

# China's Global Finance Footprint 2005–2014: Comparing AidData and CGIT

This is the Published version of the following publication

Ahmed, Salma, Rasmussen, Bruce and Sheehan, Peter (2022) China's Global Finance Footprint 2005–2014: Comparing AidData and CGIT. The Australian Economic Review. pp. 1-12. ISSN 0004-9018 (In Press)

The publisher's official version can be found at https://onlinelibrary.wiley.com/doi/full/10.1111/1467-8462.12469 Note that access to this version may require subscription.

Downloaded from VU Research Repository https://vuir.vu.edu.au/43461/



The Australian Economic Review, vol. 00, no. 00, pp. 1-12



## Data Article

# China's Global Finance Footprint 2005–2014: Comparing AidData and CGIT

Salma Ahmed\* , Bruce Rasmussen b and Peter Sheehan

#### Abstract

The growth of Chinese global official finance has stimulated great interest among foreign aid advocates. Yet, until now, a lack of systematic data reporting has limited our understanding of Chinese official finance. Against this background, this article describes and compares two internationally comparable Chinese datasets from 2005 to 2014: AidData and the China Global Investment Tracker (CGIT). This study summarises China's priority areas of investment and the actual volume of Chinese finance, including a breakdown of these estimates by region and sector. Despite significant disparities between the two databases, this study shows that Chinese investment preferences in terms of locality and priority sectors are broadly consistent with the existing pattern.

## JEL CLASSIFICATION F35

\* Victoria Institute of Strategic Economic Studies (VISES), Institute for Sustainable Industries and Living Cities (ISILC), Room# 1328, Level 13, 300 Flinders St, Victoria 3000, Australia. Corresponding author: Ahmed, email <salma.ahmed@vu.edu.au>.

We thank the editor Professor John P. De New for his helpful comments on the earlier version of the paper.

#### 1. Overview

Since the 1950s, the Chinese Government has provided financial assistance to 160 countries and over 30 international organisations (State Council 2011). Moreover, its engagement has expanded beyond Asia into Europe, Africa, Latin America and the Caribbean countries. Yet, little is known about the scale, scope and priority of China's global finance programs. This stems largely from the fact that China uses different types of financial instruments, which have been challenging to track. For example, China's foreign aid mainly falls into three categories: grants (at least 25 per cent or higher grant elements); interest-free loans; and concessional (fixed rate, low interest) loans (State Council 2011), 1 Nonetheless, in practice, China also offers loans (excluding debt rescheduling), technical assistance, scholarships, export credits, supplier credits, debt forgiveness and debt rescheduling (Ahmed, Sheehan and Rasmussen 2021a). In addition, China's global finance is based on its unique history, comparative strength and policies driven by several government agencies.

China is investing US\$1 billion (Malik 2013) and more annually on assistance to fellow developing countries. The China-led Belt and Road initiative (BRI), announced in 2013, provides additional finance sources in Asia and Africa. 2 Foreign aid proponents emphasise that Chinese finance has been exaggerated in its size and potential globally. However, these claims have rarely been verified due to the lack of internationally comparable data on Chinese foreign assistance. To address this critical

© 2022 The Authors. *The Australian Economic Review* published by John Wiley & Sons Australia, Ltd on behalf of The University of Melbourne, Melbourne Institute: Applied Economic & Social Research, Faculty of Business and Economics. This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

information gap, various organisations volunteer to collect comprehensive data on financial flows between China and the developing world in particular, given its unique position in Global South countries (the so-called 'South-South Cooperation'). Not surprisingly, data quality is mixed and often incomplete. The Chinese Government is essentially the only source of information, without other sources of independent verification. Against this backdrop, we aim to offer a range of new descriptive insights about China's official finance allocation, primarily to developing countries over time and by region and sector, using two recently developed cross-country panel datasets to validate the existing pattern of Chinese global finance. The evidence provided will also display the utility of these databases for foreign aid scholars, particularly their unprecedented scope to offer new avenues for empirical studies.

#### 2. Data and Methods

#### 2.1 Data Sources

The first dataset that we use, called AidData, is the most comprehensive database on Chinese Government financing to date. AidData3 is a project between the College of William and Mary, Brigham Young University, and the nonprofit organisation Development Gateway. It tracks annual financial commitments in the form of grants, concessional loans with low interest, long grace periods or extended repayment terms and non-concessional loans (provided by central, state, and local government institutions) between 2000 and 2014 (Dreher et al. 2021). This dataset primarily defines foreign assistance in terms of 'Official Development Assistance (ODA)-like', 'Other Official Finance (OOF) Flow-like' and 'Vague Official Finance (VOF) Flow-like' from China to developing nations and territories in five regions of the world: Africa (AF), the Middle East (MEA), Asia and the Pacific (PAC), Latin America and the Caribbean (LAC), and Central and Eastern Europe (CEE). ODA-like flows are comparable to ODA criteria (for example, grants and loans at concessional financial terms with the promotion of economic development and welfare as

the primary objective) established by the Organisation for Economic Cooperation and Development (OECD) Development Assistance Committee (DAC). VOF includes projects that are either ODA-like or OOF-like but for which there is insufficient information to distinguish between the two categories (Dreher et al. 2017). OOF-like, including VOF-like flows, fall under the OECD's other official flows. In addition to providing aggregate statistics, AidData reports Chinese development finance by sector, project status and a multitude of other variables. AidData was constructed with the Tracking Underreported Financial Flows (TUFF) methodology developed by Strange et al. (2017). Ahmed, Shaheen and Rasmussen (2021b) explore the nature, scope and goals of China's development finance using AidData from 2000 to 2014.

The second dataset that we utilise, called the China Global Investment Tracker (CGIT), 4 was developed by the American Enterprise Institute and Heritage Foundation (2021). The CGIT records China's investment and construction transactions to developed and developing nations from 2005 through 2020. Chinese investment finance is gross outlays and does not include trade, loans, and bond purchases. This dataset covers six regions of the world: Africa (AF), the Middle East (MEA), Asia and the Pacific (PAC), North America (NA), Latin America and the Caribbean (LAC), and Europe. Tables and a figure in the online appendix provide more details about Chinese investment and construction finance from 2005 to 2020. Table 1 shows comparisons of the two datasets in some important dimensions. As mentioned before, information on China's financial commitments in AidData is constrained to the years 2000 to 2014, while information on Chinese investment and construction outlays in CGIT is available from 2005 to 2020. All dollar amounts, where available, are reported in constant US\$2014.

In AidData, the total volume of Chinese financing (combining ODA with OOF and VOF) is roughly US\$354 billion, and the corresponding figure in CGIT is US\$1,558

<sup>© 2022</sup> The Authors. *The Australian Economic Review* published by John Wiley & Sons Australia, Ltd on behalf of The University of Melbourne, Melbourne Institute: Applied Economic & Social Research, Faculty of Business and Economics.

	<i>AidData<sup>a</sup></i>	CGIT <sup>b</sup>
Total commitments/outlass (US	354.30	1,558.4
Total commitments/outlays (US \$ billion)	554.50	1,338.4
Number of countries/territories	140.00	153.0
Number of projects	4,373.00	3,500.0
Mean per year (US\$ billion)	23.62	97.4
Mean per country/territories (US\$ million)	2,500.00	10,200.0

Table 1 Data Comparison: AidData Versus CGIT, in2014 US\$ Billions

<sup>a</sup>Total finance includes grants, concessional and non-concessional loans.

<sup>b</sup>Total finance corresponds to Chinese investment and construction outlays but does not include loans.

*Source*: Authors' estimates from Dreher et al. (2021) and American Enterprise Institute and Heritage Foundation (2021).

billion when investment and construction finance are taken together. The CGIT includes more countries than AidData. However, territories were not covered in CGIT. A larger number of projects are listed in AidData than CGIT; however, Chinese projects are larger in scope in CGIT. AidData includes 4,373 committed projects that entered implementation or reached completion between 2000 and 2014.5 In contrast, CGIT includes 3,500 projects, of which over 1,700 investment and nearly 1,800 construction projects were financed mostly by Chinese companies and often jointly with foreign investors (American Enterprise Institute and Heritage Foundation 2021). CGIT also includes over 300 troubled transactions when investment or construction fails after a commercial agreement is finalised. Accordingly, CGIT records that China spends nearly four times as much per recipient.

Despite these differences, including the differences in methods employed in collecting the data, we compare and synchronise AidData with the CGIT data between 2005 and 2014. In doing so, we focus on China's official financial flows in contrast to Chinese investment and construction outlays. The justification for our approach is based on three features: first, of the recommended projects in AidData that had assigned financial values, around 45 per cent is related to infrastructure finance. The

infrastructure lending is mostly OOF-like loans, and they are always larger than other flows in AidData (Ahmed, Sheehan and Rasmussen 2021a). Second, the two datasets have significant overlaps in coverage over time and by region, mostly the developing countries, and sector. Third, the CGIT uses corporate sources, sometimes partner companies but typically Chinese participants, such as state-owned enterprises, stateowned commercial banks (for example, Bank of China) and policy banks (for Development Bank). example. China AidData also tracks financial flows from many of the same agencies. Nonetheless, an enduring issue is that AidData includes hybrid forms of financing while CGIT lacks information on credit instruments, such as loans or features of foreign direct investment. Besides, AidData may under- or overestimate the true value of foreign aid projects due to its media-based methodology (Grépin et al. 2014). Despite particular differences between the two datasets, our overreaching argument is that AidData and CGIT track the financial flows of similar agencies of the Chinese Government; therefore, we can accommodate its foreign policy goals to a large extent.

#### 2.2 Statistical Analysis

Focusing on general descriptive features, we explore the scale and scope of Chinese finance from 2005 through 2014 by different dimensions. In particular, we examine the financial flows to recipient countries over time and by region and sector. In doing so,

(a) we exclude territories and remove projects that lack financial information when using AidData, dropping 36 countries (primarily developed nations from Europe and North America) when using the CGIT so that we can compare recipient countries on the AidData list; our final sample includes 2,111 projects in 139 countries in AidData, while 1,201 projects in 117 countries in CGIT.

- (b) we deflate total financing amounts from 2005 to 2014 to US\$2,014 based on the AidData methodology (Strange et al. 2017).
- (c) we further subdivide the world region into Central and North Asia (CNA), South Asia (SA) and Southeast Asia (SEA) to attain comparability with regions indicated for AidData.

#### 3. Results

#### 3.1 Global Trend

China has extended its official finance globally, and it has grown over time. Table 2 shows the time trend of Chinese finance. AidData shows that the Chinese government committed around US\$324 billion in finance between 2005 and 2014. The financial flows fluctuated noticeably over the study period, reaching the highest level of US\$69 billion in 2009. The dramatic spike in China's official finance allocation in 2009 reflects its strategic response to the global financial crisis. In the aftermath of the crisis in 2008, slower growth in China led to an

Table 2 Two Views	of Chinese Finance by Year, in
2014 US\$	Billions, 2005–2014

Year	AidData <sup>a</sup> (US\$ billion)	CGIT <sup>b</sup> (US\$ billion)
2005	9.54	30.90
2006	18.38	72.63
2007	18.33	58.93
2008	12.84	92.50
2009	69.61	88.21
2010	30.66	112.81
2011	50.23	102.29
2012	41.62	94.54
2013	36.18	106.29
2014	37.24	115.76
Total	324.63	874.85

<sup>a</sup>Total finance includes grants, concessional and nonconcessional loans.

<sup>b</sup>Total finance corresponds to Chinese investment and construction outlays but does not include loans.

*Source*: Authors' estimates from Dreher et al. (2021) and American Enterprise Institute and Heritage Foundation (2021).

increase in aid and loan contributions to sustain its domestic economic growth and stability. Similar to AidData, the CGIT's results show no clear pattern. 6 It suggests that the Chinese Government has spent around US\$875 billion in investment and construction projects over the same period. The average investment finance is always larger than average construction finance; however, the Chinese construction transaction has been rising since 2005 (Scissors 2021). The CGIT data shows a sharp decline in Chinese finance globally between 2011 and 2012 before recovering, reaching its highest level of US\$116 billion in 2014. Such a slump could be attributable to the underestimation of Chinese activities. Scissors (2021), for example, underlines that developed nations that are dropped from our sample draw the bulk of Chinese investments, while China has far more construction finance than investment in developing countries where Chinese activities might not be well documented. Besides, the Chinese Government does not offer much documentation on construction finance in developing nations in the 2000s. Further, new projects may trickle in slowly that overwhelmingly undercount financial flows.

Table 3 shows Chinese official finance by regions, aggregating flows from 2005 to 2014: Africa, Asia, the Pacific, Latin America and the Caribbean, the Middle East, and Central and Eastern Europe. According to AidData, 33 per cent of Chinese official finance flows to Africa, more than elsewhere over the study period, which is intended to solve African infrastructure bottlenecks and provide access to Chinese export markets (Dreher et al. 2018, 2021; Poplak 2016).

Critics argue, however, that the African continent interests China due to its mineral wealth. Chinese companies are engaged in extracting natural resources to export to China and sell to international markets. Studies also indicate that China's relation to Africa has passed through three distinct phases. The most recent stage is dominated by Chinese small- and medium-sized enterprises moving to Africa and elsewhere (Kaplinsky 2010). Despite this, China's assistance to African countries has been

	$CGIT^{b}$				
Region	(US\$ billion)	%	Region	(US\$ billion)	%
Africa	106.91	33	Africa	253.90	29
Central and Eastern Europe	54.92	17	Latin America and the Caribbean	123.62	14
Latin America and the Caribbean	53.10	16	Southeast Asia	122.50	14
South Asia	44.11	14	The Pacific	99.02	11
Southeast Asia	32.97	10	Middle East	74.15	8
Central and North Asia	27.58	8	South Asia	70.48	8
Middle East	2.67	1	Central and Eastern Europe	69.08	8
The Pacific	2.37	1	Central and North Asia	62.11	7
Total	324.63		Total	874.85	

Table 3 Chinese Finance by Region, in 2014 US\$ Billions, 2005–2014

<sup>a</sup>Total finance includes grants, concessional and non-concessional loans.

<sup>b</sup>Total finance corresponds to Chinese investment and construction outlays but does not include loans.

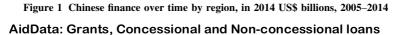
Source: Authors' estimates from Dreher et al. (2021) and American Enterprise Institute and Heritage Foundation (2021).

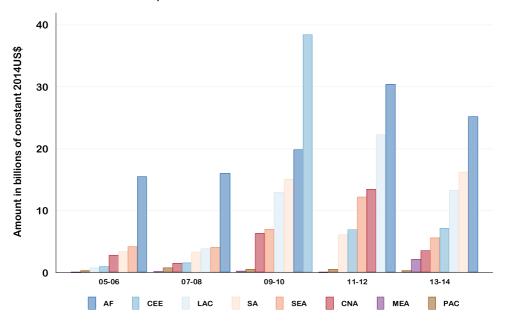
dominated by ODA-like finance (Brautigam Ahmed. 2011: Kiala 2010). Indeed. Sheehan and Rasmussen (2021b) show that African nations received 58 per cent of ODA-like projects financed by China between 2000 and 2014. Central and Eastern Europe came in second in terms of the volume of finance, followed by Latin America and the Caribbean and South Asia. Russia primarily drives Chinese cooperation with Central and Eastern Europe through OOF-like finance in the energy sector (Ahmed, Sheehan and Rasmussen 2021b). In Latin America, much of Chinese investment is focused on natural-resource projects, especially in Brazil, Cuba. Ecuador and Venezuela. Chinese investment in South Asia has been unique in focusing on infrastructure development. There have been two significant initiatives in South Asia: an economic development package signed in 2006 that includes building a seaport, oil refineries and agricultural advancement; and an agreement signed in 2010 for constructing two hydropower projects. The Middle East and the Pacific received relatively few funds over the study period. Most large projects in this region aligned with China's global resource strategy to search and explore for oil and gas. Most of the other forms of assistance have gone to debt forgiveness or cancellation, especially for Iraq.

The CGIT data suggests that Africa is the top region in combined Chinese investment construction finance. and while Latin America, the Caribbean and Southeast Asia secure the second and third places. Africa exceeds US\$200 billion in total finance, while in both Latin America and the Caribbean and Southeast Asia, each continent exceeds US \$100 billion. The African region is especially important in terms of Chinese loan-financed construction. Chinese construction is mainly concentrated in Algeria, Ethiopia, Angola and Nigeria (Scissors 2021). Brazil leads recipient countries within Latin America and the Caribbean continent. Both Indonesia and Malaysia primarily drive Chinese cooperation with Southeast Asia. While both countries attract more Chinese construction finance. Indonesia is vital for construction due to its interaction with other BRI countries in the region (Scissors 2021). Nonetheless, Chinese investment and construction finance in the other regions are very low, varying between 7 per cent and 11 per cent of the total financing over 2005-2014.

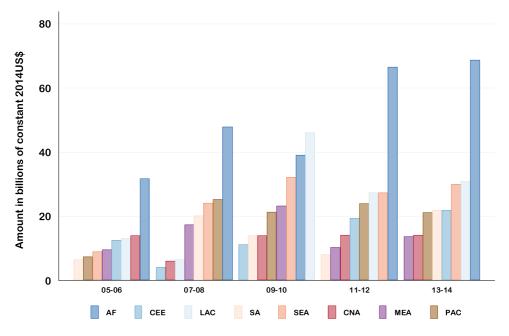
Figure 1 shows China's official flows over time by region. Africa is the top region over time. China's official finance in Africa was US \$15 billion in 2005–2006, and it has increased to US\$31 billion in 2011–2012 before falling in 2013–2014. While China is not a primary foreign assistance provider in Latin America and the Caribbean, Beijing has strengthened

<sup>© 2022</sup> The Authors. *The Australian Economic Review* published by John Wiley & Sons Australia, Ltd on behalf of The University of Melbourne, Melbourne Institute: Applied Economic & Social Research, Faculty of Business and Economics.





**CGIT: Investment and Construction Finance** 



*Notes*: AF- Africa; CEE- Central and Eastern Europe; LAC- Latin America and the Caribbean; SA- South Asia; SEA-South East Asia; CNA- Central and North Asia; MEA- Middle East; and PAC- the Pacific. *Source*: Authors' estimates from Dreher et al. (2021) and American Enterprise Institute and Heritage Foundation (2021).

economic engagement with the region since 2003. China's growing interest in this region appears to be primarily linked to its desire to establish diplomatic ties with the territory. Other goals include gaining access to markets and opportunities for Chinese goods and investment. On the other end, the cooperation between China and Central and Eastern European countries took a new turn in 2009-2010. As part of this cooperation, around US\$19 billion of Chinese loans was granted to Central and Eastern European countries over the same period (Ahmed, Sheehan and Rasmussen 2021b). However, this situation changed over the 2011-2014 period when both sides met a series of obstacles, especially a discrepancy between official declarations and reality. Against this backdrop, China has significantly increased its contributions to Africa. Latin America and the Caribbean, and South Asia over the same period.

The lower panel of Figure 1 shows the consistent pattern when Chinese investment and construction finance are taken together. The predominance (with a few exceptions) of the African region persists over time, though Chinese construction is far more pervasive in Africa than investment (Scissors 2021). Latin America and the Caribbean countries dominate in drawing Chinese investment and construction finance during 2009-2010; there is no noticeable trend elsewhere. Latin America and the Caribbean and Southeast Asia have become more enamoured of Chinese finance in most recent years. The BRI-led construction projects attract most Chinese finance in this region.

Table 4 shows the top 20 recipients of total Chinese official finance, as a whole, aggregating flows from 2005 to 2014. We list the highest-ranked country in each region regarding the total amount of Chinese official finance allocated to that country. The first half of Table 4 shows AidData figures. The most important Chinese official finance recipient in AidData is Russia (US\$37 billion), followed by Pakistan (US\$21billion) and Angola (US \$16 billion). Western sanctions and eagerness in improving weak infrastructure forced Russia to look toward China for investment opportunities (Hillman 2020). In the new millennium, post-conflict Angola sought financial assistance from the donor community for reconstruction. However, failure to comply with the International Monetary Fund's poverty reduction strategies paved the way for China's entry as a donor. Moreover, both Russia and Angola are oil-rich countries that address China's chronic need for petroleum. 7 Pakistan shares a border with China and is an important economic partner that provides geographic access to more BRI countries in the Middle East and Asia.

The second half of Table 4 shows CGIT figures of the top-twenty Chinese investment and construction finance recipients over the same period. Again, the composition of the top 20 recipients looks quite similar to AidData. Russia, Pakistan, Angola all appear in the top 20 recipients between 2005 and 2014. Although Russia is in the top five and Pakistan is in the top ten, each still receives significant loans from China.

Australia (US\$93 billion) is the first in the list of CGIT, followed by Brazil (US\$41 billion) and Russia (US\$35 billion). Australia typically leads Chinese investment after dropping rich countries from Europe and North America in particular (Scissors 2021). Chinese investment in Australia is dominated by three sectors: industry (for example, real estate), mining, and construction, energy and transport. Brazil leads Latin American and the Caribbean countries in terms of Chinese investment activities. Russia is typically the other top investment recipient in Central and Eastern Europe (Scissors 2021). In both Russia and Brazil, Chinese investment is highly concentrated in natural resources, where Chinese and recipients' interests mostly overlap. Others, such as Algeria and Pakistan, are more notable exceptions among the top ten recipients, as they are primarily recipients of Chinese construction finance.

#### 3.2 Sectoral Distribution

Figure 2 shows the sectoral distribution of Chinese finance in terms of financial values

Country	Region	AidData <sup>a</sup> (US\$ billion)	Country	Region	CGIT <sup>b</sup> (US\$ billion)
Russia	Central and Eastern Europe	36.61	Australia	The Pacific	92.72
Pakistan	South Asia	21.31	Brazil	Latin America and the Caribbean	41.14
Angola	Africa	16.09	Russia	Central and Eastern Europe	35.37
Ethiopia	Africa	14.48	Kazakhstan	Central and North Asia	34.49
Sri Lanka	South Asia	12.45	Algeria	Africa	26.85
Laos	Southeast Asia	11.61	Indonesia	Southeast Asia	26.68
Venezuela	Latin America and the Caribbean	11.22	Pakistan	South Asia	25.14
Turkmenistan	Central and North Asia	10.58	India	South Asia	23.38
Ecuador	Latin America and the Caribbean	9.95	Iran	Middle East	22.16
Brazil	Latin America and the Caribbean	8.53	Ethiopia	Africa	21.79
Cambodia	Southeast Asia	8.03	Angola	Africa	21.16
Kazakhstan	Central and North Asia	7.88	Nigeria	Africa	21.15
Indonesia	Southeast Asia	7.71	Peru	Latin America and the Caribbean	21.07
Belarus	Central and Eastern Europe	7.64	Malaysia	Southeast Asia	20.93
Sudan	Africa	7.02	Iraq	Middle East	20.68
Cuba	Latin America and the Caribbean	6.78	Vietnam	Southeast Asia	20.47
Nigeria	Africa	6.29	Venezuela	Latin America and the Caribbean	17.72
India	South Asia	5.57	Singapore	Southeast Asia	17.00
Cameroon	Africa	5.41	Argentina	Latin America and the Caribbean	14.36
Kenya	Africa	5.36	South Africa	Africa	14.02

Table 4 Top 20 Recipients of Chinese Finance, in 2014 US\$ Billions, 2005–2014

<sup>a</sup>Total finance includes grants, concessional and non-concessional loans.

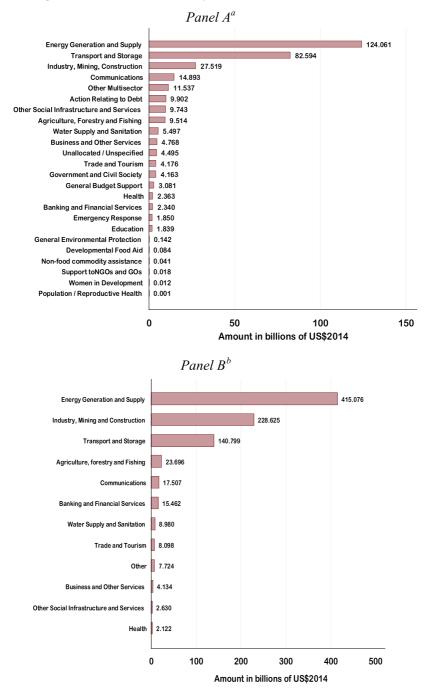
<sup>b</sup>Total finance corresponds to Chinese investment and construction outlays but does not include loans.

Source: Authors' estimates from Dreher et al. (2021) and American Enterprise Institute and Heritage Foundation (2021).

during 2005-2014. The AidData covers 24 different sectors, while the CGIT covers only 13 sectors (American Enterprise Institute and Heritage Foundation 2021). To achieve comparability with sectors indicated for AidData, we re-assign sectors listed in the CGIT into 12 broad groups. Panel A of Figure 2 shows AidData figures by sector, while Panel B shows CGIT results. From 2005 through 2014, AidData and the CGIT matched fairly well in the sectoral distribution of Chinese finance. AidData results show that energy (US \$124 billion), transportation (US\$83 billion), and industry, mining and construction (US\$28 billion), in order, lead Chinese official finance during 2005-2014. This is also highlighted by

Hwang, Bräutigam and Eom (2016) and the 2014 White Paper (State Council 2014). China is committed to providing finance for building infrastructure in the transport and energy sectors. At the bottom of the list, very few projects are identified in AidData under sectors like 'Support to NGOs and GOs' and 'Women in Development' and 'Population /Reproductive Health' during 2005–2014.

While we lack sufficient information on the number of projects, the CGIT figures show that energy (US\$415 billion) continues to be the leading sector over the same period when both investment and construction are taken together (Panel B). China mainly spends on oil, coals and hydroelectric plant Figure 2 Chinese Official Finance by Sector, in 2014 US\$ Billions, 2005–2014



*Notes:* <sup>a</sup>Panel A: Total finance includes grants, concessional and non-concessional loans. <sup>b</sup>Panel B: Total finance corresponds to Chinese investment and construction outlays but does not include loans. In the other sector (investment and construction), the lead investment sector is consumer goods, and the lead construction sector is utilities (Scissors 2021). *Source:* Authors' estimates from Dreher et al. (2021) and American Enterprise Institute and Heritage Foundation (2021).

projects (see Table SA.5). Energy investment is mostly focused toward commodities, featuring spending on metals and agriculture. With US\$229 billion, industry, mining and construction is as vital as energy generation and supply. The industry, mining, and construction sector leads China's spending on construction. China builds mostly affordable housing and large commercial properties. Other construction is of little importance. Transportation (US\$ 141 billion) is the third ranked, featuring China's expenditure on the construction of roads and rail. Transport investment mainly features automobile manufacturing plants. Projects are also carried out in the agriculture, forestry and fishing sectors (US\$24 billion). The communications sector (US\$18 billion) is primarily confined to telecommunications (mainly equipment supply) during 2005-2014. Consumer services mostly dominate the other sector (US\$8 billion), while social infrastructure and services (US\$3 billion) is limited to the entertainment sector.

#### 4. Conclusions

In recent decades, the scale and scope of China's official finance in the developing world have drawn the academic community and policymakers' attention. However, a lack of systematic data has previously created misconceptions about the actual volumes of China's finance relating to geographical coverage and sectoral distribution. To alleviate these concerns, this article describes and compares the AidData and CGIT datasets from 2005 to 2014. Both datasets track financial flows from many of the same Chinese agencies, and there have been overlaps in coverage over time and by region and sector. Similar to CGIT, AidData includes loans that intend to support construction finance in developing countries. Similar elements of these two datasets allow us to draw conclusions consistent with the prevailing pattern of Chinese finance in practice. In general, the study reveals an increasing trend in the volume of Chinese finance with some fluctuations from year to year. Africa is the top region throughout

the study period, and Russia and Pakistan appear in the top ten recipients, if counted in total value. In terms of the activity sector, transport, energy and industry are the priority sectors in terms of channelling funding. Both transport and energy sectors lead China's spending on construction, emphasising that infrastructure-related broad sectors grabbed more attention from Chinese agencies.

To summarise, despite some distinct differences between AidData and CGIT, the evidence provided demonstrates the advantage of these two databases for in-depth research. In particular, they allow researchers to explore country bias or regional and sectoral variations in Chinese finance, and thereby facilitate significant contributions to the emerging debate about the role of Chinese finance in the developing world in particular.

#### Acknowledgement

Open access publishing facilitated by Victoria University, as part of the Wiley - Victoria University agreement via the Council of Australian University Librarians.

#### Endnotes

1. In line with other papers, total official finance can be treated as a proxy for Chinese foreign aid or development assistance (Bräutigam 2011; Dreher et al. 2019).

2. The BRI initiative is conceptualised through the creation of two modern-day 'Silk Roads': the landbased Silk Road Economic Belt and the sea-based 21stcentury Maritime Silk Road that will stretch across Asia towards Europe.

3. See https://www.aiddata.org/data/chinese-global-official-finance-dataset-version-1-0

4. See https://www.aei.org/china-global-investment-tracker/

5. In doing so, it ensures that: (1) financial values of all selected projects in the dataset are not double counted; (2) all selected projects have moved beyond the pledge stage; and (3) all suspended or cancelled projects are excluded. However, AidData lacks financial values for many projects in the database and recommended 4,314 projects (excluding territories) for research. We do not know whether these data were missing at random.

6. It is important to note that transactions are revised several times before being disclosed by CGIT (Scissors 2021). This approach reflects differences in the reporting approach between AidData and CGIT. For example, with

<sup>© 2022</sup> The Authors. *The Australian Economic Review* published by John Wiley & Sons Australia, Ltd on behalf of The University of Melbourne, Melbourne Institute: Applied Economic & Social Research, Faculty of Business and Economics.

the onset of the Global Financial Crisis in 2008, Chinese official commitments to respective governments decreased, and capital dried up. In the case of CGIT, this is, however, revealed in 2009 (see Table 2).

7. By 2009, China began a shift from being a petroleum exporting country to a net importer of petroleum consuming 5.46 million barrels a day (Center for the Study of Technology and Society 2004). Angola agreed to provide China with 10,000 barrels of oil per day from its oil exports (Kiala 2010).

#### ORCID

Salma Ahmed D https://orcid.org/0000-0001-5005-4873

Bruce Rasmussen in https://orcid.org/0000-0001-5779-0339

Peter Sheehan (D) https://orcid.org/0000-0001-9450-8371

#### REFERENCES

- Ahmed, S., Sheehan, P. and Rasmussen, B. 2021a, 'China's global development finance for infrastructure: How much have we learned?', Project Working Paper, Victoria Institute of Strategic Economic Studies and Institute for Sustainable Industries and Living Cities, Victoria University, Melbourne.
- Ahmed, S., Sheehan, P. and Rasmussen, B. 2021b, 'Understanding Chinese foreign aid: A look at a global development finance dataset', Project Working Paper, Victoria Institute of Strategic Economic Studies and Institute for Sustainable Industries and Living Cities, Victoria University, Melbourne.
- American Enterprise Institute and Heritage Foundation. 2021, *China global investment tracker*, AEI, Washington, DC, <https://www. aei.org/china-global-investment-tracker/>.
- Brautigam, D. 2011, 'Chinese development aid in Africa: What, where, why, and how much?', <https://deborahbrautigam. files.wordpress.com/2013/04/2011brautigam-chinese-aid-in-africa.pdf>.
- Bräutigam, D. 2011, 'Aid "with chinese characteristics": Chinese foreign aid and development finance meet the OECD-DAC aid regime', *Journal of Internatio nal Development*, 23, no. 5, pp. 752–764. <https://doi.org/10.1002/jid.1798>.

- Center for the Study of Technology and Society. 2004, 'Power-hungry China: The international consequences of China's quest for energy', *The New Atlantis, Winter*, 4, pp. 114–116.
- Dreher, A., Fuchs, A., Hodler, R., Parks, B. C., Raschky, P. A. and Tierney, M. J. 2019, 'African leaders and the geography of China's foreign assistance', *Journal of Development Economics*, 140, no. September, pp. 44–71. <a href="https://doi.org/10.1016/j.jdeveco.2019.04.003">https://doi.org/10.1016/j.jdeveco.2019.04.003</a>>.
- Dreher, A., Fuchs, A., Parks, B., Strange, A. M. and Tierney, M. J. 2018, 'Apples and dragon fruits: The determinants of aid and other forms of state financing from China to Africa', *International Studies Quarterly*, 62, no. 1, pp. 182–194. <a href="https://doi.org/10.1093/isq/sqx052">https://doi.org/10.1093/isq/sqx052</a>>.
- Dreher, A., Fuchs, A., Parks, B. C., Strange, A. M. and Tierney, M. J. 2017, 'Aid, China, and growth: Evidence from a new global development finance dataset', AidData Working Paper no. 6, AidData, Williamsburg, Virginia.
- Dreher, A., Fuchs, A., Parks, B. C., Strange, A. M. and Tierney, M. J. 2021, 'Aid, China, and growth: Evidence from a new global development finance dataset', *American Economic Journal: Economic Policy*, 13, no. 2, pp. 1–40.
- Grépin, K. A., Fan, V. Y., Shen, G. C. and Chen, L. 2014, 'China's role as a global health donor in Africa: What can we learn from studying under reported resource flows? *Globalization and Health*, 10, no. 1, pp. 84. <https://doi.org/10.1186/s12992-014-0084-6>.
- Hillman, E. J. 2020, China and Russia: Economic unequals. viewed August 2021, <https://www.csis.org/analysis/China-and-Russia-economic-unequals>.
- Hwang, J., Bräutigam, D. and Eom, J. 2016, 'How Chinese money is transforming Africa: It's not what you think', Policy Brief no. 11/2016, China Africa Research Initiative (CARI), School of Advanced International Studies (SAIS), John Hopkins University, Washington, DC.

<sup>© 2022</sup> The Authors. *The Australian Economic Review* published by John Wiley & Sons Australia, Ltd on behalf of The University of Melbourne, Melbourne Institute: Applied Economic & Social Research, Faculty of Business and Economics.

<https://www.econstor.eu/bitstream/ 10419/248190/1/sais-cari-pb11.pdf>.

- Kaplinsky, R. D. 2010, 'China and Sub-Saharan Africa: Impacts and challenges of a growing relationship', in *The Political Economy of Africa*, ed. V. Padayachee, Routledge, London; pp. 389–409.
- Kiala, C. 2010, 'China–Angola aid relations: Strategic cooperation for development?', South African Journal of International Affairs, 17, no. 3, pp. 313–331. <a href="https://doi.org/10.1080/10220461.2010.533528">https://doi.org/10.1080/10220461.2010.533528</a>>.
- Malik, K. 2013, *Human Development Report* 2013, United Nations Development Programme (UNDP), New York.
- Poplak, R. 2016, 23 December, 'The new scramble for Africa: How China became the partner of choice', *The Guardian*. <a href="https://www.theguardian.com/globaldevelopment-professionals-network/2016/dec/22/the-new-scramble-forafrica-how-China-became-the-partnerof-choice>.

- Scissors, D. 2021, China's Coming Global Investment Recovery: How Far Will It Go?, American Enterprise Institute (AEI), Washington, DC. <a href="https://www.aei.org/china-global-investment-tracker/">https://www.aei.org/china-global-investment-tracker/</a>>.
- State Council, 2011, *China's Foreign Aid*, Information Office of the State Council, Beijing, China.
- State Council, 2014, *White Paper on China's Foreign Aid*, Xinhua/Information Office of the State Council, Beijing, China.
- Strange, A., Mengfan, C., Brooke, R., Siddhartha, G. and Bradley, P. 2017, *Tracking Underreported Financial Flows* (*Tuff*) Methodology, Version 1.3, AidData, Williamsburg, Virginia.

### SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

<sup>© 2022</sup> The Authors. *The Australian Economic Review* published by John Wiley & Sons Australia, Ltd on behalf of The University of Melbourne, Melbourne Institute: Applied Economic & Social Research, Faculty of Business and Economics.