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Does China's overseas lending favor the One Belt One Road countries?

Heyang Fang and Yifei Zhang*

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Abstract

The One Belt One Road initiative is found to promote China's overseas lending in the belt road countries, especially for countries along the continental route. Such effect strengthens and persists for at least three years. Our findings show that launching a national strategy could be a decisive determinant of one country's outbound loans.

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Keywords: International lending, One Belt One Road

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“China’s commitment to building infrastructure in countries covered by its ‘One Belt, One Road’ initiative - a scheme to boost development along ancient ‘silk road’ trading routes between China and Europe - is revealed by data showing that the lion’s share of Beijing’s recent overseas lending pledges have been in countries that lie along the routes.”

————— *Financial Times (June 18, 2015)*

1. Introduction

Banks from developed countries often provide credits to developing countries (Dymski, 2003), as marginal returns are usually higher in less developed regions (Healey, 1995). Despite extensive studies regarding advanced countries’ overseas lending (Goldberg, 2002; Porzecanski, 1981), that of large developing countries such as China is largely left uncharted.

In addition to economic considerations, developing countries’ overseas lending features political reasons, especially for state-owned banks having such objectives rather than profit maximization goals (Berger *et al.*, 2004; Berger, 2007; Dinc, 2005).¹ As China becomes an active international lender in recent decades, it is pivotal to ask whether and how China’s overseas lending is motivated by its recent foreign policies. This inspires our study of the grand One Belt One Road (OBOR) policy initiative and it is intriguing to investigate whether China’s aggregate lending favors the OBOR countries in the wake of this national strategy.²

¹ Not surprisingly, China’s official commitments are also found to be primarily driven by its foreign policy (Dreher & Duchs, 2016; Dreher *et al.*, 2018).

² China’s overseas lending is mainly through its state-owned banks (Horn *et al.*, 2019). It includes the two state-owned policy banks (China Export-Import Bank and China Development Bank) and the four state-owned commercial banks (The Bank of China, the Agricultural Bank of China, the Industrial and Commercial Bank of China and China Construction Bank).

The OBOR initiative was announced by President Xi Jinping in autumn 2013 during his visit in Kazakhstan, where he unveiled the vision of an ‘Economic Belt’ (i.e. the land belt) linking China with Central Asia, Central and Eastern Europe, and ends up in Western Europe. Soon, President Xi proposed a similar ‘Maritime Silk Road’ (i.e. the sea road), which runs through Southeast Asia, the Persian Gulf and the Mediterranean, to the same destination as the Economic Belt. Comprising both the land belt and the sea road, the OBOR initiative is not only a network of ports, railways, roads, pipelines connecting China with the targeted regions, but a blueprint that access to new markets for trade and investments, and diplomatic policies to enhance multilateral relationships. Up to 2017, the OBOR strategy covers 68 target countries with around 8 trillion dollars invested in infrastructures such as transportation networks, energy, and telecommunications (Balding, 2017; Moser, 2017).

This paper contributes to the existing literature in two folds. First, it mostly relates to recent works investigating the impacts of the OBOR initiative on trade and investments (e.g. Du & Zhang, 2018; Herrero & Xu, 2017; Hurley *et al.*, 2019; Li *et al.*, 2019). Furthermore, there are only narrative descriptions rather than statistical evidences discussing China’s loans and grants to OBOR countries (Bräutigam, 2011; Cheng, 2016; Kynge, 2015; Lin & Wang, 2017; Yu, 2017). Our work fills the gap and establishes a causal relationship of the policy impact on China’s outbound loans.

Second, studies relating to China’s overseas lending (Dreher & Fuchs, 2016; Dreher *et al.*, 2018; Hurley *et al.*, 2019) often do not take “hidden debts” (i.e., undisclosed foreign official lending flows) into account. Zucman (2013) and Coppola *et al.* (2019) argue that China’s lending to developing countries involves offshore financial centers and/or borrowers’ foreign banks, which make China’s oversea loans hard to track. Since such opaqueness could potentially bias the results, we use a new data set compiled by Horn *et al.* (2019) that explicitly addresses such problems.

The remainder of this paper is organized as follows: Section 2 describes the data and variables, Section 3 shows the identification strategies, Section 4 presents the empirical results, Section 5 checks the robustness of the results and Section 6 concludes.

1. Data and variables

Our main data is from Horn *et al.* (2019), which includes overseas debt stocks owned by Chinese official and state-owned creditors. It mitigates the “hidden debt” problem by matching from both debtors’ and creditors’ sides, namely the Debtor Reporting System (DRS) and the Bank of International Settlements (BIS) Locational Banking Statistics. The data is considered as one of the most reliable and updated sources of China’s overseas lending. Moreover, our country year-varying control variables in section 3 are from the Penn World Table 9.0 (Feenstra *et al.*, 2015).

We mainly follow Du & Zhang (2018) to construct the belt-road country list. We also manually check the news and update the country list, as the coverage of the OBOR is constantly expanding. According to China’s official announcements or news reports, we further collect the years of agreement signed with those OBOR countries, which we use in section 5.³

Our final sample contains 105 recipient countries, with 51 OBOR countries (38 on the land belt and 13 along the sea road) from 2010 to 2017.⁴ Table 1 presents the summary statistics of the main variables and Appendix Table A lists the variable definitions and their sources.

[Table 1 about here]

2. Identification Strategy

To gauge the impact of the OBOR initiative on China’s overseas lending, we employ a difference-in-differences (DD) strategy, following Du & Zhang (2018) and Mao *et al.* (2019). Specifically, we use the OBOR countries as the treatment group and

³ The country list and their OBOR signature years are provided in the online supplementary material, Table A1 and Table A2 respectively.

⁴ Our choice of the start year is standard and follows the related literature such as Du & Zhang (2018).

the non-OBOR countries as the control group. Treating the policy announcement in late 2013 as an exogenous shock, we define years on or after 2014 as the post period, and year 2010 to 2013 as the pre-shock period. Our baseline DD model is thus specified as follows:

$$Y_{it} = \beta_0 + \beta_1 Post_t \times OBOR_i + \gamma_{it} + \theta_i + \alpha_t + \epsilon_{it} \quad (1)$$

where Y_{it} is the logarithm of China's total overseas lending to country i in year t . $Post_t$ is a dummy variable and equals to 1 if t is after year 2014 and 0 otherwise. $OBOR_i$ is an indicator variable and equals to 1 if the recipient country i is an OBOR country and 0 otherwise. γ_{it} is a vector of country i 's year-varying controls such as GDP, population, capital stock, exchange rate, etc. Note that model (1) does not include $Post_t$ and $OBOR_i$, as they are absorbed by the recipient country (θ_i) and the year fixed effects (α_t) respectively. The standard error is clustered at borrower country level to account for potential serial correlations within that country. Moreover, loan commitments could also be path-dependent, as loans to developing countries often follow schedules spanning over years (Kraay, 2014). To alleviate such concern, we include lagged loan amount in some specifications. We also present results incorporating the lagged country controls.

To substantiate our argument that the change in China's overseas lending is solely due to the OBOR initiative, we adopt the following time-varying DD model that treats the OBOR agreement year as the shock year:

$$Y_{it} = \beta_0 + \beta_1 Treatpost_{it} + \gamma_{it} + \theta_i + \alpha_t + \epsilon_{it} \quad (2)$$

where $Treatpost_{it}$ is a dummy variable and equals to 1 after country i signs the agreement with China in year t , and 0 otherwise. Other notations and the cluster standard error are the same as model (1). The coefficient of interest, β_1 , estimates how loan amount changes for signatory i .

3. Empirical Results

[Figure 1 about here]

Figure 1 presents the coefficients of year fixed effect from 2011 to 2017, using 2010 as the base year. The advantage of this standard approach is to control for countries' unobserved time-invariant heterogeneities (Schularick, *et al.*, 2012). It is observed that the OBOR countries tend to receive more loans and the growth rate also increases after 2014. In contrast, the non-OBOR countries have relative steady experience through 2011 to 2017, reflecting the fact that the OBOR strategy neither promotes nor harms their loans.

[Table 2 about here]

Next, we turn to our DD analysis. Table 2 shows the result of the pre-trend analysis. As all pre-shock year interaction terms are not significant, the parallel trend assumption of our DD strategy is thus valid. That is, the commitment loan amounts between the OBOR and the non-OBOR countries exhibit no statistical differences for the years prior to the policy announcement.

[Table 3 about here]

Then we turn to our main results examining the impact of the OBOR initiative on China's overseas lending. Column (1) and (2) of Table 3 show significant and consistent positive effects of this national strategy by comparing the changes between the OBOR countries and the non-OBOR countries, regardless of whether lagged

country controls are included or not.⁵ The results still hold in column (3) and (4) when controlling for the lagged loans, ruling out the possibility that the increased lending after the policy initiative is purely due to the previous loan agreements. In particular, the positive significant coefficient of lagged one lending supports the argument that China's policy loans could be path-dependent (Kraay, 2014; Mattlin & Nojonen, 2015). Quantitatively, the coefficient in column (4) shows that on average, China's oversea lending to the OBOR countries increases by 98 percent after this grant policy initiative.

Next, we explore the potential heterogeneities on loans to the continental and the maritime routes. Columns (5) to (8) exhibit a strong inclination on loans to the land belt countries, after controlling country lagged controls and/or lagged loans. It implies, according to column (8), that the land belt countries' loans are about 1.3 times higher in the post-strategy years relative to those of sea road countries. Such drastic expansion might be justified by the large-scale infrastructure projects in the land belt countries (Cerutti & Zhou, 2018), which is consistent with the findings regarding China's outward direct investments (ODI) (Du & Zhang, 2018).

[Figure 2 about here]

We further show the dynamic effect of the OBOR initiative on China's overseas loans in Fig. 2, using 2010 as the base year. Despite the insignificant differences between the OBOR and the non-OBOR countries in pre-shock years, it is observed that the aggregate lending upsurges instantaneously in response to the policy announcement in year 2014. Moreover, such effect persists and escalates until the end our sample period. A plausible explanation is that a government's official lending program may send a positive signal to state-owned banks (Kawai & Liu, 2001), which encourages them to involve more heavily in the OBOR countries. Overall, the dynamic analysis

⁵ Note that the number of observations of our results does not decrease when including lagged variables, as Horn *et al.* (2019)'s data starts in 2000 while the first year in our estimations is 2010.

suggests the long run vision of this national strategy and the increasing commitments from Chinese official creditors.

4. Robustness check

[Table 4 about here]

One potential critique could be that our results might be purely driven by other factors rather than the OBOR initiative itself, as many other confounding incidents affecting China's official lending could take place in model (1)'s common shock year setting. To address the concern, we employ an extended DD model incorporating one crucial recipient country time-varying factor, the signature year of the OBOR agreement, into the benchmark model, as China signed the OBOR agreements with countries in various years.

The impacts of loans on the OBOR countries and the land-based countries are presented in Table 4. Column (1) and (2) indicate that the agreement to join the initiative causes a strongly positive effect on China's overseas lending relative to their non-signatory and sea-road peers respectively, suggesting the substantial supports from Chinese official creditors in advocating this national strategy. Both specifications control for the lagged treatment $Treatpost_{it}$ up to three years, and no significant changes of China's lending are found prior to the year of signature. Thus, they alleviate the reverse causality concerns and show the robustness of our estimations. That is, it is not the loan commitments per se that entice countries to join the OBOR initiative and to sign the agreements.

5. Conclusion

Using a novel and rigorous aggregate loan data, this paper investigates whether China's overseas lending favors the One Belt One Road countries. Our difference-in-

differences results show that the initiative does promote China's outbound lending, and especially to the land belt countries. The impact intensifies and continues throughout our sample period. Our results are robust if adopting the year of signature as an alternative shock. Overall, our findings contribute to the literature that a national strategy's launch could be a critical determinant of one country's overseas loans.

References

- Balding, C., 2017. Can China Afford Its Belt and Road? *Bloomberg*. <https://www.bloomberg.com/view/articles/2017-05-17/can-china-afford-its-belt-and-road> (accessed 19 December 2019).
- Berger, A. N., 2007. International comparisons of banking efficiency. *Financial Markets, Institutions & Instruments*, 16(3), 119-144. <https://doi.org/10.1111/j.1468-0416.2007.00121.x>
- Berger, A. N., Demirgüç-Kunt, A., Levine, R., Haubrich, J. G., 2004. Bank concentration and competition: An evolution in the making. *J. Money Credit Bank*. 433-451. <https://www.jstor.org/stable/3838945>
- Bräutigam, D., 2011. Aid ‘with Chinese characteristics’: Chinese foreign aid and development finance meet the OECD-DAC aid regime. *J. Int. Dev.* 23(5), 752-764. <https://doi.org/10.1002/jid.1798>
- Cerutti, E., & Zhou, H., 2018. The Chinese Banking System: Much more than a Domestic Giant. VoxEU. <https://voxeu.org/article/chinese-banking-system> (accessed 19 December 2019).
- Cheng, L. K., 2016. Three questions on China's “Belt and Road Initiative”. *China Econ. Rev.* 40, 309-313. <https://doi.org/10.1016/j.chieco.2016.07.008>
- Coppola, A., Maggiori, M., Neiman, B., Schreger, J., 2019. Redrawing the Map of Global Capital Flows: The Role of Cross-Border Financing and Tax Havens. Mimeo. <https://faculty.chicagobooth.edu/brent.neiman/research/CMNS.pdf>
- Dinc, S., 2005. Politicians and banks: political influences on government-owned banks in emerging countries. *J. Financ. Econ.* 77, 453–479. <https://doi.org/10.1016/j.jfineco.2004.06.011>
- Dreher, A., & Fuchs, A., 2016. Rogue aid? An empirical analysis of China’s aid allocation. *Canadian J. Econ.* 48(3), 988-1023. <https://doi.org/10.1111/caje.12166>
- Dreher, A., Fuchs, A., Parks, b., Strange, A. M., Tierney, M. J., 2018. Apples and Dragon Fruits: The Determinants of Aid and Other Forms of State Financing from China to Africa. *Int. Stud. Q.* 62(1), 182 – 194. <https://doi.org/10.1093/isq/sqx052>
- Du, J., & Zhang, Y., 2018. Does one belt one road initiative promote Chinese overseas direct investment?. *China Econ. Rev.* 47, 189-205. <https://doi.org/10.1016/j.chieco.2017.05.010>

Dymski, G., 2003. The International Debt Crisis, in: Michie, J. (ed.), *The Hand Book of Globalisation*, Cheltenham: Edward Elgar, pp. 117-134.

Feenstra, R. C., Inklaar, R., Timmer M. P., 2015. The Next Generation of the Penn World Table. *Am. Econ. Rev.* 105(10), 3150-3182. DOI: 10.1257/aer.20130954

Goldberg, L. S., 2002. When is US bank lending to emerging markets volatile?. In *Preventing currency crises in emerging markets* (pp. 171-196). University of Chicago Press. <http://www.nber.org/chapters/c10636>

Healey, H., 1995. The International Debt Crisis, in Ghatak, S. (ed.), *Introduction to Development Economics*. London: TJ Press, pp. 424-448.

Herrero, A. G., & Xu, J., 2017. China's Belt and Road Initiative: Can Europe Expect Trade Gains?. *China & World Econ.* 25(6), 84-99. <https://doi.org/10.1111/cwe.12222>

Horn, S., Reinhart, C. M., Trebesch, C., 2019. China's Overseas Lending. NBER Working Paper No. 26050. <http://www.nber.org/papers/w26050>

Hurley, J., Morris, S., Portelance, G., 2019. Examining the debt implications of the Belt and Road Initiative from a policy perspective. *J. Infrastruct. Policy Dev.* 3(1), 139-175. <http://dx.doi.org/10.24294/jipd.v3i1.1123>

Inklaar, R., Woltjer, P., Albarrán, D. G., 2019. The composition of capital and cross-country productivity comparisons. *Int. Productivity Monitor.* (36), 34-52.

Kawai, M., & Liu, L. G., 2001. Determinants of International Commercial Bank Loans to Developing Countries. In *Far Eastern Meeting of the Econometric Society, Kobe, Japan, July* (pp. 20-21).

Kraay, A., 2014. Government spending multipliers in developing countries: evidence from lending by official creditors. *Am. Econ. J.: Macroecon.* 6(4), 170-208. DOI: 10.1257/mac.6.4.170

Kynge, J., 2015. Chinese overseas lending dominated by One Belt, One Road strategy. *Financial Times*, 18. <https://www.ft.com/content/e9dcd674-15d8-11e5-be54-00144feabdc0> (accessed 19 December 2019).

Li, Z., Huang, Z., Dong, H., 2019. The Influential Factors on Outward Foreign Direct Investment: Evidence from the “The Belt and Road”. *Emerg. Markets Financ. Trade.* 1-16. <https://doi.org/10.1080/1540496X.2019.1569512>

Lin, J. Y., & Wang, Y., 2017. Development beyond aid: Utilizing comparative advantage in the belt and road initiative to achieve win-win. *J. Infrastruct. Policy Dev.* 1(2), 149-167. <http://dx.doi.org/10.24294/jipd.v1i2.68>

Mao, H., Liu, G., Zhang, C., Atif, R. M., 2019. Does belt and road initiative hurt node countries? A study from export perspective. *Emerg. Markets Financ. Trade*. 55(7), 1472-1485. <https://doi.org/10.1080/1540496X.2018.1553711>

Mattlin, M., & Nojonen, M., 2015. Conditionality and path dependence in Chinese lending. *J. Contemporary China*. 24(94), 701-720. <https://doi.org/10.1080/10670564.2014.978154>

Moser, J., 2017. China's Bridge to Nowhere. *Forbes*. <https://www.forbes.com/sites/joelmoser/2017/09/07/chinas-bridge-to-nowhere/#41f713951568> (accessed 19 December 2019).

Porzecanski, A. C., 1981. The international financial role of US commercial banks: Past and future. *J. Bank. Financ.* 5(1), 5-16. [https://doi.org/10.1016/0378-4266\(81\)90004-2](https://doi.org/10.1016/0378-4266(81)90004-2)

Schularick, Moritz, and Alan M. Taylor. 2012. "Credit Booms Gone Bust: Monetary Policy, Leverage Cycles, and Financial Crises, 1870-2008." *Am. Econ. Rev.* 102 (2): 1029-61. DOI: 10.1257/aer.102.2.1029

Yu, H., 2017. Motivation behind China's 'One Belt, One Road' initiatives and establishment of the Asian infrastructure investment bank. *J. Contemporary China*. 26(105), 353-368. <https://doi.org/10.1080/10670564.2016.1245894>

Zucman, G., 2013. The Missing Wealth of Nations: Are Europe and the U.S. Net Debtors or Net Creditors? *Q. J. Econ.* 128 (3), 1321-64. <https://doi.org/10.1093/qje/qjt012>

Table 1 Descriptive statistics.

This table presents the summary statistics. Detailed definitions of all the variables are listed in **Appendix Table A**.

Variable	Obs	Mean	Std. Dev.	Min	Max
Loan Amount (Log)	839	19.384	4.744	0.000	24.344
GDP (Log)	839	26.310	1.912	21.294	30.894
Population (Log)	776	18.568	1.750	13.454	23.318
Capital Stock (Log)	776	28.424	1.870	23.535	33.333
Depreciation Rate (Ratio)	776	0.049	0.014	0.021	0.102
Exchange Rate (Ratio)	776	1129.850	3510.052	0.088	33226.300
Capital Services (Ratio)	560	1.132	0.239	0.137	3.034

Table 2 Parallel trend test.

This table presents the results of the parallel trend test. The dependent variable is the logarithm of China's aggregate loan amount to the recipient country i . Each pre-shock year dummy is interacted with the OBOR country dummy before the policy announcement. For brevity, we do not report the estimate for $Post_t \times OBOR_i$. Country fixed effect is also included. Robust standard errors, clustered at recipient country level, are reported in parentheses. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

VARIABLES	(1) Loans
$Year\ 2011_t * OBOR_i$	-0.705 (0.564)
$Year\ 2012_t * OBOR_i$	-0.365 (0.467)
$Year\ 2013_t * OBOR_i$	-0.781 (0.568)
Constant	18.27*** (0.220)
Country FE	Yes
Observations	839
Adjusted R-squared	0.698

Table 3 The impact of the OBOR policy on China's overseas lending.

This table shows the DD results investigating the impact of the OBOR policy on China's overseas lending. The dependent variable is the logarithm of China's aggregate loan amount to the recipient country i . Both country controls, country and year fixed effects are included in all specifications. Column (1) to (4) are the DD results of all countries. Column (1) is the baseline and column (2) adds the country lagged controls. Column (3) and (4) include the lagged loans up to 3 years with and without lagged country controls. Columns (5) to (8) show the corresponding results for land belt countries. Robust standard errors, clustered at recipient country level, are reported in parentheses. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

VARIABLES	All Countries				The OBOR Countries			
	(1) Loans	(2) Loans	(3) Loans	(4) Loans	(5) Loans	(6) Loans	(7) Loans	(8) Loans
$Post_t * OBOR_i$	1.378** (0.525)	1.376*** (0.509)	1.010*** (0.371)	0.981** (0.399)				
$Post_t * Land_i$					2.653*** (0.908)	2.893*** (0.965)	1.323** (0.636)	1.347* (0.713)
$Loan_{it} (-1)$			0.494*** (0.0731)	0.502*** (0.0755)			0.504*** (0.0870)	0.488*** (0.0756)
$Loan_{it} (-2)$			0.0376*** (0.0138)	-0.0203 (0.0276)			-0.0313 (0.0254)	0.0371 (0.0672)
$Loan_{it} (-3)$			-0.0173 (0.0206)	-0.0133 (0.0194)			-0.0163 (0.0505)	-0.0170 (0.0624)
Constant	70.70 (158.1)	36.5 (164.8)	-17.41 (123.5)	-60.58 (123.6)	135.1 (292.3)	54.53 (300.9)	-5.156 (229.6)	-235.5 (238.8)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Lag Controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	560	560	560	560	280	280	280	280
Adjusted R-squared	0.807	0.812	0.855	0.859	0.820	0.825	0.859	0.868

Table 4 The impact of signing the OBOR agreement on China’s overseas lending.

This table shows the time-varying DD results investigating the impact of the OBOR *agreement* on China’s overseas lending. The dependent variable is the logarithm of China’s aggregate loan amount to the recipient country *i*. $Treatpost_{it}$ is a dummy variable and equals 1 after country *i* signs the agreement with China in year *t*, and 0 otherwise. $Treatpost_{it} * Land_i$ is a dummy variable and equals 1 after land-based country *i* signs the agreement with China in year *t*, and 0 otherwise. The country fixed effect, the year fixed effect, country controls and lagged treatment variables $Treatpost_{it}$ up to three years are included in all specifications. Column (1) presents the result for the OBOR countries and column (2) is for the land belt countries. Robust standard errors, clustered at recipient country level, are reported in parentheses. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

VARIABLES	(1) Loans	(2) Loans
$Treatpost_{it}$	1.066* (0.562)	
$Treatpost_{it} * Land_i$		1.959* (1.007)
$Treatpost_{it} (-1)$	0.298 (0.413)	0.539 (0.946)
$Treatpost_{it} (-2)$	-1.037 (0.699)	0.545 (1.464)
$Treatpost_{it} (-3)$	-0.135 (0.672)	0.0471 (1.599)
Constant	3.994 (157.7)	199.2 (337.3)
Country FE	Yes	Yes
Year FE	Yes	Yes
Country Controls	Yes	Yes
Country Lag Controls	Yes	Yes
Observations	560	280
Adjusted R-squared	0.812	0.826

Figure 1 The trend of China's over sea lending to the OBOR and the non-OBOR countries.

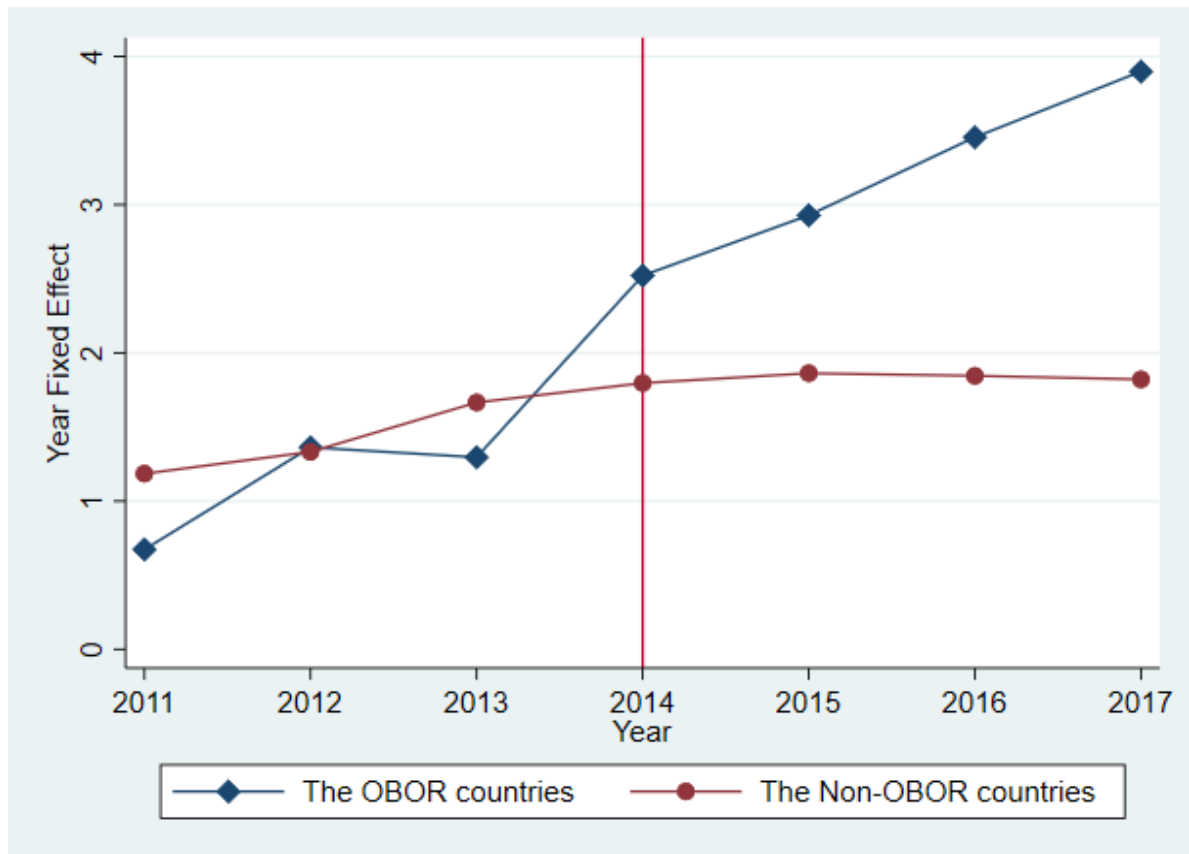
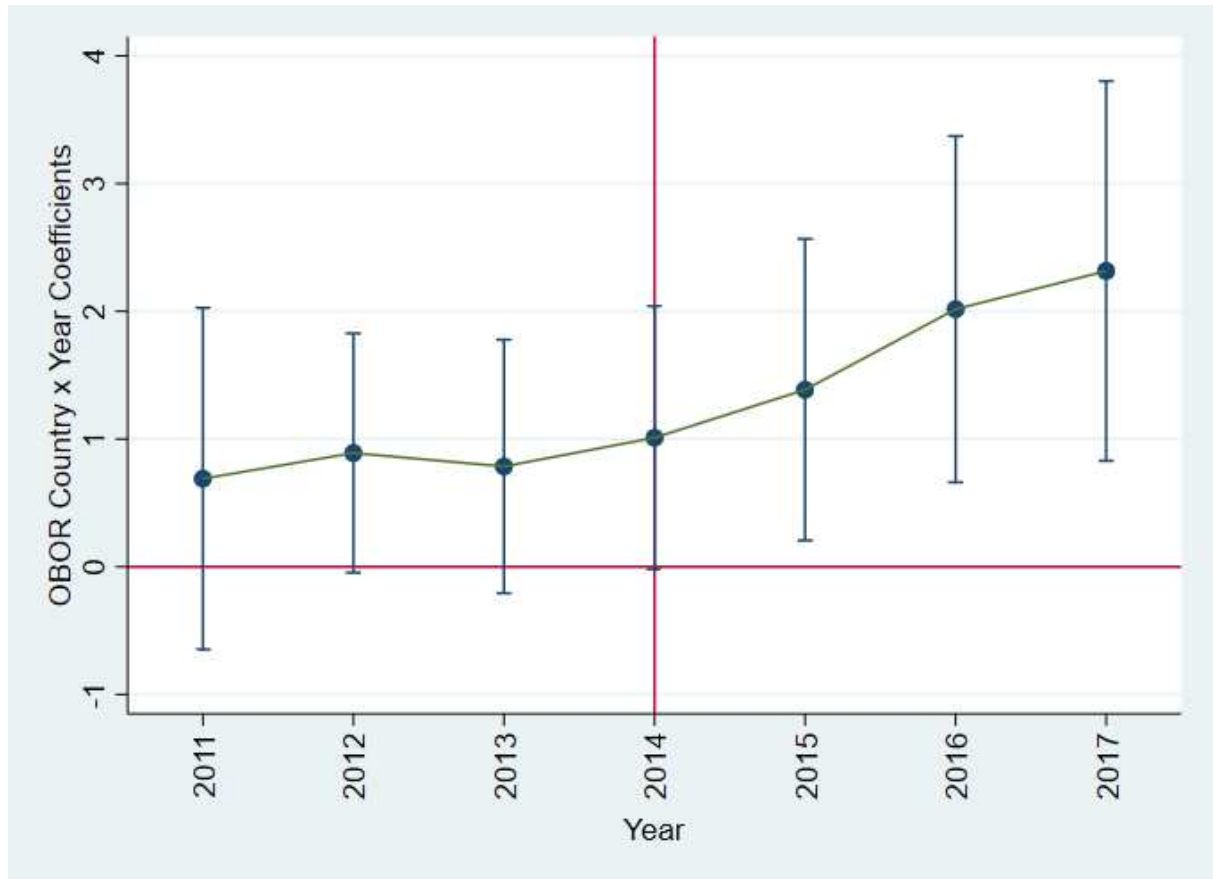


Figure 2 The dynamic effects of the OBOR initiative in China's overseas loans.



Appendix Table A Variable Definitions and Sources

Variable	Sources	Definition
Loan Amount (Log)	Horn et al. (2019)	Natural logarithm of the estimated total external debt owed to China (USD).
GDP (log)	Horn et al. (2019)	Natural logarithm of Nominal GDP in USD.
Population (log)	Penn World Table 9.0	Natural logarithm of the country's population.
Capital Stock (log)	Penn World Table 9.0	Natural logarithm of the capital stock at constant 2011 prices in USD.
Depreciation Rate	Penn World Table 9.0	Average depreciation rate of the capital stock.
Exchange Rate	Penn World Table 9.0	Official exchange rate (national currency / USD).
Capital Services	Penn World Table 9.0	Capital services at constant 2011 national prices (2011=1).

Table A1 Loan recipient country list.

This table lists all the recipient countries in our analysis, as to their alphabetical orders. Countries denoted by # and * are the land-road countries and the sea-belt countries respectively.

Albania*	Dominica	Mauritius	Tanzania
Algeria	Ecuador	Mexico	Togo
Angola	Egypt*	Mongolia#	Tonga#
Argentina	Equatorial Guinea	Montenegro*	Turkey#
Armenia#	Eritrea	Morocco	Turkmenistan#
Azerbaijan#	Ethiopia	Mozambique	Uganda
Bahamas	Fiji*	Myanmar*	Ukraine#
Bangladesh*	Gabon	Namibia	Uruguay
Belarus#	Ghana	Nepal#	Uzbekistan#
Benin#	Guinea	Niger	Vanuatu
Bolivia	Guyana	Nigeria*	Venezuela
Bosnia#	India*	Oman#	Vietnam*
Botswana	Indonesia*	Pakistan#	Yemen, Rep.*
Brazil	Iran#	Papua New Guinea	Zambia
Bulgaria#	Jamaica	Peru	Zimbabwe
Burkina Faso#	Jordan#	Philippines*	
Burundi#	Kazakhstan#	Romania#	
Cabo Verde#	Kenya*	Russia#	
Cambodia*	Kyrgyzstan#	Rwanda	
Cameroon	Laos*	Samoa	
Central African Republic	Lebanon#	Senegal	
Chad	Lesotho	Serbia*	
Chile	Liberia	Seychelles	
Colombia	Macedonia, FYR#	Sierra Leone	
Comoros#	Madagascar	South Africa	
Congo, Dem. Rep.	Malawi#	South Sudan#	
Congo, Rep.	Malaysia*	Sri Lanka*	
Costa Rica	Maldives#	Sudan#	
Cote d'Ivoire#	Mali	Suriname	
Djibouti	Mauritania	Tajikistan#	

Table A2 The signatory years of the One Belt One Road countries.

This table illustrates the signatory years of the recipient countries, as to their alphabetical orders and the news sources respectively.

Country	Sign year	Sources
Albania	2017	http://wmzh.china.com.cn/2018-11/29/content_40596228.htm
Armenia	2016	https://www.baidu.com/link?url=2lDm00NjrtMTZMwmoQaGntJ3Nk8-cx4ERPZqGlxErGuGXO7lMAnpfJCvIpLVb_kP1IoiXPz3l5moRti2cunAQESgl2iLSHYtKkSsHmARYIm&wd=&eqid=d49af4dd0006d564000000065dde42c7
Azerbaijan	2015	https://www.baidu.com/link?url=7-iWERPnubMphUG6FKia0mtuVJvGmFD_vtG7Ynyz8TIGBujozJpNrWDkrYZlAmkIgJwFUr9liUfgXTdiO_4-P15jYSpjf_GBh77qT0DoIK&wd=&eqid=fb3fbc1c00045fc8000000065dde37d2
Bangladesh	2016	https://www.baidu.com/link?url=z9gsN2EiILu68wij7bK0YG14Y5LEWOBks5JVIBmd9EEYL9JBMQOKJ-ODSrT1watS7ei6nuIaAwyda9vy7nemGpweRhjq7jVjOxrqqL43ge&wd=&eqid=91fa8848000a81a0000000065dde434e
Belarus	2015	https://www.baidu.com/link?url=vMXenUY-Fr8deYEQTzI0K4bHCq1_4GtW9vLAFr5608484cCQiTUBs4KD3ddzK_4fxIYjKOvHWqXMsBMY20EU3a&wd=&eqid=a596823b0005850f000000065dde43b1
Benin	2019	https://weibo.com/5282792576/lbzXx8hSm?type=comment
Bosnia	2017	https://www.baidu.com/link?url=29hhs94yPOE3Hd2Ppiut8k8Ieav9of3mER1sDpTf2e2OTvtSqPmkfmNVSV5S_aQE15PM4PQ0uX115rYURRyf6WIHmcE_ceuEQXxcZOrKm87&wd=&eqid=8f3561a6002f0610000000065ddd3e31
Bulgaria	2015	https://www.baidu.com/link?url=0htgAwkyqnx_O8WXraqpIAf7nc315TA13bPEz3RbKSIO6QPt9zWY0W5s3En4uaxYT53X9TwtXHmcw7iNeJLL03zGuwz-aeqAJWMO86bvae&wd=&eqid=906f81eb000439a9000000065dde387d
Burkina Faso	N.A.	
Burundi	2018	http://special.chinadevelopment.com.cn/2018zt/zflt/2018/09/1348183.shtml
Cabo Verde	2018	http://special.chinadevelopment.com.cn/2018zt/zflt/2018/09/1348183.shtml
Cambodia	2016	https://www.baidu.com/link?url=j52AtMrK8o8pDZDalaRTY-RvwHnPAANLJipxUQTWeecwJN3PyjmzLnqhsI1EitAq8TcQ1aJl-daQ-LHrR3zb8K&wd=&eqid=abe6d41b0009147f000000065dde44a7
Comoros	2018	http://news.eastday.com/eastday/13news/auto/news/china/20180831/u7ai8024912.html
Cote d'Ivoire	2018	http://special.chinadevelopment.com.cn/2018zt/zflt/2018/09/1348183.shtml
Egypt	2016	https://www.baidu.com/link?url=GtFxG7zpuokIMyqCRjM-zGPSyEvnXaW2CH7Kd6RyPRVUds-LPwI2SF-R9_D_VgRb6OuWlqxNVM6Gwz3weqexzNkRqfgkIF2qO7Eaa9vS2m2rzm_BeecBILiLWLaDLgBv&wd=&eqid=f24339c90003a223000000065dde3240

Fiji	2018	http://srcf.urumqi.gov.cn/2016n/cxdt/409980.htm
India	N.A.	
Indonesia	2018	https://www.baidu.com/link?url=5GpeYKUQgiLrcNUqQKuxSylYjz5EbsPe8EjvH_3ojsCwwkEnALJ22Mm3l1nAik_2&wd=&eqid=d06c2e4700000ab6000000065dde45a3
Iran	2016	http://mil.chinanews.com/gn/2016/01-23/7729188.shtml
Jordan	2018	https://www.baidu.com/link?url=Rwq2kDmFhcJsS0lsYU9KOYXa0Fpl3rEDw3Z4pfWvGBfypDIAo-dWWa9MH0q304kT&wd=&eqid=e6f89cc60001e63a000000065dde4b98
Kazakhstan	2014	http://www.ebrun.com/20170522/231917.shtml
Kenya	2018	http://special.chinadevelopment.com.cn/2018zt/zflt/2018/09/1348183.shtml
Kyrgyzstan	2015	https://www.baidu.com/link?url=rDdsiSPdpEQEuPCADxuW2ynNwj7d5zuXjeZpZaZ1OywJYoAbMWOtTuWdZ-ZVprbaw3qvCxWA78v2yOvtYuJtX1ASYG8yPq7bSgWrNNDNUwe&wd=&eqid=c328310a00020cdf000000065dde4cf7
Laos	2016	https://www.baidu.com/link?url=mYzaGPysR2c68eyfZtvAA4Pi8PG69qz8rD2DsPXF0_2gLKFK9Q-GWxoKDCPhr4jtsjDfNbi5iEC60oItftNDRq&wd=&eqid=a8f54561000288fa000000065dde4d0d
Lebanon	2017	https://www.baidu.com/link?url=QwFd6ucKLE1mninPyMm639hyBJWZhYckqZHmcvIX8HLO665yVpOTcoq3D1a18n4Z_NgBYKmlDaogm-2c8wYkSa&wd=&eqid=e1455fed0001bca1000000065dde31b3
Macedonia, FYR	2015	https://www.baidu.com/link?url=xTtW4xjQVf80jsY0XozgksE1QPgGdsW4TO8vMUjzm7fwMaSUdW4pVU0YYPgVzPanIih1ttZEtZRnlzm9S0V4Uq&wd=&eqid=f1ad3737000336ec000000065dde4d30
Malawi	N.A.	
Malaysia	2015	https://www.baidu.com/link?url=ek2op9k3tjrDnMjkJ9qNQIa6ox1WoAdMdzAlY3vb8MdIg5gaa1KbgCzgA3_fdm_SE1EFkTf2_VLVmEA_dADLeq&wd=&eqid=a47ef08700068b93000000065dde5485
Maldives	2014	http://www.ebrun.com/20170522/231917.shtml
Mongolia	2016	http://www.ebrun.com/20170522/231917.shtml
Montenegro	2017	http://finance.sina.com.cn/roll/2019-08-09/doc-ihytcitm7873343.shtml
Myanmar	2017	http://www.nanhai.org.cn/review_c/291.html
Nepal	2017	https://www.baidu.com/link?url=XrRVArV4oshIzXWvpuGIDRwLq2UznNZH_cJOJU4KQz6_QRUzXyAKBmImH4onYOT1nPK-ZXOF8Q_1GuSjyUvo3keUoBnIPxXtjgbJTIjEs3&wd=&eqid=be07c28000055581000000065dde5597
Nigeria	2018	http://special.chinadevelopment.com.cn/2018zt/zflt/2018/09/1348183.shtml
Oman	2018	https://www.baidu.com/link?url=MJpMc1KzrHukDgsJmzaoeME0sccFsGqsdl6o8WyyLufw9h3Kc_4X7TGxe5bp7RW1aJidCquUTEDrI_-CfudJq_O7x5INbTEoTU7UyLzg-RC&wd=&eqid=ecda24460001d6f4000000065dde4923
Pakistan	2015	http://dy.163.com/v2/article/detail/EDNN11L50538107F.html
Philippines	2018	https://www.baidu.com/link?url=XfWRpXTsGPUWwYKbnHu9uFEPIXKvbWBOG1W4yzKD8i9oiLINQg2az2S5Burb6V5l&wd=&eqid=f9a763e40004d967000000065dde3458

Romania	2015	https://www.baidu.com/link?url=zuYLez9JDuyS3Pmb9MWuIwnh13iifzWfUHYdXJuH7XkGnVDPM08hN7ix36hpwVudbnIxHp3GWbAzEt0hZr-GfBfqGZZwfWeUaTmvrXwShimu_qsiDYn3KVOrb26yccd7&wd=&eqid=bd488c660007cba7000000065dde3b7a
Russia	2015	https://www.baidu.com/link?url=Z7yrihrARc9WZjGK_A8OCAeU82qvK7tkd0Xbr0EIK-mslJnsfcVUTIm5KG48BOD6XKCnm2E-EHpizIEvXIE-9HkYOGlyRRO9SeNggcq12oy&wd=&eqid=a3b2178e0000d426000000065dde4181
Serbia	2015	http://www.chinanews.com/tp/hd2011/2015/11-26/585506.shtml
South Sudan	2018	http://special.chinadevelopment.com.cn/2018zt/zflt/2018/09/1348183.shtml
Sri Lanka	2017	https://www.baidu.com/link?url=Gr6F23BtFzejCinPL1v6X4o2vNR61fsqjarr--dnXKPHFdebJdR4C0kB-adBzgjYDbckkHEbyfWR10xiNf1UuoEtv_f9CYIM8LGuxEYTNka&wd=&eqid=85f91dbb000531cf000000065dde39a0
Sudan	2018	http://m.haiwainet.cn/middle/3542291/2018/0716/content_31353989_1.html
Tajikistan	2015	https://www.baidu.com/link?url=4BDYsida3IwQuIlgXuoEGLz0kD1LEBOWKjZRw8szIdvNshnq8CB-x_Qo--NlxRH&wd=&eqid=fb85773f0003171d000000065dde4f2a
Tonga	2018	http://sputniknews.cn/politics/201811181026869322/
Turkey	2015	https://www.baidu.com/link?url=sU7LiD9NyPaDoZSAMPsdRSscyPXBbLEPpTcMIY8S55_URmUb4J92Tde_R1D6_VTRAQc-JAeZxWJFNvQWzQfK16BlpoRIT6kBlqmRHSZmdLKK&wd=&eqid=d3796e600008d3e5000000065dde4026
Turkmenistan	2015	http://www.scio.gov.cn/m/31773/35507/35515/35523/Document/1625566/1625566.htm
Ukraine	2014	https://www.baidu.com/link?url=5MYTGGoxKxyiCF7MEGlpVKZFrWnOh4-62GogS4PNwBexqrl8q_L9Gwg4VFbSpz69&wd=&eqid=c328310a0004696d000000065dde5707
Uzbekistan	2015	https://www.baidu.com/link?url=SOSCA3A7QpEU5uvwcA2sZ127LraXljI99DtF7bZ7PDLt8Qn4subXf8T92qhYVg8V34DrhPgS6rdG20G7JQazvKUD9gW_By4VzIA22ZVfPxYjgUCzRAZXTJHTo4peEZZF&wd=&eqid=e372ea5b000b9a0b000000065dde5291
Vietnam	2017	https://www.baidu.com/link?url=qzFsJP2xwugHNkaPJJbePsKrIAV9h5jSbEBRzp_fi6rqfKNCg7XHYs37FHrIX7unWMzQl4bOJNfV-mI4QTArHZjpRetvYW-3YHH91CALP9e&wd=&eqid=f499a51a000563e2000000065dde3a83
Yemen, Rep.	2019	http://finance.sina.com.cn/roll/2019-04-28/doc-ihvhiewr8617644.shtml