

The Missing Defaults Until Next Crisis - Evidence from Chinese Lending to Other Developing Countries

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Abstract

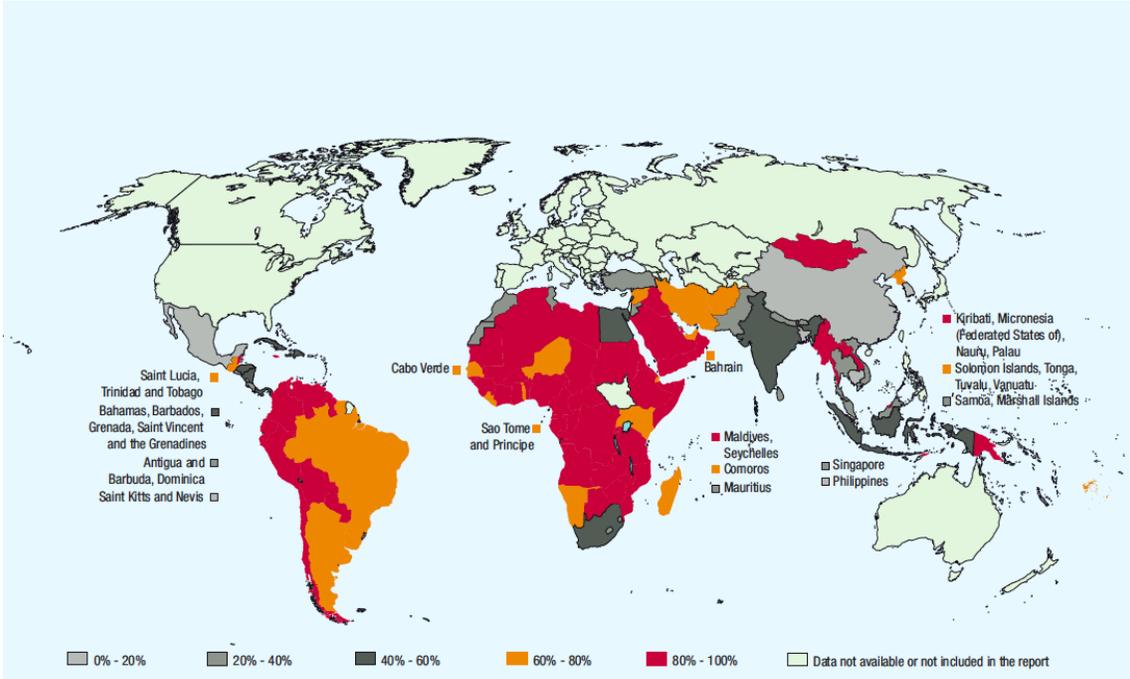
The ebb and flow of international capital is often associated with debt booms and defaults by sovereign countries and global financial crises. Commodity-dependent developing countries are especially vulnerable to the sudden reversal of international capital due to their restricted access to international debt market, and the tendency for procyclical government spending and the limited capacity in revenue collection. Curiously, the reported cases of sovereign defaults only rose modestly following the peak of commodity prices around 2011. The credits partly go to the governments of developing countries, which seem to have been more capable of preparing their public finances to handle the sudden stop and reversal of international inflows associated with the crash of commodity prices. Meanwhile, these missing defaults are partly the results of increasing Chinese lending globally, both in China's capacity as an Official lender (e.g. Official Development Assistance) and by Chinese state-owned enterprises that directly finance projects in recipient countries (e.g. non-concessional loans). The value of this paper is to make up for the gap in literature on Chinese lending and its impact on the likelihood of the next global financial crisis (likely a sovereign debt crisis). It draws on quantitative analysis to study the impact of Chinese lending on the debt tolerance of other developing countries, and qualitative evidence from the Venezuela case to understand the international political economy aspect of Chinese lending.

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Two-thirds of all developing countries are commodity dependent, according to the most recent State of Commodity Dependence Report from the United Nations Conference on Trade and Development (UNCTAD). These countries are concentrated in Africa and Asia (Figure 1). Commodity dependence is not only widespread, but also growing. UNCTAD reports that nine more developing economies became commodity-dependent in 2014-15. Compared to 82 countries that were deemed dependent on commodity exports in 2009-10, the number of CDDCs increased to 91 (UNCTAD 2017).

Africa, with 46 commodity exporters on the list, hosts more than half of the world’s CDDCs. And among the nine countries entered the CDDC rank, seven are located in Africa. Asia accounts for the other two new CDDCs.

Figure 1. Map of Commodity Dependent Developing Countries.



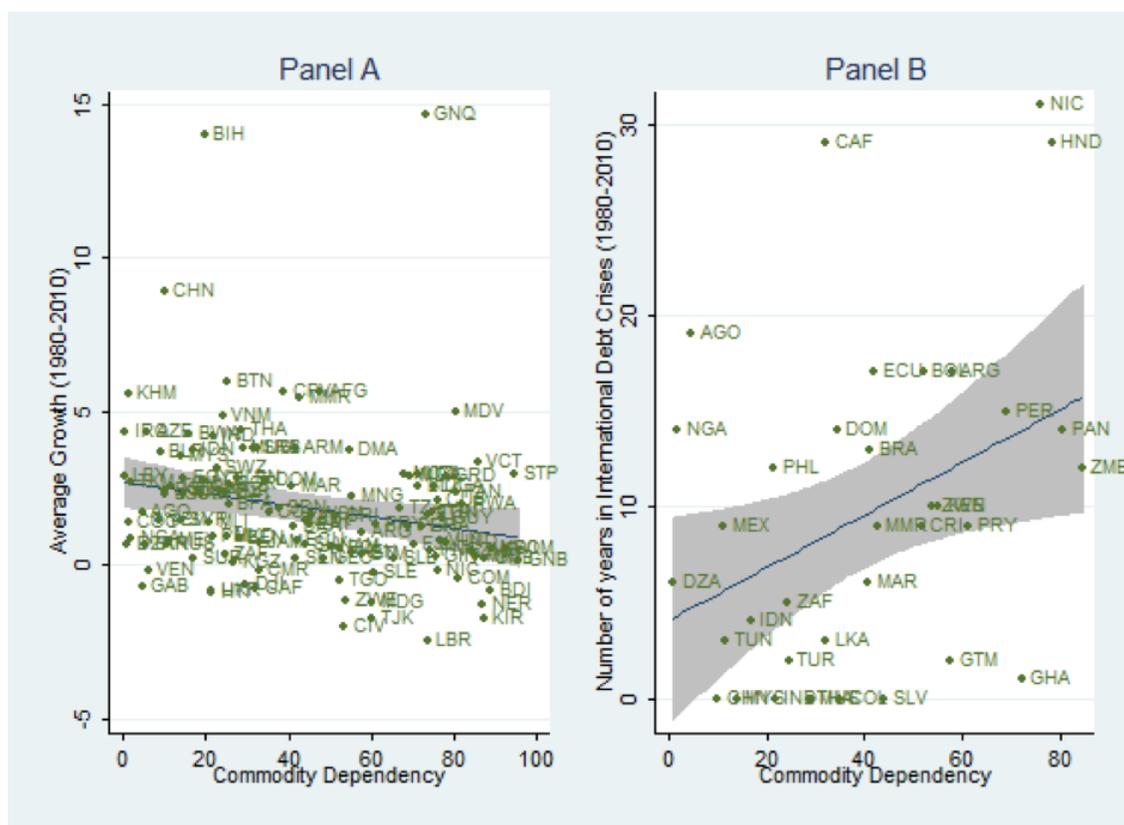
Source: Special Unit on Commodities, UNCTAD
 Note: Commodity exports as a percentage of merchandise exports

Africa and Asia together account for more than 80 percent of all CDDCs in 2014-15. Meanwhile in 2013, China formally put out its Belt and Road Initiative (BRI), an umbrella for China-led infrastructure projects spanning across Asia and Africa. It seems to suggest correlation between China’s infrastructure footprint and the span of commodity dependence in Africa and Asia. China’s BRI, often financed by above market-term interest rates, could potentially worsen the indebtedness of CDDCs in those regions. However, correlation does not equal causation. Thus, the next sections provide additional evidence to discern the possibility

that Chinese lending (particularly driven by infrastructure financing overseas) might account for the relatively low number of sovereign debt problems, the "missing defaults."

CDDCs face lower long-term growth prospects. Figure 2a plots average GDP per capita growth between 1980 and 2010. It shows that with higher commodity dependency comes lower long-term growth prospects this is a pattern known as the resource curse and is widely observed in development economics literature.

Figure 2. Lower long-term growth and higher exposure to debt crises for CDDCs



Source: Authors own calculations based on data from World Development Indicators.

Note: Panel A plots GDP per capita average growth in the 1980-2010 period against commodity dependency of developing countries, following Frankel (2012). Panel B plots the number of years a country spent in International Debt Crises from 1960 to 2010, as calculated by Reinhart and Rogoff (2010), against commodity dependency. On both panels, Commodity Dependency is defined as the average of fuel, ores and metals exports (% of merchandise exports) over the 1980-2010 period.

One of the main channels through which the resource curse takes place is debt vulnerability. When commodity prices fall, commodity dependent governments experience decreasing revenues at the same time as debt financing becomes more expensive. With lower commodity prices investor confidence tends to deteriorate and outflows of foreign currency put down-

ward pressure on the exchange rate. A weaker domestic currency and increased risk premium make foreign debt servicing more expensive, which further deteriorates the governments fiscal position and increases risk perception and currency outflows, entering a downward spiral that can lead to an international debt crisis. Figure 2b plots the number of years a country spent in international debt crises in the 1980-2010 period against average commodity dependency in the period. It shows that higher commodity dependency is strongly associated with higher probability of entering and staying in an international debt crisis.

I. Macroeconomic Management

Curiously, the reported cases of sovereign defaults only rose modestly following the peak of commodity prices around 2011 (Reinhart 2017).

Reinhart et al (2017) collect 200 years of data on capital flow, commodity price, interest rate and their correlation with default incidences. It is unsurprising that the combined forces of capital inflow reversal, commodity price bust and interest hike, historically, resulted in increasing incidences of sovereign defaults. However, it is surprising to see the trend seems to have tamed itself in the most recent decade.

Figure 3. Defaults amid Capital Inflow Reversal, Commodity Price Bust and Interest Rate Hike

Double bust episodes	Capital flow bust	Commodity price bust	Interest Rate Spike (real)	Default Spike?	
				Share of Countries in Default (in peak year)	New Defaults (percentage point increase during bust)
1824 - 1828	yes	yes	yes	43.75	40.52
1890 - 1894	yes	yes	<i>no</i>	18.60	9.30
1914 - 1918	yes	yes	yes	17.65	4.90
1929 - 1933	yes	yes	yes	46.43	39.16
1981 - 1986	yes	yes	yes	42.74	24.79
1991 - 1999	yes	yes	yes	46.34	decline in defaults
2011 - 2016	yes	yes	<i>no</i>	13.82	no change

Notes: Ex-post real interest rate is calculated using consumer prices.

Source: Reinhart et al. (2017)

The credits partly go to the governments of developing countries, which seem to have been more capable of preparing their public finances to handle the sudden stop and reversal of international inflows associated with the crash of commodity prices.

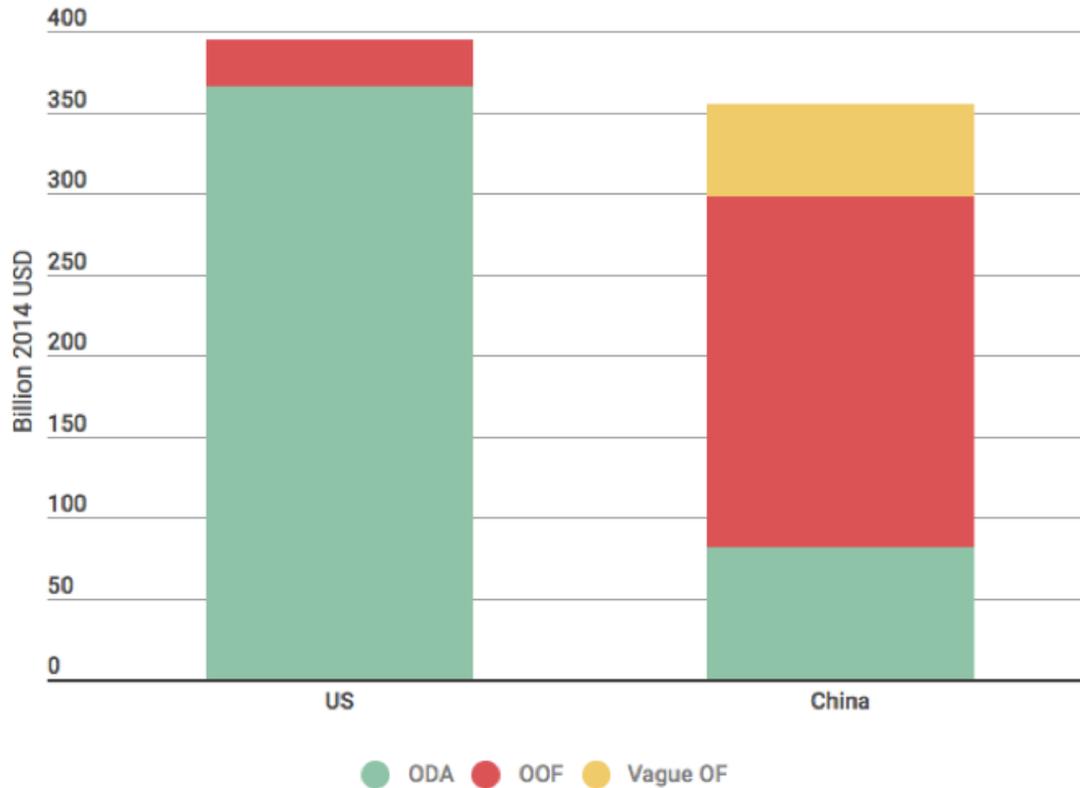
Overall, emerging and developing markets have shown improved capability in macroeconomic management in recent years. Frankel and Vegh (2013) provide evidence that fiscal policies, particularly the ones to counter procyclicality, in emerging and developing markets have come closer to best practices. McGettigan et al. (2015) make a similar claim about emerging and developing markets in terms of their monetary policies. Federico, Vegh, and Vuletin (2014) present evidence that emerging and developing markets have increasingly been using reserve requirements as a countercyclical tool, the same was suggested in Reinhart and Reinhart (1999).

II. Chinese Lending

Aside from improved macroeconomic management in emerging and developing markets, these missing defaults are partly the results of increasing Chinese lending globally, both in Chinas capacity as an official lender (e.g. Official Development Assistance) and by Chinese state-owned enterprises that directly finance projects in recipient countries (e.g. non-concessional loans). Between 2000 and 2014, Chinas official development finance program is similar in scale and scope to that of the United States Chinese lending amounts to more than \$350 billion, while the United States accounts for \$394.6 billion during the same period (Dreher et al. 2017).

This section provides quantitative evidence to evaluate our prior assumptions about Chinese lending. It validates some popular beliefs, for example, China’s development finance program is infrastructure-heavy and less concessional compared to that of traditional donors and lenders. It dispels some misperceptions, for instance, China’s development finance program in fact provides more ODA-qualified lending to Africa than it does to other continents, as opposed to the common perception that China’s official development finance in Africa has little concessional element. It also offers a more nuanced picture in distilling some widely held impressions. — Chinese lending comes in the form of loans more so than grants. — This is only half true: Measured by dollar value, Chinese lending consists of mostly loans; However, when measured by the number of projects, grants actually make up for over half of Chinese lending.

Figure 4. China vs. United States Official Lending



Source: AidData

A. *Patterns of Chinese Lending*

A.1. Overall Lending Pattern

Between 2000 and 2013, Chinese lending has seen rapid growth, in terms of both total project number and total value. The upward trend seems to have plateaued after 2009, possibly due to the Global Financial Crisis, which requires the Chinese government to devote more resources to support domestic economic growth.

In terms of regional dispersion over time, Africa and Asia remained popular destinations for China's official development finance throughout the 2000-2014 period.

The popular belief that Africa is the destination that received the largest amount of Chinese lending is confirmed. Between 2000 and 2014, Africa as a region received approximately \$118 billion, representing 33.7 percent of total Chinese lending in this period. The result is consistent with China's stated goals for its official development finance program: China prides itself as a reliable development partner in South-South Cooperation, which mainly

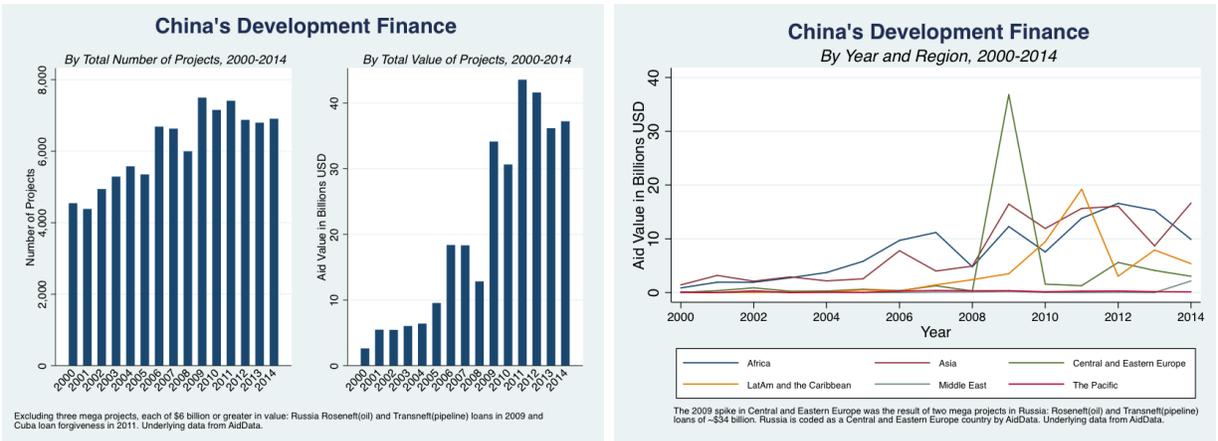


Figure 5. Chinese Lending Patterns. Author’s calculation based on AidData dataset.

benefits African countries (China Foreign Lending White Paper 2014).

Asia trails Africa as a region that received the second most Chinese lending. 33.2 percent of Chinese lending during the same period went to Asia, especially countries within China’s traditional sphere of influence, like Pakistan and Laos (see Appendix B). In 2014, for which the most recent lending data are available, Asia again became the most popular destination of China’s official development finance, surpassing Africa. It possibly reflects China’s strategic priority, the Belt and Road Initiative, in which Asia is a main focus.

Latin America (and the Caribbean) since 2007 has raced to the third most popular destination of Chinese lending. This is consistent with the conjecture that China is expanding its influence in Latin America.

A.2. Lending Pattern by Income Level

Chinese lending is going into developing countries, especially the least developed countries. This is consistent with Chinese governments own claim that its official development finance program operates within the framework of South-South Cooperation.

Meanwhile, many of these least developed countries are also classified as commodity dependent developing countries, which are especially vulnerable to debt overload. The fact that Chinese lending is not yet included in the Paris Club reporting calls for concern in the concerted effort to relieve the debt burden of these least developed countries.

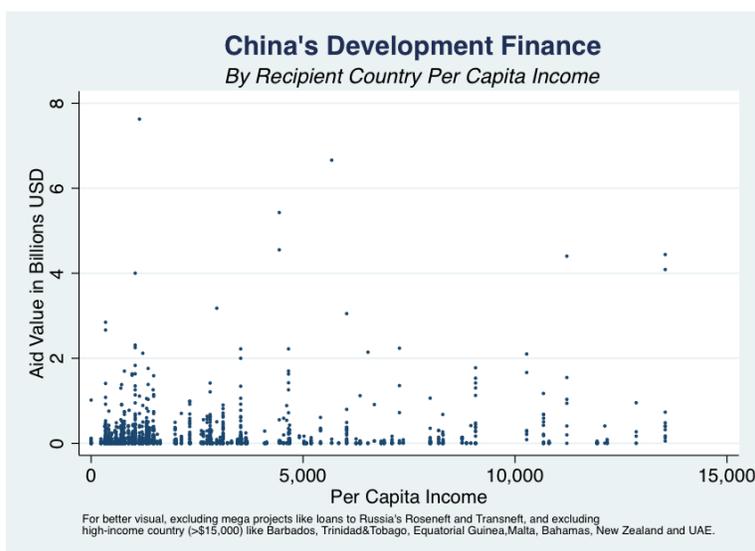
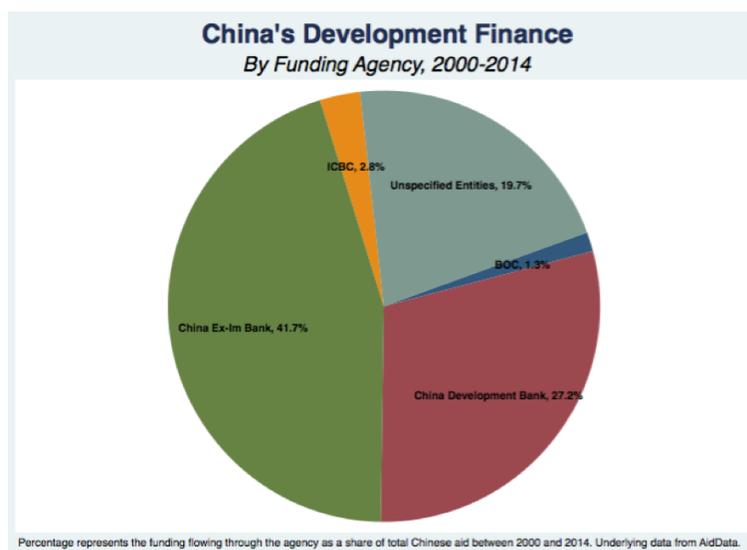


Figure 6. Lending Pattern by Income Level. Author's calculation based on AidData.

A.3. Lending Pattern by Funding Agency

China Export-Import Bank and China Development Bank are the biggest funding agencies dispersing Chinese lending to other developing countries. Collectively, these two policy banks account for almost 80 percent of Chinese lending between 2000-2014. It is worth noting that Chinas state-owned commercial banks (e.g. Industrial and Commercial Bank of China, Bank of China) are also active in the space of lending dispersion.

Figure 7. Lending Pattern by Funding Agency.



Author's calculation based on AidData.

A.4. Lending Pattern by Flow Class

OECD Development Assistance Committee (OECD-DAC) classifies official capital flows into Official Development Assistance (ODA) and Other Official Flows (OOF). ODA is the capital flow that meets the strict definition as follows:

- i. provided by **official** agencies, including state and local governments, or by their executive agencies; and
- ii. each transaction of which is administered with the promotion of the economic **development** and welfare of developing countries as its main objective; and
- iii. each transaction of which is **concessional** in character and conveys a grant element of at least **25 percent**.

During the same period, only 23 percent of Chinas development finance qualifies as ODA, in terms of dollar amount. This corresponds to a major criticism that much of Chinas official development finance comes in less or non-concessional terms, which could increase recipient countries' debt burden.

Meanwhile, in terms of the number of projects, 73 percent of Chinas development finance qualifies as ODA. One plausible explanation to reconcile the two facts is that the majority of Chinas official development projects might come in concessional terms, but the big-ticket projects are still mostly in non-concessional terms.

Flow Class	Total Value (Billions USD)	Flow Class	Total Number of Projects
ODA-like	\$ 79.63	ODA-like	3,146
OOF-like	\$ 216.28	OOF-like	809
Vague	\$ 54.71	Vague	355
Total	\$ 350.62	Total	4,310

Figure 8. Lending Pattern by Flow Class. Author's calculation based on AidData.

A.5. Lending Pattern by Flow Type

Between 2000 and 2014, 53.8 percent of China's development finance, in terms of number of projects, are in the form of grants. The fact that more than half of China's development projects are carried out in grant arrangement seems to suggest China is a responsible development partner that offers more grants than loans. Study suggests development finance is more helpful to promote economic growth in recipient countries when it is in the form of grants rather than cheap loans (The Economist Oct.2017).

However, in dollar amount, only 13 percent of China's development finance are grants, and 80 percent are in the form of loans, excluding debt rescheduling and forgiveness. Combined, all loan-related items account for 83.6 percent of Chinese development finance in value.

It challenges the favorable narrative in the previous paragraph (only considering number of projects) and confirms that China hands out many small-scale projects in concessional terms (grants), but such concessions stop for big-ticket projects, most of which are based on less or non-concessional terms (loans).

Flow Type	Total Value (Billions USD)	Flow Type	Total Number of Projects
Debt forgiveness	\$ 11.53	Debt forgiveness	75
Debt rescheduling	\$ 0.53	Debt rescheduling	16
Export credits	\$ 39.66	Export credits	127
Technical assistance	\$ 0.32	Technical assistance	516
Grant	\$ 12.64	Grant	2,330
Loans	\$ 281.17	Loans	1,000
Scholarships/training	\$ 0.03	Scholarships/training	144
Supplier credit	\$ 2.26	Supplier credit	11
Vague TBD	\$ 2.49	Vague TBD	91
Total	\$ 350.62	Total	4,310

Figure 9. Lending Pattern by Flow Type. Author’s calculation based on AidData.

A.6. The Darlings of Chinese Lending

I now turn to the issue of crowding out. Some believe that Chinese lending crowds out the Western kind, given China’s no-string-attached approach to lending.

Figure 10. China’s Lending Darlings

Aid Darlings	ODA+OOF+Vague (Billions USD)	Aid Darlings	ODA (Billions USD)
Russia	\$ 36.62	Cuba	\$ 6.68
Pakistan	\$ 24.32	Cote D'Ivoire	\$ 3.97
Angola	\$ 16.56	Ethiopia	\$ 3.66
Ethiopia	\$ 14.83	Zimbabwe	\$ 3.61
Sri Lanka	\$ 12.68	Cameroon	\$ 3.40
Laos	\$ 12.02	Nigeria	\$ 3.08
Venezuela	\$ 11.22	Tanzania	\$ 3.02
Turkmenistan	\$ 10.68	Cambodia	\$ 3.01
Sudan	\$ 10.24	Sri Lanka	\$ 2.79
Total	\$ 149.17	Total	\$ 33.22

Author’s calculation based on AidData.

In Figure 10, the panel on the left is a list of China’s ”lending darlings,” in terms of total Chinese lending between 2000 and 2014, with Russia at the top. This is hardly a surprise. Russia, under Western sanctions, increasingly turns east to China. China, meanwhile, has shown huge interest in Russian commodities like the natural gas and oil. These commercially

oriented transactions help explain why Russia shows up in the first list of China's "lending darlings" not the second (ODA only).

The panel on the right includes only ODA, lending that meets the strict definition by OECD-DAC. Cuba tops the list as the number one recipient. The fact that most of China's "lending darlings" on this list continue to receive large amount of lending from Western counterparts means the evidence for crowding out is weak (Dreher et al. 2017). This is good news. It dispels the myth that China's development finance crowds out that of the Western kind.

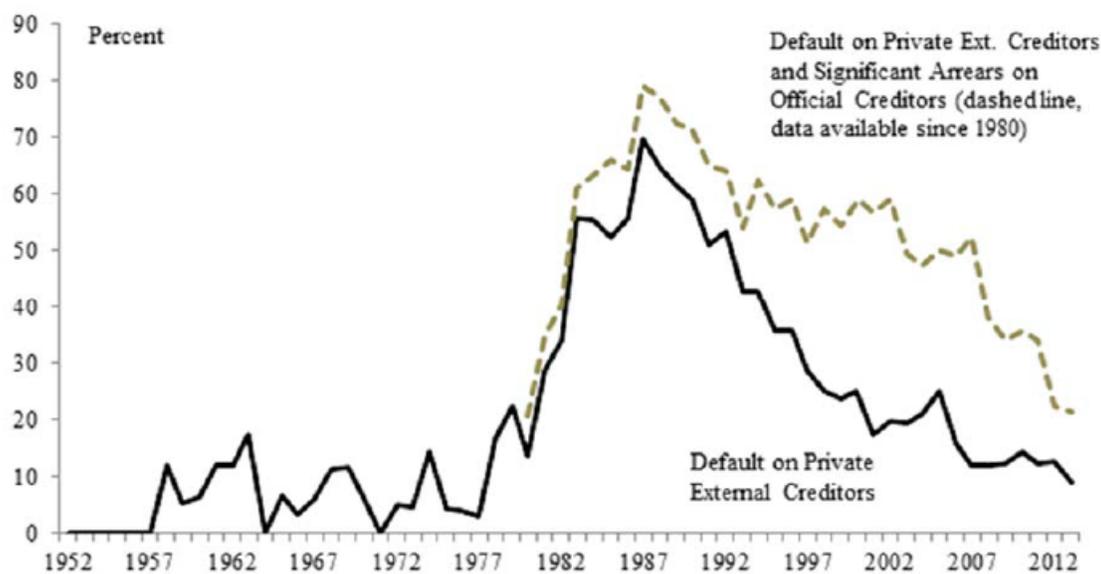
III. The Missing Defaults

Despite its broad, and in some cases concentrated, impact on other developing countries' debt profiles, China's growing portfolio of official lending remains out of the scope of the Paris Club, a group of industrialized economies that traditionally have been the creditors to many emerging and developing markets.

In the past the IMF relies exclusively on the processes and practices of the Paris Club when it is considering financial support to a country that is in arrears to its official creditors. In the most recent decade, however, in addition to the Paris Club members, non-members like China, Brazil, India, and Saudi Arabia, have become important players in official lending. Not until 2015 did the IMF amend its arrears policy to incorporate Chinese lending into IMF's financing decisions. This contrasts previous practice in which the IMF effectively ignored arrears to non-Paris Club members.

As China continues to operate outside the Paris Club, there is an increasing possibility that the tally of sovereign defaults underreports incidences especially in the most recent decade.

Figure 11. Incidences of Default Before vs. After Accounting for Official Creditors



Source: Reinhart and Trebesch (2016)

IV. The Venezuela Case

A case in point is Chinese lending to Venezuela. The recipient is believed to be in (partial) default long before its official declaration at the end of 2017. Venezuela was in arrears of Chinese loans, which had been kept off the books. And the Paris Club, a group of major creditor countries, does not currently report on Chinese lending.

Venezuela, on the verge of a default, desperately needs fresh financing. Recently, the country began publishing its oil price in Chinese yuan and announced plans to issue its own cryptocurrency, the Petro, backed by its oil reserves. On the surface, these efforts sound like financial innovations. In reality, these measures expose Chinese finance to a strong default risk.

China is an important financier for Venezuelas fragile economy. Between 2007 and 2016, Chinese lending and investment to Venezuela totaled \$62 billion, as estimated by Inter-American Dialogue, a Washington, DC-based think tank. Chinese lending and investment helped the Venezuelan government stay afloat. Yet cash-strapped Venezuela has struggled to repay its debt. Venezuelas largest state-owned oil company, PDVSA, is paying back Chinese loans in oil barrels.

Many critics use Venezuelas financial woes as a culminating example of Chinas failure to protect the recipient countrys public finances. Some even argue China is cornering Venezuela to take advantage of its vast oil reserves.

To be a premeditated move, however, China would have needed to predict persistently low oil prices, which have defied many analysts expectations. In reality, even China is getting impatient. In December 2017, Sinopec, Chinas largest state-owned oil company, took PDVSA to court in the United States. The \$23.7 million-plus punitive damages sought by the Chinese conglomerate is just the tip of the iceberg an insolvent Venezuela will be costly for China.

The Venezuela case demonstrates the reputational risk of lending to commodity-rich countries. The pro-cyclical tendency of fiscal spending in commodity-rich countries often leads to macroeconomic crises later. In the case of a debt default, China has a right to these commodities. However, this profitable business comes with a reputational risk given current low oil prices, oil shipments to China make China look the part of a villain, robbing a country at its weakest moment and propping up a rogue regime. Once again, Chinas non-interference approach came under close scrutiny.

V. Conclusion

Previously, both academics and practitioners relied on the inputs and reportings of the Paris Club to study the issue of sovereign defaults. It has been IMF's long-standing practice to use information relevant to the Paris Club members in making its own financing decisions.

However, the landscape of sovereign debt is changing, and the pace of change has accelerated in recent years due to the growing presence of developing country lenders like China. It poses new challenges in our understanding and the ability to predict a possible sovereign debt crisis in the future.

The business-as-usual approach no longer captures the undercurrents of a relatively calm period, compared to historical standards, as studied by Reinhart (2017). In addition to the benign reason of improved debt management capacity in many developing countries, Chinese lending becomes an important factor that previous studies did not (had no need to) account for.

However, this time is different. China, with its Belt and Road Initiative, is vastly changing the traditional composition of developing country debts.

Hence, the value of this paper is to make up for the gap in existing literature and shed light on Chinese lending, the understanding of which, hopefully, can help us avoid the mistake of "this time is different."

Appendix A. Recipient Country Map and Statistics



Figure 12. Map of Chinese Lending Recipients. Source: AidData

Recipient Country Regime Type	Recipient Count	Aid Total (in billions)
Autocratic	40	\$ 122.32
Democratic	80	\$ 222.98
Polity Unclassified	18	\$ 5.32
Total	138	\$ 350.62

Table I. Lending by Regime Type. Author's own calculation.

Recipient Country Income Level (\$)	Recipient Country Income Quartile	Recipient Count	Aid Total (in billions)
3,452 and above	Top Quartile	65	\$ 156.25
1,309 - 3,452	50-75th Percentile	30	\$ 84.57
708 - 1,308	25-50th Percentile	19	\$ 77.53
0 -707	Bottom Quartile	24	\$ 32.27
Total		138	\$ 350.62

Table II. Lending by Income Level. Author's own calculation.

Appendix B. Top Recipients by Continent

Top Recipients in Africa	Aid Total (in billions)	Top Recipients in Asia	Aid Total (in billions)	Top Recipients in LatAm	Aid Total (in billions)
Angola	\$ 16.56	Pakistan	\$ 24.32	Venezuela	\$ 11.22
Ethiopia	\$ 14.83	Sri Lanka	\$ 12.68	Ecuador	\$ 9.95
Sudan	\$ 10.24	Laos	\$ 12.02	Brazil	\$ 8.53
Nigeria	\$ 7.24	Turkmenistan	\$ 10.68	Cuba	\$ 6.78
Zimbabwe	\$ 6.09	Indonesia	\$ 9.34	Argentina	\$ 4.64
Kenya	\$ 5.70	Cambodia	\$ 8.71	Bahamas	\$ 2.88
Cameroon	\$ 5.48	Kazakhstan	\$ 8.27	Bolivia	\$ 2.75
Ghana	\$ 5.13	India	\$ 5.57	Jamaica	\$ 1.72
Cote D'Ivoire	\$ 4.43	Bangladesh	\$ 4.44	Chile	\$ 1.39
South Africa	\$ 4.40	Viet Nam	\$ 4.33	Costa Rica	\$ 1.00
Zambia	\$ 4.18	Uzbekistan	\$ 3.02	Mexico	\$ 0.42
Tanzania	\$ 3.60	Kyrgyz Republic	\$ 2.78	Suriname	\$ 0.40
Mozambique	\$ 2.87	Tajikistan	\$ 2.13	Guyana	\$ 0.40
Congo, Rep.	\$ 2.79	Myanmar	\$ 2.02	Peru	\$ 0.27
Mauritius	\$ 1.96	Philippines	\$ 1.48	Dominica	\$ 0.23
Equatorial	\$ 1.96	Mongolia	\$ 1.31	Trinidad &	\$ 0.20
Uganda	\$ 1.69	Malaysia	\$ 1.30	Antigua & Barbuda	\$ 0.15
Niger	\$ 1.53	Nepal	\$ 1.23	Colombia	\$ 0.11
Other Africa Countries	\$ 17.41	Other Asia Countries	\$ 0.86	Other LatAm Countries	\$ 0.34
Total in Africa	\$ 118.07	Total in Asia	\$ 116.49	Total in LatAm	\$ 53.39

Table III. Lending by Continent Author's own calculation.

References

- Asmus, Gerda, Andreas Fuchs, and Angelika Müller (2017). “BRICS and Foreign Aid”. In: Busse, Matthias, Ceren Erdogan, and Henning Mühlen (2016). “China’s impact on Africa—The role of trade, FDI and aid”. In: *Kyklos* 69.2, pp. 228–262.
- Dreher, Axel, Peter Nunnenkamp, and Rainer Thiele (2011). “Are newdonors different? Comparing the allocation of bilateral aid between nonDAC and DAC donor countries”. In: *World Development* 39.11, pp. 1950–1968.
- Dreher, Axel et al. (2017). “Aid, China, and Growth: Evidence from a New Global Development Finance Dataset”. In:
- Kitano, Naohiro and Yukinori Harada (2016). “Estimating China’s foreign aid 2001–2013”. In: *Journal of International Development* 28.7, pp. 1050–1074.
- Marshall, Monty G and Keith Jagers (2002). “Polity IV project: Political regime characteristics and transitions, 1800-2002”. In:
- Mawdsley, Emma, Laura Savage, and Sung-Mi Kim (2014). “A post-aid world’? Paradigm shift in foreign aid and development cooperation at the 2011 Busan High Level Forum”. In: *The Geographical Journal* 180.1, pp. 27–38.
- Reinhart, C, Vincent Reinhart, and Christoph Trebesch (2017). “Capital Flow Cycles: A Long, Global View”. In: *IMF Jacques Polak Annual Research Conference, November*, pp. 2–3.
- Reinhart, Carmen M, Vincent Reinhart, and Christoph Trebesch (2016). “Global cycles: Capital flows, commodities, and sovereign defaults, 1815-2015”. In: *American Economic Review* 106.5, pp. 574–80.
- Reinhart, Carmen M and Vincent R Reinhart (1999). “On the use of reserve requirements in dealing with capital flow problems”. In: *International Journal of Finance & Economics* 4.1, pp. 27–54.
- Reinhart, Carmen M and Kenneth S Rogoff (2010). “Growth in a Time of Debt”. In: *American Economic Review* 100.2, pp. 573–78.
- UNCTAD (2017). In: *The State of Commodity Dependence Report*.
- Wako, Hassen Abda (2018). “Aid, institutions and economic growth in sub-Saharan Africa: Heterogeneous donors and heterogeneous responses”. In: *Review of Development Economics* 22.1, pp. 23–44.