens' preferences for greater government involvement. This pattern is likely driven by attribution: citizens interpret the provision of public goods by China as a reflection of their own government's performance, in line with Blair and Winters (2020). Yet this initial boost does not last. Over time, as projects move into the implementation stage, the positive association reverses. This shift is consistent with earlier findings on different effects of Chinese projects on public opinion in different stages of the project Wellner et al. and

may reflect dissatisfaction with implementation processes or the emergence of negative externalities as citizens gain closer exposure to project sites. The results also show that prior exposure to Chinese projects is negatively associated with governance perceptions and dampens the positive effects of current projects. Taken together, these findings suggest that the influence of Chinese development assistance on citizens' perceptions of governance is multifaceted and shaped not only by preference alignment but also by the project stage and citizens' cumulative experiences with donor projects in the past.

2 Literature review

Below I provide brief review of literature on development assistance and governance, previous work on development projects as a mediating factor in state-citizen relations, and, finally, emerging scholarship on Chinese development assistance and its links to these dynamics.

2.1 Development assistance and governance

The relationship between development assistance and governance is closely linked to debates on the role of institutions in economic growth. A key argument in this literature is that aid is more effective in contexts with stronger institutions. (Burnside and Dollar 2000) However, when it comes to studying impact of aid on governance in recipient countries, the available literature is divided in terms of direction of this effect being positive or negative. There is broader consensus, however, that the effects of aid depend on its type and delivery mechanism (Winters and Martinez 2015), (Dietrich 2013), implementation process (Winters 2010), and the pre-existing conditions in recipient countries. (Ahmed 2012)

Opponents of aid frequently highlight its potential negative externalities, particularly its links to corruption and rent-seeking, e.g., (Easterly and Pfutze 2008). In this context, aid is often conceptualized as a form of unearned income, drawing parallels to natural resource rents. The argument is that, much like resource wealth, aid can incentivize rent-seeking and corruption while simultaneously dampening citizens' demands for government accountability, see e.g., (Ahmed 2012), (Bräutigam and Knack 2004), (Djankov et al. 2008). Bräutigam, for instance, suggests that aid can weaken government accountability to citizens (Bräutigam 2000). Similarly, Knack (2001) finds that heavy reliance on aid can erode governance by fostering rent-seeking and corruption while undermining institutional accountability. In highly corrupt environments, aid may even contribute to regime survival by decreasing accountability pressure from the government. This aligns with the aid curse literature, which likens aid to natural resource wealth in its potential to weaken government responsiveness (Morrison 2012). However, this mechanism remains the subject of debate. Some empirical research suggests that aid and natural resources do not produce the same outcomes (Bermeo 2016)). The argument is that while the impact of natural resources is largely determined by their economic effects, the effectiveness of aid depends on donor intentions and their approach to implementation.

Several studies examine whether aid influences the perceived legitimacy of recipient states. Blair and Roessler (Blair and Roessler 2021)) compare U.S. and Chinese aid in Liberia and find that aid does not diminish state legitimacy; rather, it can have neutral or positive effects. Their main finding is that recipients of U.S. aid tend to view the Liberian government more favorably, whereas Chinese aid does not significantly shape perceptions of the government in either direction.

Another mechanism through which aid can influence legitimacy is when donors choose to bypass recipient governments and work directly with non-governmental organizations. This approach can enhance public participation, increase demands for accountability, and ultimately contribute to better governance (Dietrich and Winters 2015). However, aid can also undermine government legitimacy if it is perceived as corrupt. In such cases, public trust in the state may deteriorate, reinforcing negative perceptions of government effectiveness and accountability (Bräutigam and Knack 2004).

2.2 Growing literature on Chinese development assistance

An important feature of Chinese aid is its financing of large infrastructure projects; however, it has also consistently faced widespread international skepticism (Strange 2019). Hence, over the past decade, there has been a high interest in China as an emerging donor.[1] According to the Aid Transparency Index, Chinese agencies that fund development projects worldwide rank among the least transparent. At the same time, China operates outside the DAC framework, or, under a different aid regime, as Blair and Roessler (2021) frames it, raising concerns about the absence of governance conditionalities and monitoring mechanisms during project implementation. Critics of Chinese aid were hence early to embrace the concept of *rogue aid*, focusing on Chinese aid as a form of authoritarian aid (Naim 2007) that has the potential to undermine Western donors' efforts to promote good governance through aid conditionality.

One strand of literature emphasises potential benefits, including discussions on the Beijing Consensus (Ramo 2005), the Chinese development model (Alden 2018), and the role of recipient countries in shaping their own development (Chris and Ocquayeb 2021). A recent meta-study on the impact of Chinese aid in recipient countries (Mandon and Woldemichael 2023) finds that while Chinese aid is generally associated with positive economic outcomes and slightly negative perceptions of China, its relationship with political institutions and governance outcomes remains inconclusive, leaving this aspect largely unexplored.

Due to the principle of non-interference, a crucial component of China's approach to development assistance, scholars have examined whether Chinese aid undermines different dimensions of governance. For instance, Brazys and Vadlamannati (2021) conduct a cross-national study showing that, compared to several Western donors, Chinese aid flows inhibit broader economic reform. Similarly, Hernandez (Hernandez (2017)) finds that when a country receives aid from China, the World Bank is more likely to reduce the conditions attached to its loans. Other scholars have investigated the impact of Chinese aid on accountability. For example, Ping et al. Ping et al.

[1] In this context, the term "emerging donor" is employed to describe the (re)emergence of China as a donor in the period following 2000.

(2022) find that while Chinese projects weaken horizontal accountability by undermining legislative and judicial oversight, they have little impact on vertical electoral accountability.

The aid allocation literature reveals important patterns that contribute to understanding the links between Chinese aid and governance outcomes in recipient countries. Dreher et al. (2019) find that Chinese aid is disproportionately allocated to the birth regions of political leaders in 117 African countries, suggesting a tendency toward political capture, where aid serves as a tool for patronage and electoral gain. They argue that such allocations support the provision of both private goods (e.g., cash, goods, housing) and club goods (e.g., schools, clinics, water facilities, electricity), which can influence voter support in competitive political environments. However, this does not appear to have a negative impact on aid effectiveness. (Dreher et al. 2021).

There is a growing body of research examining the impact of Chinese aid on various local-level outcomes in recipient countries. Based primarily on public opinion data surrounding Chinese projects, scholars find that, in contrast to World Bank aid, Chinese aid exacerbates local corruption, e.g., (Isaksson and Kotsadam 2018), (Brazys et al. 2017). Moreover, studies show that Chinese aid does not significantly increase support for political incumbents and often has negative effects on local labor market institutions. These findings highlight the complex dynamics of aid's influence on local governance structures, where China's non-interference policy and its commercial interests may undermine institutional safeguards and weaken the effectiveness of conditionality, as observed by Li Li (2017). Additionally, Chinese aid has been found to discourage trade union activity and reinforce ethnic identities (Isaksson and Kotsadam 2020). More recent studies suggest that Chinese aid negatively affects trust in government (Atitianti 2023) and increases perceptions of corruption of local officials (Cha 2024).

Two major gaps persist in the literature on Chinese development assistance. First, the evidence is still overwhelmingly drawn from African cases, with only a handful of recent studies examining other regions. For instance, in Southeast Europe, Gafuri (2024) shows that the presence of Chinese aid reduces citizens' support for democracy. Second, little is known about the mechanisms through which Chinese aid shapes political and governance outcomes.

3 Theoretical framework

As discussed in the previous sections, the relationship between citizens' perceptions of governance and development projects is not straightforward. Building on the attribution model of (Blair and Winters 2020) and recent evidence that project effects vary across stages (Wellner et al.), I extend existing approaches by testing preference alignment as a mechanism through which projects can generate positive perceptions of governance, particularly during the announcement stage. I therefore propose a framework in which the influence of Chinese projects unfolds in two phases: announcement and implementation. These effects are mediated by attribution: citizens crediting

or blaming their government for project outcomes, and conditioned by both preference alignment and prior experience with projects in the implementation stage. This framework is illustrated in Figure 1.

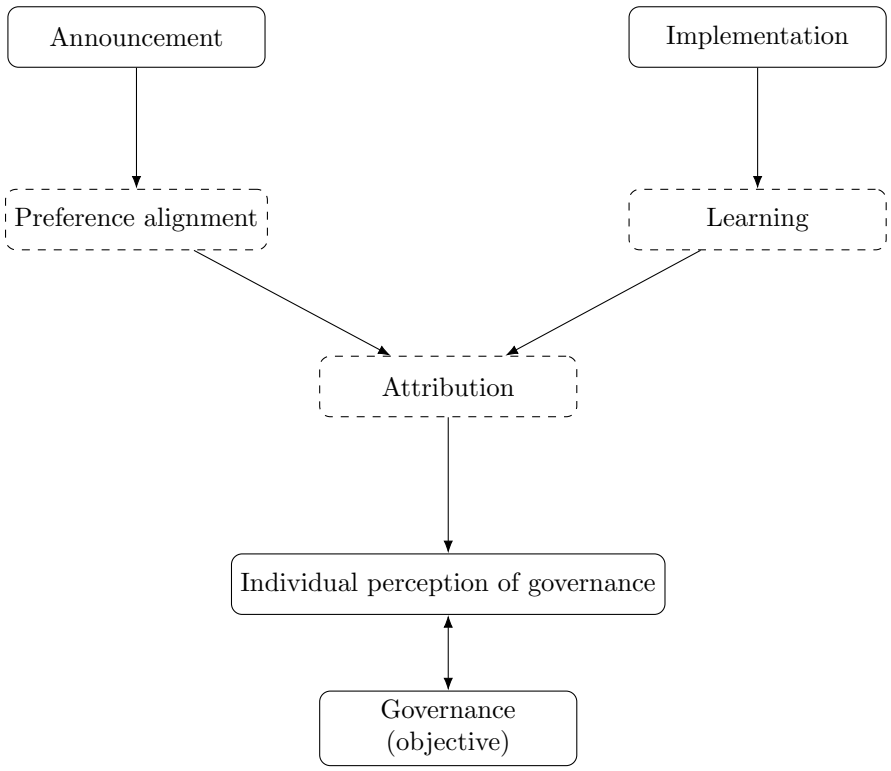

Fig. 1 Theoretical framework of the impact of Chinese projects on governance perceptions.

Existing research shows that citizens' proximity to aid projects can initiate a learning process that shapes how they evaluate their own government (Blair and Winters 2020). Blair and Roessler (2021) provides experimental evidence that Chinese aid does not uniformly undermine state legitimacy. I extend this argument by suggesting that the effect is conditional on the stage of the project. Promises of public goods at the announcement stage, on the one hand, and the lack of transparency and accountability often associated with Chinese-funded projects during implementation, on the other, may both prompt citizens to reassess their government, though in different directions. Dreher et al. Wellner et al. find that individuals living near completed Chinese projects report less favorable views of China and more favorable views of Western donors, underscoring the importance of spatial and temporal proximity. Their study also highlights a temporal dimension: citizens' assessments shift as they move from expectations to direct evaluations of implementation.

I posit that the effects of Chinese development projects on citizens' governance perceptions unfold in two stages. In the *announcement stage*, perceptions are shaped by

expectations: citizens credit their government for securing investment and anticipated benefits, especially if the expectations are met. In the *implementation stage*, evaluations shift as citizens learn from direct exposure to project processes and outcomes. While Chinese-funded projects are often implemented efficiently, they may bypass institutional safeguards. For example, Ping et al. (2022) notes that such projects are frequently facilitated by laws passed under urgent procedures, with procurement rules commonly circumvented. These governance trade-offs can alter how citizens evaluate their government. Attribution operates in both directions: citizens can reward governments for initiating projects but may also hold them accountable for shortcomings that arise during implementation. Moreover, the enthusiasm associated with new projects may diminish in regions where citizens have already experienced previous rounds of implementation. Hence I will test the following hypotheses:

H1: Exposure to Chinese projects during the announcement stage is positively associated with citizens' perceptions of governance.

H2: Exposure to Chinese projects during the implementation stage is negatively associated with citizens' perceptions of governance.

Beyond temporal dynamics, the effect of Chinese projects depends on whether they align with citizens' policy preferences. Empirical evidence shows that Chinese aid is often associated with satisfaction in public goods provision, especially where projects are highly visible and promoted by political elites (Dreher et al. 2019). When projects provide goods in sectors prioritized by citizens, individuals may be more likely to overlook governance weaknesses and evaluate outcomes more favorably. In this way, preference alignment conditions how attribution operates, particularly in the early phase of project evaluation.

H3: Positive perceptions of governance during the announcement stage are stronger when Chinese projects align with citizens' stated preferences for government investment in specific sectors.

H4: The positive effect of new Chinese projects on governance perceptions is weaker in regions with prior exposure to Chinese-funded projects.

4 Chinese Development Assistance in Southeastern Europe

In this paper, I examine six countries[2], commonly referred to as the Western Balkans by European institutions. All of these countries hold candidate status for European Union (EU) membership and are engaged in ongoing governance reforms as part of the EU accession process. Despite these efforts, weak governance remains a significant challenge.

[2] Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia

Between 2000 and 2017, these six countries received a total of $45.1 billion in Official Development Assistance (ODA) and Other Official Flows (OOF). Aid from DAC donors dominates the region, with the EU institutions emerging as the largest contributor, accounting for 22% to 56% of net ODA and OOF disbursements, depending on the country (World Bank data). However, recent research on aid effectiveness in the Balkans highlights a persistent oversight by DAC donors in addressing weak governance structures (Bartlett 2021). Despite the substantial financial assistance and institutional support from the EU, governance deficiencies persist.

Over the past decade, non-DAC donors, including China and the United Arab Emirates, have become increasingly active in the Balkans, raising questions about the impact of their engagement (Bieber and Tzifakis (2019)). China, in particular, has expanded its presence in the region over the past two decades, with Serbia being the largest recipient of Chinese assistance, receiving $2.6 billion. This is followed by Bosnia and Herzegovina, North Macedonia, Montenegro, and Albania. Except for Kosovo, all Western Balkan countries have also participated in China's *16+1* and *17+1* cooperation mechanisms, which were established to strengthen economic ties between China and post-communist countries in Europe. In the figure below, I present the projects allocated to these countries in the past two decades.

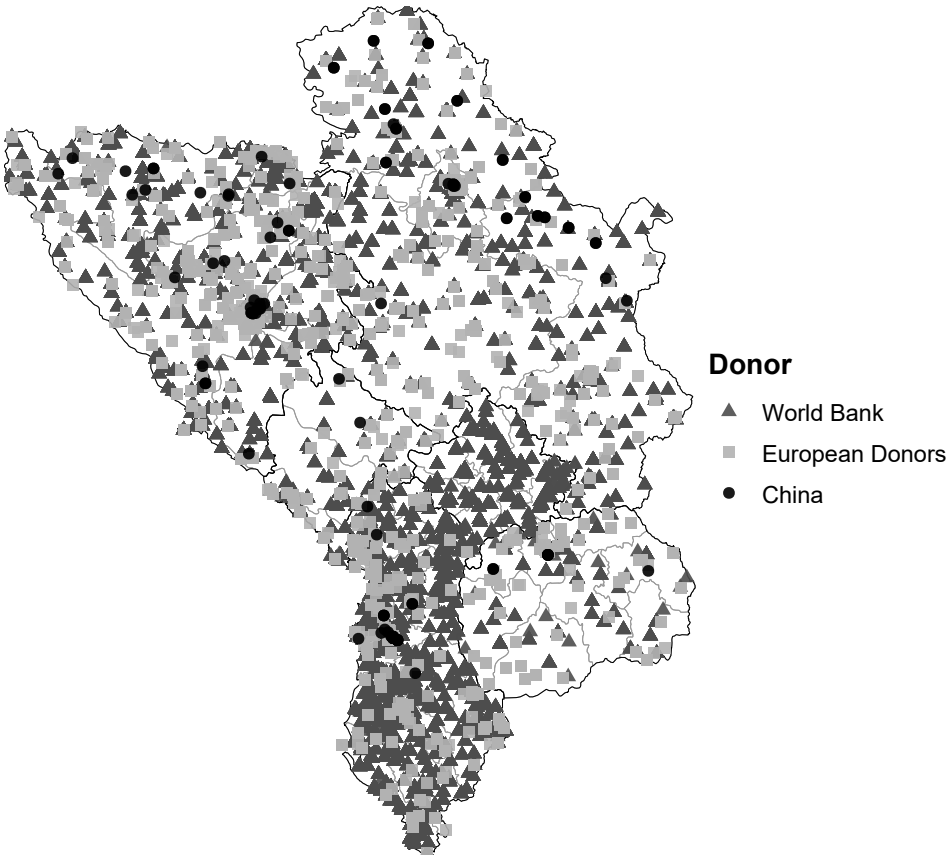

Fig. 2 Project locations by donor in Southeastern Europe (2000–2021). Black lines indicate national boundaries, while grey borders represent Balkan Barometer survey clusters. *Note*: Data for European donors in Kosovo is unavailable. **Data source:** GODAD dataset

Although Chinese projects are less represented among the total number of projects in the region, they are often widely publicized, with government media particularly emphasizing their benefits. In May 2024, President Xi Jinping made his second visit to Serbia since 2016. During his European tour this year, Serbia was one of three countries he visited, along with Hungary and France. This attracted considerable media attention in Serbia and beyond, as the visit brought new opportunities, new aid and investment packages, and trade agreements. While reporting on the visit, DW writes:

> " *Thanks to a huge Chinese loan equivalent to €3.2 billion ($3.4 million), Serbia is currently building 5,000 kilometers (about 3,100 miles) of sewers and 159 wastewater treatment plants, which even Belgrade is still lacking.*" Welle (2024)

While the mainstream government media is praising the ironclad friendship, research journalists persistently draw attention to the potential risks associated with such projects. Chinese projects in Serbia, for instance, are typically negotiated

directly, without the involvement of tenders, with Chinese companies and workers acting as contractors. This practice effectively circumvents Serbian public procurement law. (Manojlović 2023) Finally, the recent collapse of the canopy at Novi Sad station, renovated as part of the Belgrade–Budapest high-speed rail line, triggered widespread protests across the country, with citizens demanding greater government accountability. (Duvnjak and Bruni 2025)

Serbia is not a sole case, however. In other countries controversies around projects emerged. To illustrate, the 2015 wiretapping scandal in North Macedonia exposed irregularities surrounding the Kicevo-Ohrid Motorway Construction Project, funded by a loan from Chinese Exim Bank (490 million - dollars). As China Observers in Central and Eastern Europe (CHOICE) reported, Prime Minister engaged in direct negotiations with potential contractors, passing a special law to legitimize the selection of firm Sinohydro, despite its questionable reputation and previous debarments by the World Bank and the African Development Bank. (Krstinovska 2023)

5 Data and Empirical Strategy

To examine the relationship between citizens' perceptions of governance and Chinese projects, I use a multilevel modelling strategy. This approach has been widely used in various studies of data nested at multiple levels. In essence, multilevel analysis allows the variance of the outcome variable at the individual level to be analysed by contextual factors at higher levels, allows the testing of cross-level interactions, and combines multiple levels into one comprehensive model, thus allowing causal heterogeneity to be accounted for. (Steenbergen and Jones 2002) Similar approaches have recently been employed to study the effects of development programs in recipient countries (e.g., Reinsberg and Abouharb 2025; Reinsberg and Abouharb 2023).

I employ a mixed-effects logit model to analyze responses from six waves of the Balkan Barometer survey (2016–2021). Due to the lack of precise geographic data for individual respondents, I rely on survey clusters, which in most cases correspond to ADM1-level administrative units. These subnational units serve as the level of analysis to capture regional variations in governance perceptions related to the allocation of Chinese projects. The multi-level structure of the data allows me to assess how regional exposure to development projects is associated with individual perceptions of governance while controlling for individual and regional-level factors, as well as cross-country differences.

To implement this strategy, I compiled a dataset with a nested, time-series cross-sectional structure.[3] The dataset is a time-series cross-sectional, encompassing 36,186 survey respondents across six countries (Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia) and 37 subnational units over a six-year period (2016–2021). These subnational survey clusters correspond to either administrative or statistical regions within each country. To measure regional exposure to Chinese development projects, I have linked the dataset with geocoded aid data from the Geocoded Official Development Assistance Dataset (GODAD) (Bomprezzi et al. 2025).

[3] I harmonized raw data across survey waves to construct a clean, analysis-ready dataset.

While existing studies use a spatial identification strategy to analyze local aid impacts e.g., (Brazys et al. 2017); (Isaksson and Kotsadam 2018)), my approach offers an alternative way of capturing these effects despite the absence of geocoded survey data, while still leveraging geocoded aid data. My analysis seeks to compensate for this limitation in few ways. First, I include respondents from all countries in the region, ensuring broad coverage. Second, the hierarchical structure of the data: individuals nested within regions, which are further nested within countries, enables me to capture variation both within regions and across countries. Third, by using a multi-wave time-series dataset, I can track broader trends over time and test time-sensitive hypotheses.

5.1 Dependent variable: Individual perceptions of governance

To analyze the relationship between citizens' perceptions of governance and their exposure to development projects, I use individual survey data from six waves of the Balkan Barometer (2016–2021)[4], the most comprehensive survey that covers all countries that I study. The survey uses a stratified, multi-stage sampling design based on the most recent census to ensure representativeness of the adult population.

Since my focus is on general perceptions of governance rather than localized assessments, I operationalize governance using survey questions that capture overall evaluations of government performance. Governance is a broad and multidimensional concept, and in line with my theoretical framework I focus on two dimensions most relevant to the potential impact of Chinese projects: rule of law and administrative effectiveness. Both dimensions are measured consistently across survey waves and together provide a meaningful proxy for citizens' general perceptions of governance. The specific survey questions used to construct the dependent variables are presented in Table 1. For each, I code responses into a binary indicator, assigning a value of 1 if the respondent 'tends to agree' or 'strongly agrees' with the governance-related statement, and 0 otherwise.

Table 1 Outcome Variables: Governance Dimensions and Survey Questions

Dimension of Governance	**Survey Question**
Rule of Law	Do you agree that in your country the law is applied and enforced effectively?
Administrative effectiveness	Do you agree that the administrative procedures in public institutions in your country are efficient?

5.2 Independent variables: Exposure to development projects

To operationalize exposure to development projects at the regional level, I use GODAD dataset, which provides geo-referenced information on aid projects from multiple

[4]The Balkan Barometer is an annual public opinion and business sentiment survey across six Western Balkan economies, commissioned by the Regional Cooperation Council; see https://www.rcc.int/balkanbarometer/home for details.

donors (Bomprezzi et al. 2025). To align these data with the Balkan Barometer survey clusters, I aggregate project-level information from GODAD to the corresponding cluster level. Exposure is operationalised as the number of donor project locations in a given region and year, capturing the extent to which citizens are likely to encounter development projects in their local context. I calculate the number of project locations within the Balkan Barometer survey clusters using corresponding shapefiles. This approach accounts for projects implemented across multiple locations and ensures that regions with more project sites in a given year are coded as having higher exposure. I follow the GODAD methodology when aggregating project locations.

In addition to Chinese projects, I aggregate the number of project locations for disbursed World Bank projects within each region and year. For European donors, I consolidate the engagement of all 18 DAC donors operating in the region, following Blair's concept of the DAC regime, as they collectively represent a coordinated aid framework. Thus, exposure to DAC aid is measured as the number of DAC-funded projects per region and year. I exclude U.S. aid due to systematic missing data. Additionally, it is important to note that data on European donors' projects in Kosovo is unavailable, despite Kosovo being a significant aid recipient from European donors. This limitation prevents a fully comprehensive comparison between Chinese and DAC aid effects. However, as a robustness check, I rerun the analysis in a subsample excluding Kosovo.

For World Bank and European donor projects, I log-transform the number of project locations (log + 1, due to meaningful 0) to reduce skewness and improve comparability across regions. For Chinese projects, I use the raw count of project locations but also construct categorical indicators for low exposure (1–2 locations) and high exposure (three or more locations). This categorization reflects the distribution of Chinese projects, which contains relatively few unique values, making a continuous specification less informative. Finally, I construct lagged exposure variables for Chinese projects up to five years (lags 1–5), coded as dummy indicators to capture previous exposure to Chinese projects.

5.3 Control variables: Individual and regional-level factors

For each respondent, I include key demographic controls, including age, gender, education, employment status, settlement size, and socio-economic status. In addition, I incorporate two individual-level controls relevant to governance perceptions. First, I construct a political participation variable, capturing protest participation based on respondents who reported having taken part in a protest. I use this as a proxy for political engagement, as individuals who participate in protests are likely to have more critical governance perceptions, leading me to expect a negative association with governance perceptions. Second, I include a variable measuring perceptions of EU membership, which serves as a proxy for both geopolitical orientation and attitudes toward governance. A detailed coding structure and summary of all individual-level controls are provided in the Appendix.

For regional-level controls, I include two key variables derived from AidData (2025) to control for differences across regions. First, I incorporate population size from the

WorldPop dataset. Due to the variation in population sizes across regions, this ensures that the results are not biased by larger regions.

Second, I include nighttime lights intensity as a proxy for economic activity, a widely used measure in development economics due to its strong correlation with various economic indicators, including GDP. This variable is commonly employed in aid effectiveness studies (Dreher et al. 2021) as well as in other political economy studies Gibson et al. (2020). I utilize DMSP-like VIIRS nighttime lights data from AidData (2025), which captures the intensity of artificial illumination observed via satellite imagery. Beyond its role as an economic proxy, empirical evidence suggests that nighttime lights data also correlate with political and governance outcomes, particularly in relation to public goods provision (Min 2015). This suggests that the variable may partially capture governance-related controls relevant to my analysis.

In all models, I implement country and year fixed effects to control for unobserved heterogeneity across countries and time, ensuring that the analysis isolates within-country variation over time. Additionally, I incorporate random intercepts at the regional level to account for baseline differences in the outcome variable across regions. Given the small number of countries in the dataset, I do not include country-level controls, as they exhibit high collinearity with country fixed effects. Finally, to ensure numerical stability and make intercepts more meaningful, I follow the standard practice in multilevel modelling and center all continuous predictors. (Enders and Tofighi)

5.4 Cross-level interaction

To empirically test the theoretical mechanisms outlined in the theoretical framework, I construct additional variables to implement cross-level interactions. First, to operationalize public goods provision preferences, I utilize a survey question in which respondents indicate the sector where they believe government should prioritize. Furthermore, I aggregate Chinese projects classified across sectors. Finally, I construct dummy variable which shows the match between the two, where I operationalize alignment of individual preference and donor engagement. Sector matching strategy is presented in the Appendix.

6 Empirical results

Table 2 reports the results of mixed-effects logit models examining the relationship between varying levels of regional exposure to Chinese project locations and individual perceptions of governance. Model 1 (Baseline) only considers announcement effects; it compares low- and high-exposure regions with those that have not had any projects initiated in the specific year and region. Model 2 (Exposure) builds on this by incorporating sectoral alignment to test whether governance perceptions are shaped by the match between respondents' preferred investment sectors and those targeted by Chinese projects. All models use binary dependent variables for ease of interpretation. Corresponding ordinal models are presented in the Appendix and show consistent results.

Table 2 Baseline and Exposure Models for Rule of Law and Administrative Effectiveness

	Rule of Law		Administrative Effectiveness	
	Baseline	Exposure	Baseline	Exposure
(Intercept)	-1.352***	-1.333***	-0.369*	-0.348*
	(0.143)	(0.144)	(0.173)	(0.177)
Chinese project locations				
Low (1–2)	0.182**		0.147**	
	(0.064)		(0.056)	
High (≥3)	0.501***		0.404***	
	(0.066)		(0.057)	
Exposure level				
Chinese project in the region		0.292***		0.238***
		(0.056)		(0.049)
Sector match		0.514***		0.438***
		(0.081)		(0.072)
Age	0.001	0.001	0.002**	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)
Gender	-0.039	-0.039	0.012	0.012
	(0.024)	(0.024)	(0.022)	(0.022)
High Education	0.028	0.027	0.076**	0.075**
	(0.027)	(0.027)	(0.025)	(0.025)
Unemployment	-0.107***	-0.107***	-0.177***	-0.176***
	(0.029)	(0.029)	(0.026)	(0.026)
Urban/Rural	-0.233***	-0.235***	-0.084***	-0.087***
	(0.025)	(0.025)	(0.023)	(0.023)
Socio-economic status (Above average)	0.502***	0.507***	0.325***	0.329***
	(0.055)	(0.055)	(0.055)	(0.055)
Perception of EU membership (Good)	0.361***	0.357***	0.414***	0.411***
	(0.026)	(0.026)	(0.024)	(0.024)
Participated in protest	-0.293***	-0.292***	-0.339***	-0.338***
	(0.044)	(0.044)	(0.039)	(0.039)
World Bank project locations (log)	-0.053***	-0.037*	-0.012	0.002
	(0.015)	(0.015)	(0.014)	(0.014)
Population/100,000	-0.068*	-0.063*	-0.101**	-0.095**
	(0.028)	(0.028)	(0.033)	(0.033)
Night lights (log)	0.167	0.171	0.520***	0.523***
	(0.119)	(0.120)	(0.154)	(0.156)
SD (Intercept region_name)	0.359	0.362	0.443	0.446
Num. Obs.	36186	36186	36186	36186
AIC	42836.3	42848.5	48281.1	48289.6
BIC	43048.7	43060.9	48493.6	48502.0
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Region RE	Yes	Yes	Yes	Yes

Multilevel logit models (binary outcome); coefficients reported with standard errors in parentheses. $^*p < 0.05$, $p < 0.01$, $^*p < 0.001$. Models include country and year fixed effects, with random intercepts by region.

Model 1 (Baseline) shows a strong positive association between the initiation of Chinese projects and citizens' governance perceptions. Citizens residing in regions where a Chinese project was announced are more likely to report favorable governance assessments, holding all other factors constant. The direction of the effect is consistent across both outcomes, although the magnitude is slightly greater for the rule of law dimension of governance. In both cases, a stronger effect is associated with higher exposure, which is measured as a greater number of project locations (indicating a larger project on a geographical scale). However, low exposure is also associated with significantly higher odds of reporting favorable governance perceptions.

Model 2 (Exposure) shows that the cross-level interaction between individual preferences for sectoral investment and the sector targeted by the Chinese project in the respondent's region significantly increases the odds of agreeing with a positive governance statement, for both outcomes. The effect magnitudes are similar across outcomes, with a slightly stronger effect for the rule of law dimension. The interaction is operationalised as a dummy variable indicating whether the respondent's preferred investment sector matches the sector supported by a Chinese project; in the year of project announcement, such alignment is associated with higher odds of agreement. This finding supports the announcement hypothesis. Figure 2 illustrates how, relative to the baseline of no exposure, the odds of agreement increase when a project is present and rise further when sectoral alignment occurs. These results suggest that governance perceptions are, at least in part, associated with the alignment between the Chinese project sector and individual public investment priorities.

It is important to note that exposure to World Bank project locations has different effects across governance outcomes, in contrast to Chinese projects. The models control for the logged number of World Bank project locations in the respondent's region. For the rule of law dimension, this control variable shows a negative and statistically significant association, whereas for the administrative dimension, it has no significant effect. Due to systematic missingness of data for Kosovo for all European donors, this control cannot be included in the full-sample main models. However, robustness checks excluding Kosovo that allow for controlling for European donors' presence show that the effect of Chinese projects remains, while the European projects have a significant negative association with governance perceptions.

Furthermore, figures 4 and 5 present marginal plots as a result of models including the interaction between the lagged presence of Chinese projects in the region (from t-1 to t-5) and current exposure. These plots still distinguish between sectoral alignment and presence without alignment, compared to the baseline category. Full regression tables are presented in the Appendix.

Both current project presence and sectoral alignment are positively associated with governance perceptions across specifications. However, once lagged exposure is introduced, a more nuanced picture emerges. Lags of one, three, four and five years (with the lag of two years being insignificant) are linked to lower odds of agreeing with a positive governance statement. Interaction terms demonstrate that prior exposure mitigates the immediate positive of project announcement, most evidently for lags of one and two years, and to a lesser extent for sectoral alignment. In other words, projects that move into the implementation stage tend to diminish citizens' positive

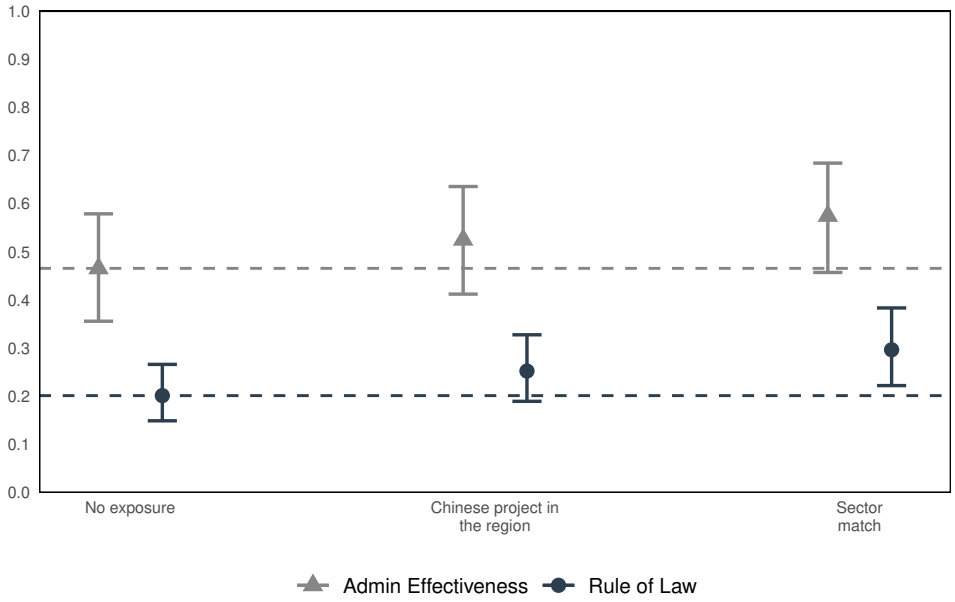

Fig. 3 The plot shows probability of agreeing with governance statements for three categories of Chinese development assistance exposure (no exposure, Chinese project in region, sector match). Estimates are based on exposure models in Table 2.

perceptions. Earlier exposure also reduces the positive associations with the project announcement and preference alignment.

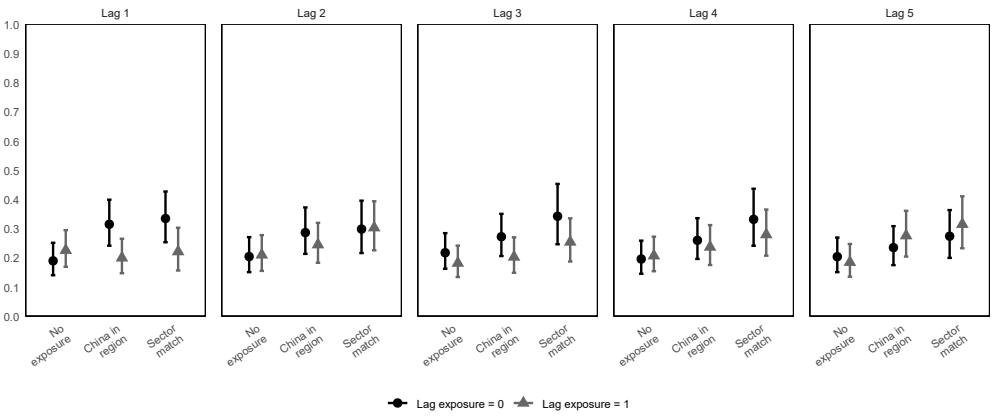

Fig. 4 Marginal effects of current exposure (No exposure, China in region, Sector match) on agreement with the rule of law statement, by prior exposure at lag years 1–5. Predicted probabilities with 95% confidence intervals.

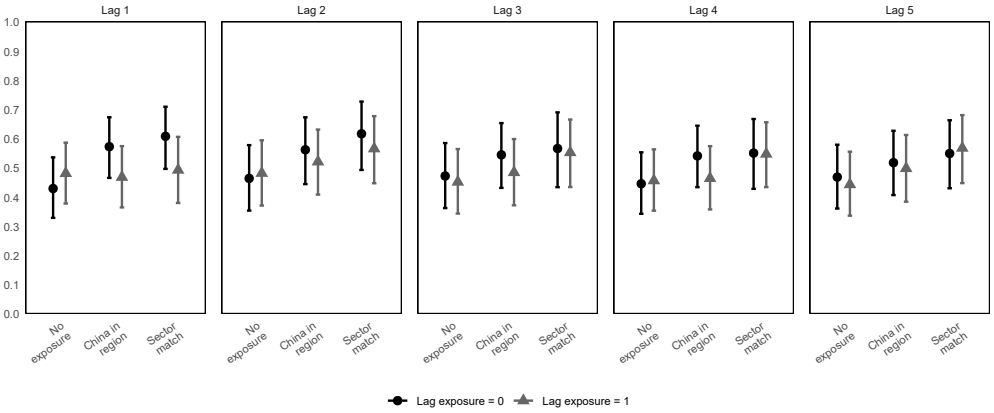

Fig. 5 Marginal effects of current exposure (No exposure, China in region, Sector match) on agreement with the administrative effectiveness statement, by prior exposure at lag years 1–5. Predicted probabilities with 95% confidence intervals.

7 Conclusion

Chinese development projects are associated with different citizen perceptions of governance at different stages and under different conditions. This is consistent with existing evidence that China provides development hardware and funds in-demand projects that are typically not funded by other donors. I find evidence that these specific preferences for the goods provided may be associated with a more positive perception of governance in the year the projects are announced. However, my results suggest that

this initial positive association diminishes in the years after project implementation begins, most likely as the realities of project implementation set in and enthusiasm and grand announcements fade.

However, the results come with a few caveats. Firstly, although the analysis reveals significant associations, endogeneity remains a concern. Specifically, I cannot rule out the possibility that Chinese projects are systematically allocated to regions with better or worse governance. To mitigate this risk, I exploited temporal variation by distinguishing between the announcement and implementation stages, and by incorporating lagged measures of project exposure and cross-level interactions. While these steps reduce concerns about selection effects, they do not fully eliminate them.

Secondly, the distinction between official development assistance (ODA) and other official flows (OOF) could not be implemented in the main analysis due to the limited number of projects with geocoded locations and the very small number of OOF projects to draw meaningful conclusions. This is a data limitation rather than a methodological choice. Existing evidence suggests that ODA and OOF may generate different effects (Brazys et al. 2017), and future studies could explore this further.

Overall, this paper contributes to a better understanding of the mechanisms through which development projects funded by non-DAC donors can influence state-citizen relations. A deeper understanding of these dynamics is important not only for unpacking how development interventions shape perceptions of governance, but also for identifying their broader domestic political implications. Development projects can reconfigure citizens' expectations of the state, reshape channels of accountability, and influence the legitimacy of domestic institutions. These findings thus have implications for donors, helping to guide decisions about whether, where, and how to allocate and implement projects in ways that support, rather than undermine, governance in recipient countries.

Finally, there are several ways in which future research could extend this study. Firstly, the preference-alignment mechanism could be examined more closely by analysing forms of alignment that go beyond sectoral priorities. Secondly, survey experiments could assess how exposure to information shapes attribution, providing a more direct test of the assumed mechanism. This would clarify the conditions under which citizens attribute responsibility for project outcomes to their government rather than the donor. Thirdly, while this analysis controls for the presence of other donors, it does not examine their effects in detail. Subsequent work could investigate whether European projects generate negative spillovers, and whether alignment mechanisms operate similarly across donors, or are specific to Chinese engagement.

Appendix A

Note: Counts per observed category; totals reflect non-missing observations.

Fig. A1 Map of countries and survey regions. Black lines indicate country boundaries; grey lines indicate regional boundaries (survey clusters).

Table A1 Variable descriptions and coding

Variable	Description and Coding
Individual variables	
Age	Age of the respondent, centered around the grand mean.
Gender	Gender of respondents; female (reference), male = 1.
High education	Dummy = 1 if respondent completed college/university or Masters/Doctorate; 0 otherwise.
Unemployed	Dummy = 1 if respondent is unemployed; 0 otherwise.
Social status (Above)	Dummy = 1 if self-reported social status is above average; 0 otherwise.
Perception of EU membership (Good)	Dummy = 1 if respondent thinks EU membership would be a good thing; 0 otherwise.
Participated in protest	Dummy = 1 if respondent participated in a protest; 0 otherwise.
Urban/Rural	Dummy = 1 if settlement population >10,000; 0 otherwise.
Perception of rule of law	Dummy = 1 if respondent tends to agree or totally agrees with the statement that law is applied and enforced effectively.
Perception of rule of law (ordinal)	Ordinal scale: 1 = Totally disagree, 2 = Tend to disagree, 3 = Tend to agree, 4 = Totally agree; Don't know/Refuse coded as NA.
Perception of administrative effectiveness	Dummy = 1 if respondent tends to agree or totally agrees with the statement that administrative procedures are efficient.
Perception of administrative effectiveness (ordinal)	Ordinal scale: same coding as rule of law (ordinal).
Match preference with Chinese sector activity	Dummy = 1 if at least one sector marked by respondent matches a Chinese project sector in the same region/year.
Regional variables	
Population	Population divided by 100,000 and grand mean-centered.
Night lights intensity	Log-transformed and mean-centered nighttime light intensity.
World Bank projects (count)	Logged number of World Bank project locations.
EU-funded projects (count)	Logged number of EU-funded project locations (sample without Kosovo).
Presence of China	Dummy = 1 if any Chinese projects are present in region/year.
Chinese projects (counts)	Number of Chinese project locations in region/year (not logged).
Chinese projects (lagged counts)	Logged number of Chinese project locations with 1–5 year lags.

Table A2 Summary Statistics

Variable	Mean	Std. Dev	Min	Max
Age (centered around grand mean)	0.000	16.365	-24.430	56.570
Rule of law perception (DV 1)	0.500	0.500	0.000	1.000
Administrative effectiveness perception (DV2)	0.310	0.463	0.000	1.000
Perception of EU membership (Good)	0.571	0.495	0.000	1.000
High education	0.293	0.455	0.000	1.000
Number of locations of Chinese projects	0.584	1.669	0.000	8.000
Log night lights (centered around grand mean)	0.682	1.224	-2.377	2.740
Sector match	0.037	0.188	0.000	1.000
Participation in protest	0.087	0.282	0.000	1.000
Population/100k (centered around grand mean)	3.174	7.395	-4.303	17.092
Socio economic status (Above)	0.043	0.203	0.000	1.000
unemployed_dummy_na0	0.247	0.431	0.000	1.000
Urban/Rural	0.516	0.500	0.000	1.000
Number of locations of World Bank projects	0.554	0.955	0.000	3.951

Table A3 Number of observations by country

Country	Count
Serbia	6061
Albania	6036
North Macedonia	6028
Kosovo	6024
Montenegro	6024
Bosnia and Herzegovina	6013

Table A4 Number of observations by region

Region	Number of respondents
Federation Bosnia And Herzegovina	3789
Central Region	2508
Republika Srpska	2035
North Region	2001
Skopje	1759
Tirane	1706
Vojvodina	1622
Sumadija and West Serbia	1556
South and East Serbia	1550
South Region	1515
Prishtina	1490
Belgrade	1333
Prizren	1006
Polog	908
Mitrovica	893
Peja	733
Fier	681
Gjakova	672
Pelagonia	661
Southwest	654
Elbasan	636
Gnjilan	631
Ferizaj	599
East	596
Durres	572
Southeast	523
Northeast	489
Korce	480
Shkoder	451
Vardar	438
Vlore	386
Berat	278
Lezhe	261
Diber	243
Brcko district	189
Kukes	176
Gjirokaster	166

Table A5 Category Counts: Exposure Variables

Variable	Category	Count
exposure_level_f	No exposure	30047
exposure_level_f	China in region	4818
exposure_level_f	Sector match	1321
loc_chn_cat	No exposure	30047
loc_chn_cat	High exposure	3421
loc_chn_cat	Low exposure	2718

Counts per observed category;

Table A6 Mapping of Balkan Barometer sectors to Chinese aid sectors in GODAD

Balkan Barometer	**GODAD**
Energy	`Enegry`
Transport	`Transport and Storage`
Social infrastructure	`Health`, `Education`, or `Other social infrastructure and services`
Agriculture	`Agriculture, forestry and fishing`
Industrial development	`Industry, mining and construction`
Tourism	No match
Science/Technology	No match
SME Development	No match

"Included" sectors have direct one-to-one or many-to-one correspondences in the GODAD Chinese aid classification and are used for sectoral alignment coding. "Excluded" sectors lack a direct counterpart in GODAD.

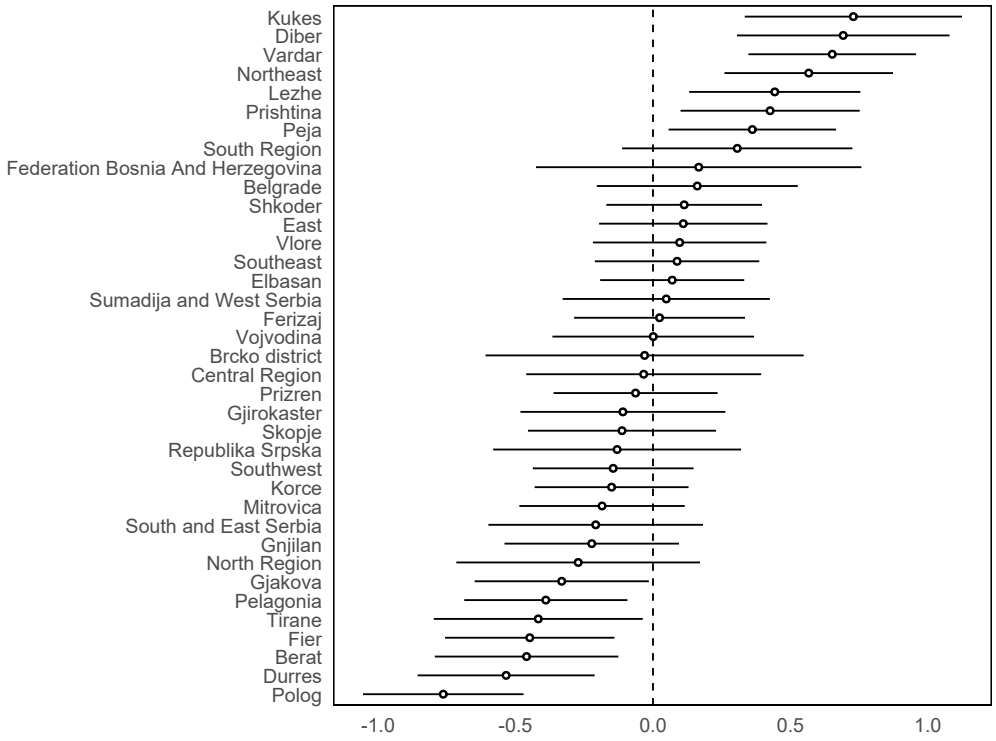

Fig. A2 Random intercepts from the baseline model for the rule of law outcome.

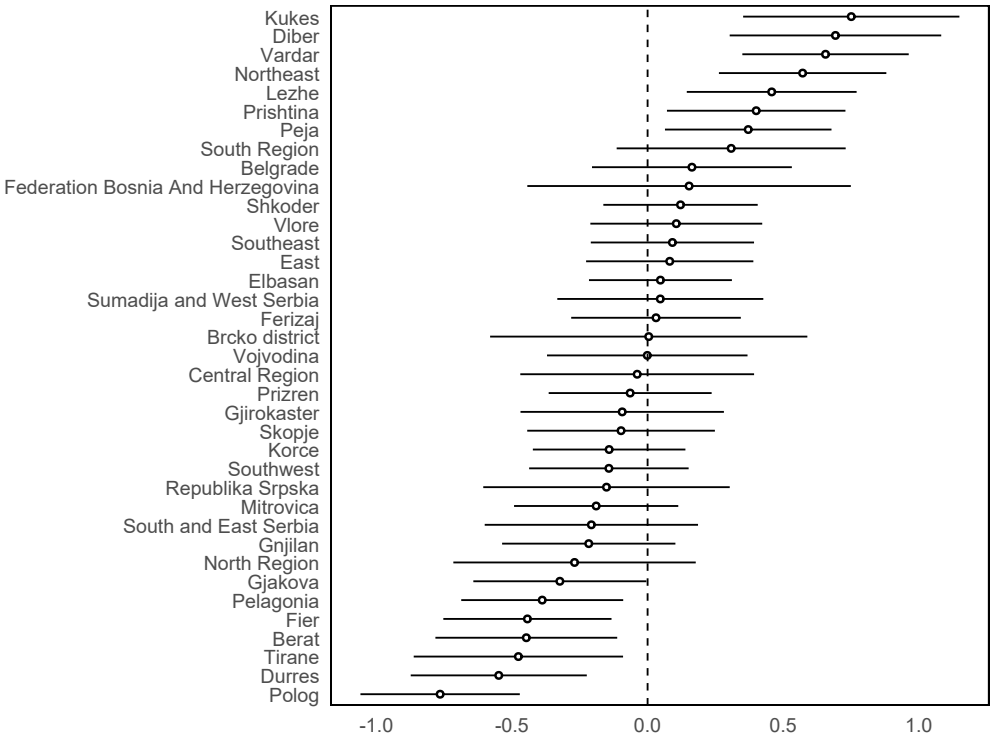

Fig. A3 Random intercepts from the baseline model for the administrative effectiveness outcome.

Administrative outcome:

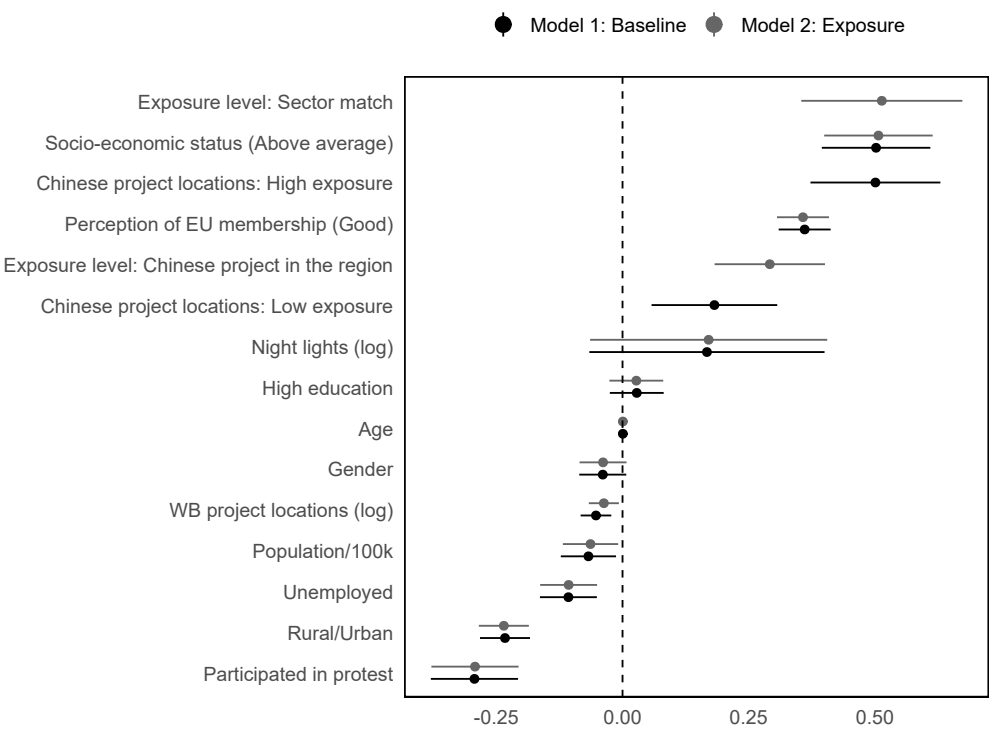

Fig. A4 Coefficient estimates with 95% confidence intervals from Models 1 and 2. Country and year fixed effects are omitted. The x-axis is in log-odds units, and the outcome variable is rule of law.

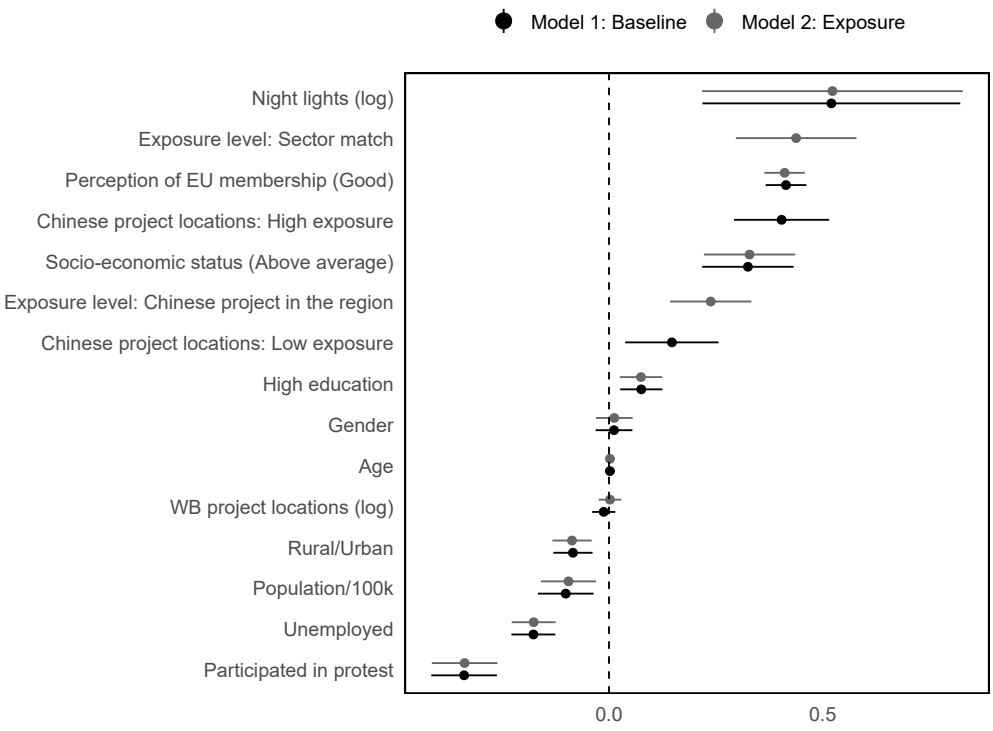

Fig. A5 Coefficient estimates with 95% confidence intervals from Models 1 and 2. Country and year fixed effects are omitted. The x-axis is in log-odds units, and the outcome variable is administrative effectiveness.

Appendix B

This appendix contains additional models which aimed to check the robustness of the main results.

Table B7 Multilevel ordinal logistic regression models of governance outcomes

	Rule of law (ordinal)	Admin (ordinal)
Chinese projects in region (any)	0.207^{***}	0.248^{***}
	(0.044)	(0.045)
Sector alignment (match)	0.287^{***}	0.452^{***}
	(0.066)	(0.069)
Age	-0.000	0.002^{**}
	(0.001)	(0.001)
Gender	-0.085^{***}	-0.043^{*}
	(0.020)	(0.021)
High education	0.026	0.038
	(0.023)	(0.024)
Unemployment	-0.073^{**}	-0.136^{***}
	(0.024)	(0.025)
Urban/Rural	-0.192^{***}	-0.087^{***}
	(0.021)	(0.023)
Socio-economic status (Above average)	0.467^{***}	0.384^{***}
	(0.050)	(0.054)
Perception of EU membership (Good)	0.289^{***}	0.386^{***}
	(0.022)	(0.023)
Participated in protest	-0.365^{***}	-0.410^{***}
	(0.036)	(0.036)
World Bank project locations (log)	-0.026^{*}	-0.012
	(0.012)	(0.013)
Population/100k,000	-0.056^{*}	-0.077^{*}
	(0.027)	(0.033)
Night lights (log)	0.188	0.465^{**}
	(0.116)	(0.152)
AIC	82181.109	74663.767
BIC	82409.428	74890.661
Num. obs.	34761	32975
Year FE	Yes	Yes
Country FE	Yes	Yes
Region RE	Yes	Yes

Notes: Multilevel ordinal logistic regression models, with ordinal outcome. Robust standard errors in parentheses. $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$. All models include country and year fixed effects, and also random intercepts by region.

Table B8 Baseline and exposure models for both outcomes: Subset that excludes Kosovo

	Rule of Law		Administrative Effectiveness	
	Baseline	Exposure	Baseline	Exposure
(Intercept)	−1.048***	−1.023***	0.155	0.188
	(0.158)	(0.160)	(0.211)	(0.218)
Chinese projects in the region				
Low (1–2)	0.197**		0.130*	
	(0.064)		(0.057)	
High (≥3)	0.537***		0.372***	
	(0.067)		(0.058)	
Exposure level				
Chinese project in the region		0.313***		0.214***
		(0.056)		(0.050)
Sector match		0.562***		0.419***
		(0.083)		(0.074)
Age	0.001	0.001	0.003***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)
Gender	−0.067**	−0.067*	−0.011	−0.010
	(0.026)	(0.026)	(0.024)	(0.024)
High education	−0.026	−0.026	0.048	0.047
	(0.031)	(0.031)	(0.028)	(0.028)
Unemployment	−0.121***	−0.122***	−0.178***	−0.178***
	(0.032)	(0.032)	(0.029)	(0.029)
Urban/Rural	−0.272***	−0.275***	−0.146***	−0.148***
	(0.028)	(0.028)	(0.026)	(0.026)
Socio-economic status (Above average)	0.573***	0.580***	0.358***	0.363***
	(0.062)	(0.062)	(0.062)	(0.062)
Perception of EU membership (Good)	0.448***	0.444***	0.430***	0.427***
	(0.028)	(0.028)	(0.026)	(0.026)
Participated in protest	−0.307***	−0.306***	−0.314***	−0.312***
	(0.049)	(0.049)	(0.044)	(0.044)
World Bank project locations (log)	−0.070***	−0.051**	−0.034*	−0.019
	(0.017)	(0.017)	(0.015)	(0.015)
European donors project locations (log)	−0.211***	−0.209***	−0.194***	−0.192***
	(0.025)	(0.025)	(0.024)	(0.024)
Population/100,000	−0.021	−0.017	−0.091*	−0.085*
	(0.029)	(0.029)	(0.039)	(0.038)
Night lights (log)	0.023	0.032	0.630**	0.645**
	(0.126)	(0.127)	(0.195)	(0.200)
SD (Intercept region_name)	0.362	0.366	0.493	0.500
Num. Obs.	30162	30162	30162	30162
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Region RE	Yes	Yes	Yes	Yes

Multilevel logistic regression models (binary outcome); coefficients reported with standard errors in parentheses. $^*p < 0.05$, $p < 0.01$, $^*p < 0.001$. Models include country and year fixed effects, with random intercepts by region.

Table B9 Models with only China dummy or only sector match variables

	Rule of Law		Administrative Effectiveness	
	China dummy	Sector match	China dummy	Sector match
(Intercept)	−1.342***	−1.248***	−0.365*	−0.258
	(0.143)	(0.144)	(0.174)	(0.182)
Chinese project in the region (dummy)	0.330***		0.271***	
	(0.054)		(0.047)	
Sector match (dummy)		0.316***		0.273***
		(0.072)		(0.063)
Age	0.001	0.001	0.002**	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)
Gender	−0.039	−0.039	0.012	0.012
	(0.024)	(0.024)	(0.022)	(0.022)
High education	0.026	0.024	0.074**	0.072**
	(0.027)	(0.027)	(0.025)	(0.025)
Unemployment_na0	−0.107***	−0.105***	−0.177***	−0.175***
	(0.029)	(0.029)	(0.026)	(0.026)
Urban/Rural	−0.234***	−0.232***	−0.086***	−0.083***
	(0.025)	(0.025)	(0.023)	(0.023)
Socio-economic status (Above average)	0.507***	0.506***	0.329***	0.329***
	(0.055)	(0.055)	(0.055)	(0.054)
Perception of EU membership (Good)_na0	0.358***	0.355***	0.412***	0.408***
	(0.026)	(0.026)	(0.024)	(0.024)
Participated in protest	−0.291***	−0.293***	−0.337***	−0.338***
	(0.044)	(0.044)	(0.039)	(0.039)
World Bank project locations (log)	−0.039*	−0.037*	0.000	0.002
	(0.015)	(0.015)	(0.014)	(0.014)
Population/100,000	−0.063*	−0.063*	−0.095**	−0.101**
	(0.028)	(0.028)	(0.033)	(0.034)
Night lights (log)	0.162	0.213	0.509***	0.600***
	(0.119)	(0.122)	(0.154)	(0.160)
SD (Intercept region_name)	0.360	0.364	0.441	0.468
Num. Obs.	36186	36186	36186	36186
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Region RE	Yes	Yes	Yes	Yes

Multilevel logistic regression models (binary outcome); coefficients reported with standard errors in parentheses. $^*p < 0.05$, $p < 0.01$, $^*p < 0.001$. Models include country and year fixed effects, with random intercepts by region.

Table B10 Models with time lags: Rule of law outcome

	Lag 1	Lag 2	Lag 3	Lag 4	Lag5
(Intercept)	−1.404***	−1.327***	−1.275***	−1.354***	−1.324***
	(0.144)	(0.146)	(0.143)	(0.143)	(0.145)
Exposure level					
Presence	0.676***	0.447***	0.298***	0.366***	0.183**
	(0.070)	(0.082)	(0.069)	(0.067)	(0.064)
Sector match	0.765***	0.505***	0.628***	0.712***	0.389***
	(0.100)	(0.125)	(0.159)	(0.144)	(0.108)
Age	0.001	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Gender	−0.041	−0.039	−0.039	−0.039	−0.039
	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)
High education	0.033	0.029	0.027	0.027	0.026
	(0.027)	(0.027)	(0.027)	(0.027)	(0.027)
Unemployment	−0.108***	−0.107***	−0.107***	−0.107***	−0.109***
	(0.029)	(0.029)	(0.029)	(0.029)	(0.029)
Urban/Rural	−0.238***	−0.234***	−0.232***	−0.234***	−0.238***
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
Soc.ec. status (Above)	0.506***	0.506***	0.508***	0.510***	0.505***
	(0.055)	(0.055)	(0.055)	(0.055)	(0.055)
EU memb (Good)	0.362***	0.356***	0.357***	0.357***	0.359***
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Part. protest	−0.299***	−0.293***	−0.291***	−0.293***	−0.291***
	(0.044)	(0.044)	(0.044)	(0.044)	(0.044)
World Bank project loc (log)	−0.023	−0.031*	−0.049**	−0.044**	−0.036*
	(0.016)	(0.015)	(0.016)	(0.016)	(0.015)
Population/100,000	−0.058*	−0.062*	−0.055*	−0.065*	−0.063*
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
Night lights (log)	0.122	0.172	0.193	0.157	0.172
	(0.118)	(0.121)	(0.121)	(0.119)	(0.120)
China (t–1)	0.220***				
	(0.062)				
Presence × China (t–1)	−0.832***				
	(0.094)				
Sector match × China (t–1)	−0.792***				
	(0.155)				
China (t–2)		0.034			
		(0.054)			
Presence × China (t–2)		−0.247*			
		(0.097)			
Sector match × China (t–2)		−0.011			
		(0.149)			
China (t–3)			−0.224***		
			(0.049)		
Presence × China (t–3)			−0.163		
			(0.094)		
Sector match × China (t–3)			−0.199		
			(0.177)		
China (t–4)				0.069	
				(0.045)	
Presence × China (t–4)				−0.193*	
				(0.090)	
Sector match × China (t–4)				−0.316	
				(0.163)	
China (t–5)					−0.122**
					(0.044)
Presence × China (t–5)					0.336***
					(0.098)
Sector match × China (t–5)					0.319*
					(0.141)
Num.Obs.	36186	36186	36186	36186	36186
AIC	42764.0	42847.7	42816.8	42847.3	42839.1
BIC	43001.9	43085.6	43054.7	43085.2	43077.0
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Region RE	Yes	Yes	Yes	Yes	Yes

Multilevel logistic regression models (binary outcome); coefficients reported with standard errors in parentheses. $^*p < 0.05$, $p < 0.01$, $^*p < 0.001$. Models include country and year fixed effects, with random intercepts by region.

Table B11 Models with time lags: Administrative Effectiveness outcome

	Log 1	Log 2	Log 3	Log 4	Log 5
(Intercept)	−0.459**	−0.358*	−0.332	−0.395*	−0.341*
	(0.169)	(0.177)	(0.177)	(0.170)	(0.174)
Exposure level					
Presence	0.577***	0.394***	0.290***	0.383***	0.198***
	(0.067)	(0.076)	(0.064)	(0.060)	(0.057)
Sector match	0.723***	0.619***	0.378*	0.422**	0.324***
	(0.094)	(0.116)	(0.152)	(0.133)	(0.097)
Age	0.002**	0.002**	0.002**	0.002**	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Gender	0.011	0.012	0.012	0.013	0.013
	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)
High education	0.079**	0.076**	0.075**	0.075**	0.074**
	(0.025)	(0.025)	(0.025)	(0.025)	(0.025)
Unemployment	−0.177***	−0.177***	−0.176***	−0.176***	−0.177***
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
Urban/Rural	−0.089***	−0.086***	−0.084***	−0.085***	−0.089***
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
Soc.ec. status (Above)	0.328***	0.329***	0.330***	0.334***	0.331***
	(0.055)	(0.055)	(0.055)	(0.055)	(0.055)
EU memb (Good)	0.415***	0.409***	0.410***	0.412***	0.412***
	(0.024)	(0.024)	(0.024)	(0.024)	(0.024)
Part. protest	−0.344***	−0.338***	−0.338***	−0.339***	−0.338***
	(0.039)	(0.039)	(0.039)	(0.039)	(0.039)
World Bank project loc (log)	0.015	0.010	−0.009	−0.012	0.000
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
Population/100,000	−0.091**	−0.094**	−0.092**	−0.095**	−0.090**
	(0.032)	(0.033)	(0.033)	(0.033)	(0.033)
Night lights (log)	0.437**	0.513**	0.530***	0.481**	0.509***
	(0.148)	(0.156)	(0.157)	(0.151)	(0.154)
China (t–1)	0.210***				
	(0.056)				
Presence × China (t–1)	−0.630***				
	(0.084)				
Sector match × chn_t1	−0.678***				
	(0.132)				
China (t–2)		0.071			
		(0.049)			
Presence × China (t–2)		−0.237**			
		(0.087)			
Sector match × China (t–2)		−0.282*			
		(0.135)			
China (t–3)			−0.083		
			(0.044)		
Presence × China (t–3)			−0.158		
			(0.082)		
Sector match × China (t–3)			0.028		
			(0.166)		
China (t–4)				0.044	
				(0.042)	
Presence × China (t–4)				−0.351***	
				(0.079)	
Sector match × China (t–4)				−0.057	
				(0.150)	
China (t–5)					−0.103*
					(0.041)
Presence × China (t–5)					0.024
					(0.085)
Sector match × China (t–5)					0.178
					(0.126)
Num.Obs.	36186	36186	36186	36186	36186
AIC	48227.8	48285.7	48283.3	48274.7	48287.6
BIC	48465.7	48523.6	48521.2	48512.6	48525.5
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Region RE	Yes	Yes	Yes	Yes	Yes

Multilevel logistic regression models (binary outcome); coefficients reported with standard errors in parentheses. $^*p < 0.05$, $p < 0.01$, $^*p < 0.001$. Models include country and year fixed effects, with random intercepts by region.

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