Measuring the Impact of Contemporary Foreign Chinese Medical Aid – Strategies for Sino-Western Collaboration in developing an inclusive society

45

Edward Ye (MPhil)
Primary Supervisor: Prof. David Bishai

Edward Ye[1]

[1]School of Public Health, LKS Faculty of Medicine, The University of Hong Kong

Background

This research figures out the influence of Chinese medical aid on developing countries and posit ways for China, and other foreign aid donors, especially the Developmental Assistance Committee (DAC) across the Organization for Economic Co-operation and Development (OECD) to collaborate in aid donation and developmental finance to improve health outcomes in aid recipient countries. Building collective impact requires a mix of bottom-up, and top-down governance mechanism, comprising of accountable, and inclusive institutions that encourage widespread community participation, and equal opportunities amongst citizens to protect their right to health, end hunger, and ensure sanitation in societies inside and outside of aid recipient countries[1]. However, geo-economic and political factors, including tensions across different world orders, including the US-dominated international liberal order, like countries within the OECD, and the Chinese-dominated world order, comprising of countries in the Belt and Road Initiative (BRI) results in strained world development and tense multipolarity[2]. Given this context and the limited global health and development literature on strategies for China-US collaboration, this research uses China's labor unrest events in each province as an instrument to proxy the amount of Chinese aid to measure its relations with improved health outcomes in developing countries worldwide[3, 4]. China's labor unrest movement can then demonstrate how, and where the Chinese government can allocate its domestic resources to mediate labor disputes[5]. Using the former results, I propose strategies for Western, and Chinese donors to collaborate to provide altruistic aid as assets to empower developing countries to improve their capabilities of comprehensive primary health care in developing nations.
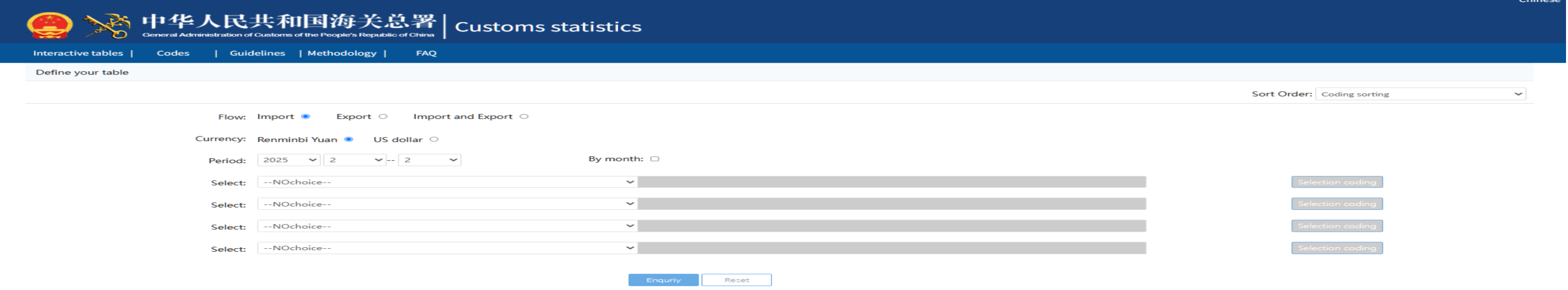
Objectives and Methods

This research examines the relationship between Chinese foreign aid and improved health outcomes, with Chinese labor events as an instrument that relates to Chinese foreign health aid dissemination from 2015 to 2023. Using this result, I figure out develop policy implications and strategies for Western donors, including the United States, and countries inside the OECD. Hence, my research uses the following equations to model the 2-stage least squares effect:

Stage 1. First Stage Regression
Chinese Foreign Health Aid$_{i,t}$=π_0+π_1Chinese Labor Events$_{i,t}$+π_2Conflict$_{i,t}$+$\varepsilon_{i,t}$

Stage 2. Second Stage Regression
Health Outcomes(U5MR)$_{i,t}$=β_0+β_1Chinese Foreign Health Aid$_{i,t}$+ β_2Conflict$_{i,t}$+$\varepsilon_{i,t}$

This article defines health aid as all health-related official development assistance (ODA) from donor countries. ODA are funds from aid donor institutions that consists of a grant element of at least 25% when using a 10% fixed discount rate and should aim to promote the development and welfare of aid recipient countries, where donor institutions can include, but not limited to multilateral institutions, or single-country institutions[6]. I classify health aid into 2 types – soft, and hard aid. Soft health aid are health-related ODA that does not involve any tangible assets when aid donor country assists developing countries. This includes capacity-training and building exercises to ensure that health workforces possess the requisite competencies to perform public health-related duties by practicing social accountability, and to advocate for public health decision-making, and policy designs. When aid donors support recipient countries by bolstering their public health workforce, this classifies as "soft aid". Whereas hard health aid are tangible health-related assets, including vaccines, and hospitals.
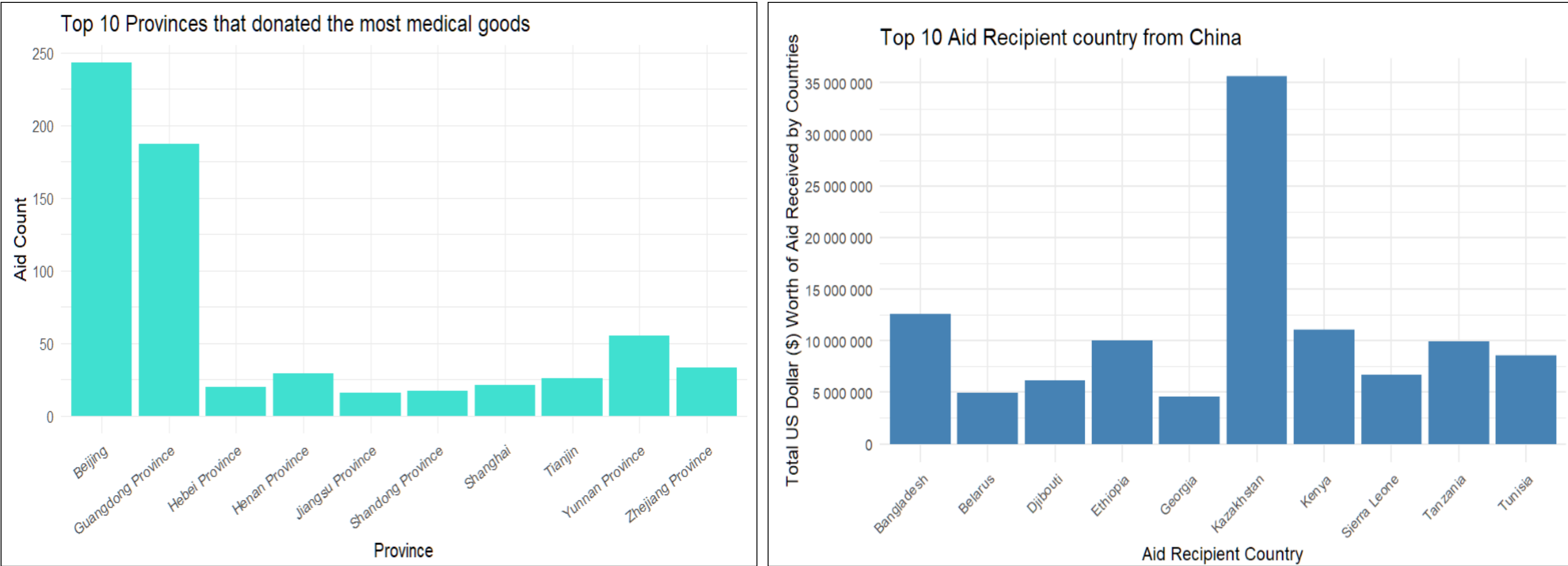
Datasets

This research uses two datasets to retrieve China's hard and soft medical aid from 2015 to 2023. The first uses the "Chinese Aid Exports Database" to examine the distribution of the country's donation to aid recipient countries. This dataset includes trade flow, exports and import trade flows by customs regime, partner country, and the donor origin is available, and can view exact medical products being exported through HS Codes[7]. I plan to use the second dataset that traces soft health aid is the "AidData 3.0 Global Infrastructure" dataset, capturing China's full range of loan commitments to developing countries. In terms of the control dataset – Gross Regional Product (GRP) at the provincial level, Instances of worker strikes and protests, and armed conflict in aid recipient country data are found in the China Statistical Yearbook, China Labor Bulletin, and the Uppsala Conflict Data Program (UCPD). These are leading governmental and civil data providers that sheds light on National Accounts, crowd-sourced data on civil unrests, and conflict data in aid recipient countries.

Tentative Results

The results of this poster is only tentative and a working progress.

Left: Top 10 provinces and locations in China that donated the most aid
Right: Top 10 countries that received the most aid from China

In terms of hard aid, my research demonstrates that higher-income municipalities and provinces in China, including Beijing and Guangdong Province, alongside border provinces, like Yunnan donated the most medical goods to foreign developing countries.

Medical Aid Efficacy – Provincial Level

Summary Statistics / Province or Municipality	Beijing	Yunnan	Shanghai
USD Spent on Exports	-432.1	41.44	26.83
The Reduction of Under-5 Mortality Rate (per 1,000 live births)	1.032×10^{-3}	1.614×10^{-4}	5.056×10^{-6}
95% Confidence Interval on USD Spent on Exports	[-9794.3, 8930.1]	[37.9, 49.0]	[1.074, 52.6]
95% Confidence Interval on reduced U5MR	[-0.018, 0.025]	$[9.72 \times 10^{-5}, 2.25 \times 10^{-4}]$	$[-1.33 \times 10^{-4}, 1.43 \times 10^{-4}]$

Conclusion

The results demonstrates that there is significant variability between the effect of USD Spent on Exports in respect to foreign aid and the under-5 mortality rate, while using labor unrest as an instrument to proxy Chinese health aid. This demonstrates that the United States can collaborate with China's production in medical and health aid if there are overproduction. Further directions to this study includes, but not limited to disaggregating aid recipient countries into their Gross Domestic Product (GDP) rank, aid recipient countries' composition of industries, and the United Nations General Assembly (UNGA) voting patterns to measure the effects of Chinese aid on improving health outcomes.

References

1. Schleiff M, Bishai D. 5. Continuity between Comprehensive Primary Health Care and Sustainable Development Goals. In: Achieving Health for All: Primary Health Care in Action [Internet]. Johns Hopkins University Press; 2020 [cited 2025 Apr 1]. p. 102–26. Available from: https://muse.jhu.edu/pub/1/oa_edited_volume/chapter/2715633
2. Johnston AI. China in a World of Orders: Rethinking Compliance and Challenge in Beijing's International Relations. International Security. 2019 Oct 1;44(2):9–60.
3. Mueller J. The Domestic Political Economy of China's Foreign Aid.:1–83
4. Dolan CB, Malik AA, Zhang S, Mao W, McDade KK, Svoboda E, et al. Chinese health funding in Africa: The untold story. PLOS Global Public Health. 2023 Jun 28;3(6):e0001637.
5. Beraja M, Kao A, Yang DY, Yuchtman N. AI-tocracy. Quarterly Journal of Economics. 2023 Aug 1;138(3):1349–402.
6. AidData | TUFF Glossary [Internet]. [cited 2025 Apr 1]. Available from: https://www.aiddata.org/pages/tuff-glossary
7. Fuchs A, Kaplan LC, Kis-Katos K, Leue S, Turbanisch F, Wang F. Tracking Chinese Aid through China Customs: Darlings and Orphans after the COVID-19 Outbreak [Internet]. Rochester, NY: Social Science Research Network; 2022 [cited 2025 Apr 1]. Available from: https://papers.ssrn.com/abstract=4216494

Acknowledgements