

# Borrowing from China and Sovereign Credit Risk

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China’s lending to developing economies has dramatically risen since the mid-2000s: Horn, Reinhart and Trebesch (2021) document that China is now the largest official creditor to developing countries, ahead of Paris Club governments, the World Bank, or the International Monetary Fund (IMF). Debt contracts with China come with a variety of terms such as lender-controlled revenue accounts, strict confidentiality provisions, and ‘cancellation, acceleration, and stabilization’ powers that suggest China has substantial privileges as a lender (see Gelpern et al. 2022). Yet, China is not the sole lender to developing countries: Governments also borrow on international bond markets. We study how these lending relationships with China affect access to credit from international bondholders.

Using data on external marketable debt and prices combined with Chinese lending data, we find that a “China funding event” is associated with a relative decline in both marketable debt, new bond issuance, and sovereign bond yields. On the other hand, we document a significant “China debt restructuring event” premium: Countries face markedly larger spreads after a Chinese-debt restructuring episode. We then discuss these findings through the lens of standard sovereign debt models.

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## I. Borrowing from China and International Debt Markets

### A. Data Description

Due to the opaque nature of China’s lending and its confidentiality clauses, official reporting of China’s international financing arrangements is not consistently available. Dreher et al. (2021) constructed AidData’s “Global Chinese Official Finance Dataset,” a major data resource documenting the financing terms of thousands of China-funded projects across more than 150 countries.<sup>1</sup> Horn, Reinhart and Trebesch (2021) construct country-level aggregate debt estimates tracing China’s rise as a leading official lender: More than half of debt liability to China had not been reported to the IMF or the World Bank.

We assemble a country-level annual dataset to document the effects of Chinese lending on the amount and the pricing of marketable external public debt. We combine data on Chinese lending from Horn, Reinhart and Trebesch (2021) and debt restructurings in Horn, Reinhart and Trebesch (2022) with bond prices and bond issuances obtained from Bloomberg Finance L.P.

For each country and year, our dataset includes the debt stock positions with China and indicators of events related to the Chinese loans, such as new funding rounds or restructuring events. We code Chinese funding events as large increases in debt vis-à-vis China. Specifically, a China funding event occurs when the country experiences an above-median debt-to-GDP increase.

We then construct measures of new market debt issuance and yields on marketable international debt using bond-level data ex-

<sup>1</sup>Morris, Parks and Gardner (2020) and Bräutigam and Gallagher (2014) also study the nature of Chinese financing.

tracted from Bloomberg. We focus on foreign currency bonds with maturity longer than 10 years. We also collect annual measures of external public debt held by bondholders from the World Bank International Debt Statistics (IDS) along with standard macroeconomic variables such as GDP and foreign reserves. Since many developing countries do not issue foreign-currency debt on international capital markets, data on bond yields span a smaller set of countries.<sup>2</sup>

These variables constitute our annual country-level dataset on China funding events, Chinese debt stocks, sovereign bond prices, and marketable debt dynamics.

### B. Empirical Strategy

We estimate the effects of Chinese debt events on external marketable debt price or quantity outcomes  $Y_{i,t}$  in Equation 1

$$(1) \quad Y_{i,t} = \beta (\text{CHN}_{\text{event}}^{\text{debt}})_{i,t} + \gamma X_{i,t} + \varepsilon_{i,t}$$

where  $i$  represents a country,  $t$  denotes a year,  $(\text{CHN}_{\text{event}}^{\text{debt}})_{i,t}$  indicates whether a China debt event (funding or restructuring) occurred for country  $i$  in period  $t$ , and  $X_{i,t}$  are additional controls including time fixed effects, country fixed effects, foreign reserves, lagged log market debt value, and lagged bond yields. We report our estimates in Table 1 for the following sovereign external (marketable) debt outcomes  $Y_{i,t}$ : log external debt, new issuance indicator, and yields.

### C. Stylized facts

The first two columns in Table 1 document the effects of China funding events on external debt, while the last three columns show the response of sovereign bond yields.

We find in column (1) that China lending events are associated with a relative reduction by 18 percentage points in total external marketable debt. In column (2), we leverage the bond issuance indicators.

<sup>2</sup>Note that one only needs to observe a bond at one point in time to know its issuance date. Bond yields, on the contrary, vary over time. Our dataset therefore contains more bond issuance data than bond yield data.

Consistent with the result on debt stocks, China funding events are associated with a 10 percentage points decline in the linear probability of long-term bond issuance. China lending events are therefore associated with reduced borrowing from international bondholders.

We now turn to sovereign bond yields around China debt events. While the framework is similar to the one used for external debt dynamics, the sample size is smaller. We use the yield-to-maturity on long-term bonds with 10+ years of remaining maturity as our yield measure.

We find in column (3) that China lending events are associated with a reduction of 85 basis points in sovereign bond yields. We estimate the effect of Chinese debt restructurings in columns (4)-(5). We find substantial price effects in the wake of Chinese debt restructuring. Borrowing costs spike by almost 300 basis points following debt restructuring events, albeit with large standard errors. Due to the protracted nature of debt restructurings, we also estimated effects using a one-year lag China debt restructuring indicator in column (5) where the increase in yields is both larger and more precisely estimated.<sup>3</sup> See Kondo et al. (2024) for detailed estimation results using alternative specifications.

Overall, we document a “China funding round discount” and a “China restructuring round premium,” along with reduced bond issuances following China funding rounds.

We now turn to the theoretical implications of these findings in the context of the sovereign debt literature and the characteristics of China’s lending to developing countries.

## II. Theoretical Considerations on the Effects of China Lending Shocks

Even though China’s rise as a major creditor to developing countries is staggering,

<sup>3</sup>These effects are driven by Venezuela and its multiple Chinese debt restructuring rounds. China debt restructuring data are also noisy across sources (see Trebesch, Papaioannou and Das, 2012; Asonuma and Trebesch, 2016; and Horn, Reinhart and Trebesch, 2022.).

Table 1—: External Debt, Bond Yields, and China Debt Events

	log debt (1)	issued bond (2)	bond yields (3) (4) (5)		
CHN funding $_{i,t}$	-0.180*** (0.057)	-0.099** (0.050)	-0.852*** (0.297)		
CHN restructuring $_{i,t}$				3.336* (1.942)	
CHN restructuring $_{i,t-1}$					4.844*** (1.788)
adj. R <sup>2</sup>	0.986	0.290	0.842	0.848	0.855
N	691	854	299	298	298

All regressions include country fixed effects, time fixed effects, and lagged debt values. Robust standard errors are in parentheses. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

the channels through which debt vis-à-vis China affects sovereign credit risk and welfare are not well understood: What features of Chinese debt contracts need to be incorporated into standard sovereign default models to rationalize the effects we document in Table 1? Are these debt arrangements desirable for borrowing countries?

#### A. The rollover risk channel

Gelpert et al. (2022) closely examine 100 China debt contracts and show that they entail clauses that (i) make it hard to default thanks to China’s control of revenue accounts and a *de facto* seniority of China over other lenders through restrictive disclosure clauses and collective restructuring restrictions (“No Paris Club” clauses), and (ii) allow China to unilaterally ‘accelerate’ the debt repayment schedule. Gelpert et al. (2022) argue that these clauses significantly differ from other official creditors’ practices.

In Kondo et al. (2024), we model these features of China’s loans as non-defaultable debt with rollover risk and ask whether this form of rollover risk can rationalize the price and quantity effects of Chinese lending. We show that the riskiness of non-defaultable China flows has an impact on equilibrium debt prices and quantities. In particular, debt inflows from China allow borrowing countries to deleverage from international capital markets not only through an income effect but also through the rollover risk effect: the risk of

a future sudden stop from China induces precautionary savings through reduced borrowing in anticipation of future debt accelerations. Bond issuance, default risk, and bond yields all fall, consistent with the data. On the other hand, when the borrowing country faces a debt acceleration event, it borrows more from international capital markets in order to smooth consumption. It also becomes more likely to default as servicing the bond market debt becomes more costly due to the repayment of non-defaultable Chinese loans. Both higher debt and increased default risk lead to higher spreads, again consistent with the data.

#### B. Welfare and Alternative Risk Scenarios

Beyond the market effects of rollover risk and China’s lending, it is not clear whether such risky China debt contracts are welfare-improving from the perspective of borrowing countries.

In Kondo et al. (2024), we find that the borrowing country is on average better off with access to Chinese loans, even though they are subject to rollover risk. However, when default is more salient, e.g. in low-income or high-debt states, the welfare gains from having access to Chinese loans (compared to an economy without China debt) are lower because the country needs to borrow more from international lenders in the future.

In Kondo et al. (2024), we further relax

the baseline model to study the effects of alternative risk scenarios related to Chinese funding. To capture the possibility of a significant shift in China’s global debt policy, they nest an exogenous “Chinese sudden stop” risk in which the country has to repay its Chinese debt, if any, and permanently lose access to flows from China. We also explore a relaxation of the no-default assumption on Chinese debt and allow borrowing countries to selectively default on China at the cost of a permanent exclusion from China’s lending.

### C. Related Theoretical Literature

These theoretical considerations are related to existing work in the quantitative literature on sovereign defaults. With long-term debt, debt dilution mechanisms highlighted in Hatchondo, Martinez and Sosa-Padilla (2016) are essential to the transmission of Chinese lending rollover risk concerns in Kondo et al. (2024). Hur and Kondo (2016), Johri, Khan and Sosa-Padilla (2022), and Bianchi, Hatchondo and Martinez (2018) among many others also study rollover risk and interest rate uncertainty.

Numerous studies have recently documented “hidden debts.” While Chinese debt features prominently in these studies, Guler, Onder and Taskin (2022) study the quantitative implications of asymmetric information between borrowing countries and lenders with an application to Bolivia. Horn et al. (2023) systematically measure the degree of public debt under-reporting in a large sample of developing and emerging market countries, showing that the phenomenon of “hidden debt” extends well beyond Chinese debt. Using a quantitative model of sovereign debt, these authors find that hidden debt revelations increase sovereign spreads and decrease welfare. Our investigations are also closely related to Alfaro and Kanczuk (2022) and Gamboa (2023) who use sovereign default models to explore the implications of official lending à la China, information frictions, and debt transparency policies on equilibrium debt, prices, and welfare with short-

term debt.<sup>4</sup>

### III. Conclusion

While China has become a major lender to developing countries, the nature and the future of Chinese debt contracts remain shrouded in significant uncertainty.

Chinese debt contracts therefore warrant theoretical, quantitative, and empirical investigations on their implications for the welfare of borrowing countries and the properties of the borrowing countries’ debt vis-à-vis other international bondholders.

More broadly, the unique features of Chinese lending—namely rollover risk concerns, information frictions, lack of coordination with other lenders, or *de facto* debt seniority—motivate new extensions of the workhorse models of sovereign default and further empirical explorations.

We trace how international bond market quantities and prices respond to Chinese lending shocks. We also illustrate how these effects can be understood through one promising theoretical extension of the canonical sovereign default model: the rollover risk channel of Chinese lending.

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<sup>4</sup>Onjala (2018), Hurley, Morris and Portelance (2019), and Bandiera and Tsiropoulos (2020) also investigate the implications of increased Chinese debt for the sustainability of the borrowing countries’ debt.

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