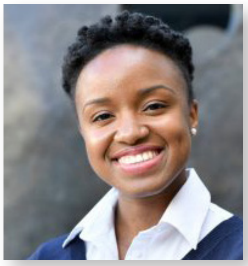

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China's Paid-In Capital

IDENTIFYING AND ANALYZING CHINA'S OVERSEAS DEVELOPMENT INVESTMENT FUNDS

OYINTARELADO MOSES, LAURA GORMLEY, CECILIA SPRINGER

ABSTRACT

China's 'Going Out' strategy and Belt and Road Initiative (BRI) launched China to be the world's largest source of cumulative bilateral official development finance. However, in recent years, overseas development finance from China's policy banks has declined and China's outward finance has diversified towards other channels. One emerging and under-studied area of China's overseas development activity are special investment funds, which we term overseas development investment funds (ODIFs) based on their development-oriented mandates and focus on the provision of equity. This working paper tracks and develops a typology for China's ODIFs, distinguishing them from prior conceptualizations of China's overseas equity investments and funds. We define China's ODIFs as pools of capital, often established by multiple public and/or private shareholders, which primarily provides equity financing to certain regions and sectors overseas. We classify ODIFs into three fund types: sovereign development funds (SDFs), private equity funds (PEFs) and joint investment funds (JIFs). We assemble a dataset of ODIFs and analyze patterns in capitalization, regions and sectors of focus and shareholders. We also present case studies of each classification of fund type, focusing on the Silk Road Fund (SDF), the Green Ecological Silk Road Fund (PEF) and the China-UAE Joint Investment Fund (JIF). We find that the funds in the

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dataset represent a total of $155 billion in capitalization, accrued between 2007-2019. This available capital is significant in scale relative to China's overseas development finance, which totaled $462 billion in loan commitments from China's policy banks between 2008-2019. While capital available via ODIFs does not exceed development finance commitments, it represents a sizeable pool of capital and an important and understudied form of China's overseas engagement.

Keywords: Belt and Road Initiative, BRI, China's overseas development finance, overseas development investment funds, ODIFs

INTRODUCTION AND LITERATURE REVIEW

China's overseas economic activity is diversifying. China's 'Going Out' strategy and Belt and Road Initiative (BRI) launched the rapid expansion of Chinese outbound finance (WenBin and Wilkes 2011; Ye 2020). Today, China is the world's largest source of cumulative bilateral official development finance (Ray et al. 2021a). However, in recent years, the rate of China's outbound lending has begun to wane. Overseas development finance from China's policy banks – China Development Bank (CDB) and the Export-Import Bank of China (CHEXIM) – peaked in 2016 and has since been in decline (Ray et al. 2021b). Databases tracking China's overseas finance identified that China made no new development finance commitments to Latin America (Albright et al. 2022) or the global energy sector ("China's Global Energy Finance Database" 2022) in 2021.

Official development finance is only one channel through which China moves capital overseas. Aid, foreign direct investment, contracted services and commercial bank lending are also important avenues of overseas economic engagement for China. To some extent, there are public and commercial sources of data on regional, sectoral and global flows of these types of finance and engagement produced by research groups at the Aiddata Research and Evaluation Unit at the College of William and Mary, the American Enterprise Institute, the China Africa Research Initiative at the Johns Hopkins University School of Advanced International Studies and the Boston University Global Development Policy Center. Research from these groups has contributed to building a picture of China's overseas financial activity and set methodological precedents in data tracking. However, most prior tracking and research concentrates on China's loan and grant-based financing.

Tracking China's equity investments is necessary to build a complete picture of the scope and magnitude of financial activities comprising China's outbound economic activity. One emerging and understudied area of China's overseas development activity are special investment funds, which we term overseas development investment funds (ODIFs) based on their development-oriented mandates and focus on the provision of equity. This working paper tracks and develops a typology for China's ODIFs, distinguishing them from prior conceptualizations of China's overseas equity investments and funds.

Projects in infrastructure and production capacity, the primary destination of BRI investments (He 2020), are financed through a combination of equity, debt and grants. Li (2020) argues that equity investments provide an alternative avenue for economic participation in BRI infrastructure projects, filling the gap between official grants and loans. Sheng (2021) proposes sovereign wealth funds as an option to improve the efficiency of China's BRI investments. Similarly, ODIFs permit a broader range and flexibility of project finance structures by offering equity investment. Clark and Monk

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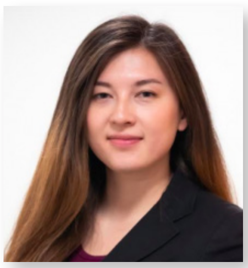

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(2015) explore the role of sovereign development funds in mobilizing alternative private investment for strategic development areas. Yet, there is a need to better understand ODIFs, which are not exclusively sovereign-backed and incorporate foreign partners. Bräutigam (2015) points out that sovereign wealth funds are funded directly from central bank reserves, excluding most ODIFs from this designation. ODIFs create a forum for traditional BRI financial institutions – policy (CDB and CHEXIM) and commercial (Bank of China and Industrial and Commercial Bank of China) banks – to partner with new development investors such as private enterprises and foreign exchange (FOREX) managers. WenBin and Wilkes (2011) touch on this characteristic of ODIFs in their analysis of the China-Africa Development (CAD) Fund as a credit-support mechanism aimed at encouraging investment from private companies in the BRI.

Hu (2019) notes that joint funds between Chinese and foreign actors can support BRI investment in foreign markets beyond their financial capacities through security and legal protection and as a vehicle for public support. As mechanisms for cooperating with local partners, ODIFs can harness specialized capacities for operating in local markets, granting them an advantage over other financial institutions in realizing investment returns (Clark and Monk 2015). ODIFs can also provide banks the opportunity to make off-balance sheet equity investments. As independent entities, investment funds take on and reallocate investment risk. Losses from investments made through these funds will not impact the bank's gearing ratio, but instead the equity arrangement of the fund (Kaplan 2021). Indeed, certain funds are solely capitalized by a policy bank, such as the CAD Fund, or a bank acts as the fund's cornerstone investor, such as the China-ASEAN Investment Cooperation Fund. ODIFs' sponsorship arrangements present policy banks with the opportunity to share investment risk among a diversity of shareholders.

Our taxonomy builds off contributions to the development of classification systems for China's overseas activity in Xu et al. (2019; 2020). Li's (2020) comprehensive exploration of the CAD Fund's governance and function also lays important groundwork for understanding the overlap and divergence between ODIFs and financial institutions. Regionally focused studies of BRI-supporting financial institutions were informative for contextualizing ODIFs in broader bilateral and regional diplomatic initiatives. Pardo (2018), Yi and Zuokui (2019) and Barisitz (2020) examine ODIFs targeting Central and Eastern European markets. Meyers and Ray (2022), and Li and Zhu (2019) explore ODIFs targeting Latin America and Caribbean markets. Li (2020), Babones et al. (2020) and WenBin and Wilkes (2011) report on ODIFs targeting African markets. While these studies have produced in-depth analyses of individual or regional groups of funds, our study presents the first global view of China's ODIFs.

Defining ODIFs

We define China's ODIFs as pools of capital, often established by multiple public and/or private shareholders, which primarily provide equity financing to certain regions and sectors overseas. Financing from ODIFs is often distributed within the context of certain initiatives and goals, such as the Belt and Road Initiative (BRI) and greening the BRI. ODIFs differ from typical equity funds because their intended returns on investment expand beyond making profits. Generally, ODIFs have development-based mandates, which means they direct their financing toward investment projects with expected developmental socioeconomic impacts and an anticipated opportunity to strengthen economic relationships between China and host countries. We classify ODIFs into three fund types: sovereign development funds (SDFs), private equity funds (PEFs) and joint investment funds (JIFs), discussed further below. These funds extend equity and/or debt financing for the purpose of equity to overseas development projects in the general infrastructure, energy and resources, technology, financial and social sector, agriculture, manufacturing and capacity building sectors.

ODIFs are diverse in their types and scopes. They include funds solely created or owned by Chinese government entities, funds with Chinese commercial shareholders and funds with a mixture of Chinese public and non-public shareholders. Some funds with regional investment scopes have host country or regional actor shareholders. The portfolios of these funds can extend beyond commercial investments to include host country public investments as well. The diversity of China's ODIFs and their use of equity instruments sets them apart as financing tools worth exploring in detail. However, ODIFs should be contextualized in the broader landscape of prior research on China's outbound financing.

Following this definition of ODIFs, our research systematically collects and analyzes fund-level data to understand trends in ODIF capitalization available by region and sector and assesses the major shareholders of China's ODIFs. In addition, we classify ODIFs into three fund types to further develop our definitions and understanding of ODIFs. We present case studies of each type of ODIF to demonstrate similarities and variations in types of shareholders, the funds' structures and the participation of foreign sponsors in the funds. We then situate the emergence of ODIFs as part of a broader trend in China's diversifying overseas activities and assess how emerging policy frameworks may contribute to the growth of ODIFs. We also discuss limitations in study methodology and assess how future research could deepen analysis of ODIFs.

COMPARING ODIFS AND DFIS

In this section, we take an institutional approach to assess the similarities and differences between development finance institutions (DFIs) and ODIFs. Previous literature has classified certain funds from our dataset among China's DFIs (Xu et al. 2019; 2020). However, the results of our analysis repudiate this classification. ODIFs conduct distinctive economic activity, possessing different advantages and political implications than DFIs.

DFIs are frequently defined in existing literature as legally independent, government-supported financial institutions that pursue public policy objectives (Xu et al. 2019; FIC 2022). DFIs use various financing instruments including debt, equity, grants, insurance, guarantees and in some cases, capacity building, to address developmental challenges, often in foreign countries. We define ODIFs as pools of capital, often established by multiple public and/or private shareholders, for the purpose of primarily extending equity financing for overseas development projects. Contrary to the number of tools DFIs have at their disposal, ODIFs employ a more consolidated set of financial instruments, by primarily wielding equity finance, to support development projects.

As demonstrated in the Case Study Analysis section, like DFIs, ODIFs have development mandates, which means development impact is considerably inherent to policy directives and capital allocation priorities. This mandate directs ODIF and DFI financing to overseas development projects, orienting and exposing them to host country demand for financing. Since DFIs and ODIFs use market means to achieve development-based objectives, they are not like commercial banks or funds because they are not solely profit-seeking financing mechanisms.

However, ODIFs and DFIs diverge in how they distribute their financing and make profits. The loan-making arm of DFIs lends to projects and seeks to receive a repayment with interest over many years, while a DFI's equity investment arm can provide direct equity investments or equity investments in funds (Michelitsch et.al. 2017). By contrast, but in some ways similar to DFIs' equity investment structuring, sponsors' investments through most ODIFs pay for temporary or partial ownership of a project with the goal of making profits upon exiting their investment–generally at a higher rate of return than loan interest rates. Investment returns are not used to replenish an ODIF's pool of paid-in capital, as they would for a DFI, but instead are paid out directly to shareholders.

This paid-in structure, detailed in the Results section, is also a reflection of the typical multi-shareholder structure of ODIFs. As reflected in Table 2, multiple shareholders often join together to form an ODIF, resembling the structure of private equity funds. As a result, an ODIF entity is often managed as a distinct institution, even in the case of funds where a DFI acts as the cornerstone shareholder. Due to this multi-shareholder approach, some ODIFs are joint funds between DFIs and other regional financing institutions. These are classified as JIF ODIFs in Table 1 of the Results section. In the Methods section, we mention regional DFIs that house joint loan funds with Chinese financing institutions, such as the African Development Bank and People's Bank of China's joint Africa Growing Together Fund. However, according to our definition of ODIFs, these joint loan funds are not ODIFs, as they do not provide equity investments or debt for equity financing.

Taxonomies at the level of DFI fail to capture these differences and often misconstrue overlapping features between DFIs and ODIFs. By analyzing the results observed from assessing ODIFs, we identify characteristics of ODIFs that distinguish them from DFIs. In doing so, we pinpoint ODIFs as a distinct instrument in China's toolkit of outbound investment activity.

METHODS

Our research aims to compose the most comprehensive dataset of China's ODIFs possible from publicly available resources and to draw on these findings to develop a system of fund classification. Data on the 21 ODIFs in our dataset was gathered from the websites of funds and fund shareholders, and official statements of Chinese government officials available on the websites of the Ministry of Foreign Affairs, Ministry of Commerce and Chinese Embassies. Ten funds in our dataset had dedicated websites, seven had webpages featured on shareholders' websites and four had no official online presence. Information on the four funds without an official online presence was validated by state-affiliated press or web archives. When available, information was cross-referenced between primary sources produced by Chinese and foreign fund shareholders. Reporting by funds or fund shareholders might invoke a risk of bias. To mitigate this, press sources and academic literature in English and Chinese were consulted to supplement and cross-check primary-source data.

Our research drew on the literature of financial instrument classifications to determine a set of variables to guide data collection and analysis. We collected information on the following fund-level variables: capitalization amount and target, shareholders, year of establishment and lifespan, regional and sectoral focus of investments, financial instruments used (equity/debt) and purpose and positioning. Our complete dataset of fund-level variables can be found in the Appendix. Information on fund disbursements proved difficult to find from publicly available sources. Fund reporting on management operations, investment activities and social and environmental safeguards is sparse. This was unsurprising, as low transparency is characteristic of the subject area of research on Chinese economic activity (Ray et al. 2021a).

ODIFs generally report information on investments only for featured projects, with limited information on total disbursements. Thus, our main quantitative metric for assessing the scale of ODIFs' finance is their capitalization amount at the time of data collection (2022) rather than disbursements. "Year established" records the year of the fund's initiation and does not necessarily correspond to the time the fund was capitalized or began activity. At the time of establishment, it was common for funds to announce a goal capitalization amount. Some funds began actively investing before reaching their goal capitalization, others achieved goal capitalization before beginning operations or continued to accrue more funding and still others never recorded reaching their goal capitalization. Our dataset provides the first complete valuation of these funds' available capital and record of the time they were established. The resulting trends can be used to assess the contribution of ODIFs to China's total available outbound capital and the popularity of equity investment as an economic and political activity over time. Data on goal capitalization and lifespan of the funds was incomplete, and therefore not included in the analysis. Information that was available is included in the Appendix.

We classified sectors supported by the funds into ten categories: general infrastructure, energy and resources, manufacturing, technology, the financial sector, green development, agriculture, the social sector, capacity building and consumer goods and services. Data on target investment sector and region, and financial instruments employed by the funds was gathered from information provided by funds and fund shareholders, rather than assessed from investment activity. Information on targeted sectors allows for an analysis of aggregate investment behavior and available capital for equity investing in industries of interest, such as green industry. Our identification of shareholders includes all sponsors who participated in fund capitalization. In some cases, shareholders may have exited and entered funds at different points in the fund's lifespan. Shareholder information allows for critical analysis of fund ownership and identity.

We also identified and included two sub-funds in our analysis. The CAF Indonesia Sub-Fund and The China-Kazakhstan Production Capacity Cooperation Fund are classified as sub-funds because their capitalization is entirely supplied by other ODIFs. There are other cases in which an ODIF initiated the formation of another fund together with other sponsors. For example, the Russia-China Investment Fund (RCIF) is a sponsor of the China-Russia Regional RMB Fund and Russia-China Venture Fund (RCVF). In both cases, these funds were created to target a more specific investment focus. The RCIF's contributions to the paid-in capital were funded by raising additional rounds of financing, rather than using the RCIF's own paid-in capital.

Funds solely established to allocate debt financing or grants were excluded from our analysis because they do not extend any equity financing. Such "other funds" include the debt-financing Africa Growing Together Fund (AGTF) at the African Development Bank and the China Co-financing Fund for Latin America and the Caribbean at the Inter-American Development Bank (IDB), each with a capitalization of $2 billion. The grant-making South-South Climate Cooperation Fund and South-South Cooperation Assistance Fund also fall into this group. To be considered in our dataset, funds must have an external development focus. Funds that only target the Chinese market, such as the China-Qatar Joint Investment Fund, do not meet this criterion for inclusion. Although these funds are not within the scope of this paper, they could also play a significant role in diversifying the sources of Chinese development-related finance in the coming years.

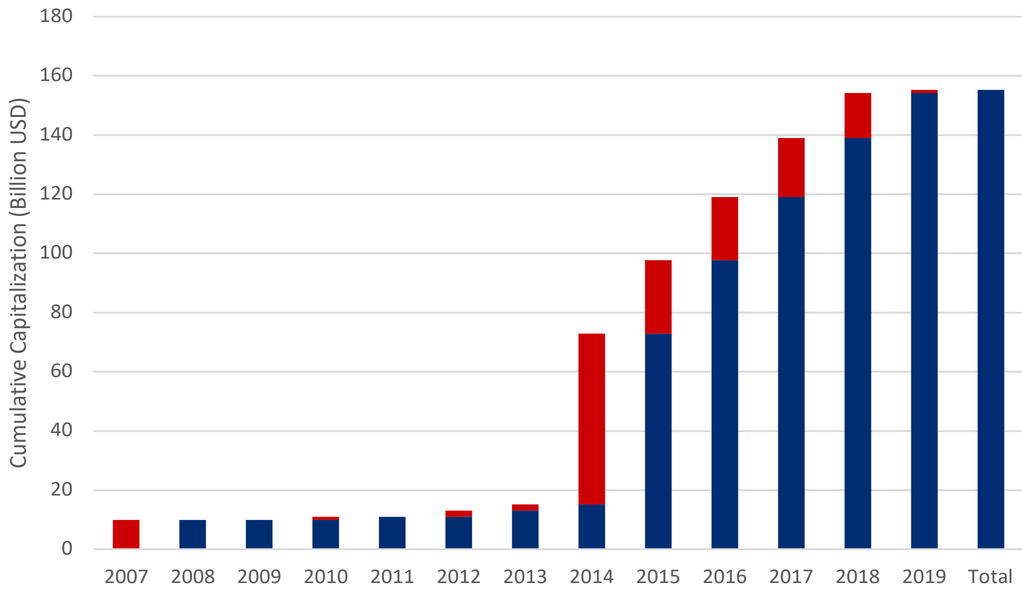
RESULTS

Fund Capitalization Trends

The funds in our dataset represent a total of $155 billion in capitalization, excluding sub-funds capitalized by funds in the dataset in order to avoid double counting. Based on the year in which a fund was established, we tracked the amount of capitalization over time (Figure 1). The funds in our dataset were capitalized between 2007-2019. 2014 had the greatest additional capitalization, while 2008, 2009 and 2011 had no additional capitalization.

For comparison, the China's Overseas Development Finance Database maintained by the Boston University Global Development Policy Center identified $462 billion in loan commitments from China's policy banks between 2008-2019, and the World Bank committed $467 billion over the same period (Ray et al. 2021a), indicating that while capital available via ODIFs does not exceed development finance, it represents a sizeable pool of capital. It is important to note that capitalization does not mean funds were disbursed in the same year.

Figure 1: Additions by Year (in Red) to Cumulative Capitalization (in Blue) of China's Overseas Development Investment Funds



Source: Authors' visualization.

Note: Amounts do not include sub-funds. The graph depicts capitalization according to the year the fund was established, and not necessarily the year capital was available.

After gathering public information about the descriptions of the fund, fund ownership, financing instruments and fund purpose, we classified ODIFs into three types: SDF, PEF and JIF. Since there are various existing characterizations of China's ODIFs due to commonly used financial structures and instruments, our classifications serve to distinguish ODIFs based on characteristics we observe. ODIFs are classified based on the criteria of each fund type, as described in Table 1. Criteria were prepared based on public descriptions of the funds found on fund websites or characteristics of the fund that are in line with our definitions based on existing literature.

We used Clark and Monk's (2015) definition of SDFs to shape our classification of China's ODIFs in the SDF category. Clark and Monk define SDFs as "publicly sponsored commercial investment funds that combine financial performance objectives with development objectives." This definition is in line with our findings, where we observed that China's SDF ODIFs are publicly owned investment funds with commercial and development objectives. SDFs are distinguishable from sovereign wealth funds (SWFs) based on their development mandate and capital sourcing. SWFs are "special-purpose investment funds or arrangements that are owned by the general government" and they "manage or administer assets to achieve financial objectives" (Clark and Monk 2015). SWFs source capital directly from central bank FOREX reserve surpluses while SDFs source initial capital from their shareholders. This disqualifies all of China's SWFs from being added to our dataset of ODIFs. For example, China's Investment Corporation (CIC) would not be considered an SDF ODIF because it is a Chinese SWF that manages China's FOREX reserves. Instead, CIC is considered a shareholder of several SDF funds.

Our definition of PEFs aligns with general literature on private equity funds, especially long-term private equity. Private equity funds pool capital for the purpose of long-term investing in projects within a ten-year fund cycle and beyond (Lee and Synetos 2018). We use this definition and add the development mandate aspect of China's PEF ODIFs. Lastly, we classify JIFs based on attributes we recognized in a group of ODIFs. Such ODIFs with Chinese and non-Chinese shareholders are a set of funds that seek to build economic cooperation between China and the host country.

We identified five SDFs ($75.5 billion in capitalization), nine JIFs ($34.5 billion) and seven PEFs ($45.3 billion). Although there were fewer SDFs, their larger total capitalization is driven by the classification of the Silk Road Fund as an SDF, as it is the largest fund by capitalization in our dataset at $54.5 billion. JIFs are the most frequent type of ODIFs in our dataset. They target investments in Asia, Europe/Central Asia and Latin America with the primary purpose of strengthening economic cooperation between the region or country and China. A high number of JIF funds may be reflective of Chinese investors partnering with local investors to better originate, structure and manage investments as well as navigate regional regulatory environments. Chinese partnerships with regional or local institutions are also prevalent amongst PEFs. However, the limited partnership structure feature of PEFs, which designates how much risk each investor takes for the duration of the fund, distinguishes them from JIFs. PEFs have a higher combined capitalization than JIFs at $45.3 billion and PEFs in our dataset largely target the Europe/Central Asia region, with five of seven funds focused on this region.

Table 1: Overseas Development Investment Fund Classification System

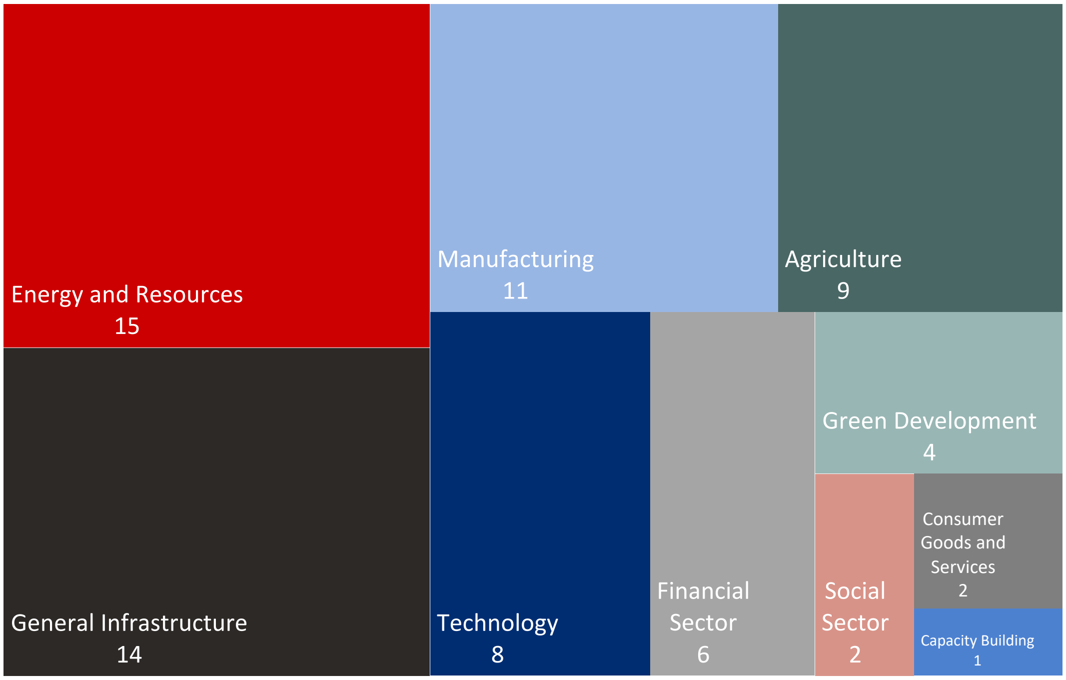
Fund Type	Criteria
Sovereign Development Fund (SDF)	1) Fund is described as an investment fund with aims to support overseas development AND 2) shareholders are wholly owned by a state-owned entity(ies) AND 3) provides equity and debt for equity investments.
Private Equity Fund (PEF)	1) Fund is described as a private equity fund with aims to support overseas development. OR 2) has a limited partnership shareholder structure AND 3) includes a limited fund life that exists over a period of time where the fund can hold the asset and sell at the end of the fund life AND 4) provides equity and debt for equity investments AND 5) the fund aims to support overseas development.
Joint Investment Fund (JIF)	1) Fund is established by a Chinese and a host country or regional institution for the purpose of investing (equity and debt for equity investment) in development-related sectors in the host country or region AND 2) the fund is not described or established as a private equity fund or a sovereign development fund.

Source: Authors' elaboration.

Many funds support multiple sectors and allocation amounts within capitalization are unknown, therefore we assessed the number of funds that have stated support for the chosen sector categories. We found that the energy and resources sector had the largest number of funds specifying support for this sector, at 15 funds, followed by general infrastructure, at 14 funds. We noted four funds that specifically targeted green development activities, based on the funds' own description of sectoral focus.

Table 2 below shows shareholders that supported multiple funds. This is not an exhaustive list of shareholders identified in our dataset (see Appendix) as some shareholders were specific to individual funds, especially individual company investors. We classified these multi-fund shareholders into four categories: policy banks, central banks, FOREX managers and foreign shareholders. Shareholder information, gathered from the websites of funds or shareholders, presents an overview of the geographic origin and public or private sector identities of the actors providing paid-in capital to ODIFs. In many instances, shareholders also participate in investment review and approval processes and fulfill other managerial responsibilities.

Figure 2: Number of Funds Supporting Different Sectors



Source: Authors' visualization.

Table 2: Multi-Fund Shareholders

Shareholder Type	Shareholder	Funds Supported
Policy Bank	China Development Bank (CDB)	Silk Road Fund China-LAC Industrial Cooperation Investment Fund / CLAIFUND / China-LA Production Capacity Cooperation Investment Fund (CLAI Fund) China-Mexico Fund China-UAE Joint Investment Fund China-Africa Development Fund (CAD Fund)[1] China-Portuguese Speaking Countries Cooperation and Development Fund
	Export-Import Bank of China (CHEXIM)	Silk Road Fund China - ASEAN Investment Cooperation Fund (CAF) China-Central and Eastern Europe Investment Cooperation Fund (CHEXIM led) (China-CEEC Investment Cooperation Fund) China-LAC Cooperation Fund (CLAC Fund) China-Eurasian Economic Cooperation Fund
Commercial Bank	Bank of China	China-Eurasian Economic Cooperation Fund China - ASEAN Investment Cooperation Fund (CAF)
FOREX Manager	China's State Administration of Foreign Exchange (SAFE)	China-UAE Joint Investment Fund China-LAC Cooperation Fund (CLAC Fund) Silk Road Fund China-LAC Industrial Cooperation Investment Fund / CLAIFUND / China-LA Production Capacity Cooperation Investment Fund (CLAI Fund)
	China's Investment Corporation (CIC)	China - ASEAN Investment Cooperation Fund (CAF) Sino-Russian Innovation Investment Fund / Russia-China Technology Investment Fund L.P. China-Mexico Fund Silk Road Fund Russia-China Investment Fund (RCIF)

[1] Some researchers have defined the CAD Fund as a private equity fund (Brautigam, 2015). But based on CDB's capital infusion, we designate it as an SDF.

Table 2: Multi-Fund Shareholders (continued)

Shareholder Type	Shareholder	Funds Supported
Foreign Shareholder	International Finance Corporation (IFC)	China - ASEAN Investment Cooperation Fund (CAF) China-Mexico Fund
	Russia-China Investment Fund (RCIF)	China-Russia Regional RMB Fund Russia-China Venture Fund (RCVF)
	Russian Direct Investment Fund (RDIF)	Russia-China Investment Fund (RCIF) Sino-Russian Innovation Investment Fund / Russia-China Technology Investment Fund L.P.
	Hungarian Export-Import Bank	Sino-CEE Investment Fund / China-Central and Eastern European Fund (ICBC led) (Sino-CEEF) China-Central and Eastern Europe Investment Cooperation Fund (CHEXIM led) (China-CEEC Investment Cooperation Fund)

Source: Authors' compilation.

Although information on shareholder contributions was not available for every fund, from the information compiled in our dataset certain patterns emerge that warrant attention. Funds are often capitalized through multiple rounds of financing, either on an on-going basis or after the initial tranche of capital has been invested. Certain funds are entered into as joint agreements between actors who retain a predetermined ratio of capitalization. For example, the China-UAE JIF and the RCIF are both financed at a 1:1 capitalization ratio between a Chinese partner and foreign partner. The China-Brazil fund is capitalized at a 3:1 ratio with the CLAI fund contributing at three times the rate of Brazilian partners. If these funds increase their paid-in capital, they are intended to maintain these ratios. In other cases, one shareholder acts as an anchor investor who attracts additional capitalization from other partners. In the China-ASEAN Investment Cooperation Fund, CHEXIM acted as an anchor sponsor with a seed investment of $300 million and for the Sino-CEE fund, ICBC was the anchor.

Shareholder composition is not always static. Certain funds have gone through rounds of refinancing in which old sponsors exit and new ones enter. In the case of the China-CEE Fund, CHEXIM and the Export-Import Bank of Hungary supplied the first tranche of financing. In the second tranche of financing, sponsors expanded to include contributions from the Silk Road Fund and CEE Equity Partners Limited. Our analysis of shareholders in Table 2 includes all entities who financed multiple funds and at any point contributed to the fund's paid-in capital. A more detailed breakdown can be found in the Appendix, however, there is insufficient information publicly available to verify the time at which new sponsors entered or exited funds in every case.

Finally, we examined the amount of potential capital available for specific regions and countries (Figure 3). Some funds also specified a broad range of geographic support and we classified these funds as global. Amounts in Figure 1 do not total to the cumulative capitalization of funds in our dataset because we are displaying potential capital available. That is, the full capitalization of a fund that has indicated support for multiple regions is allocated to those regions, rather than taking a weighted approach, given lack of data availability on allocations and/or disbursement.

The Latin American and Caribbean region, adding specific funds for Brazil and Mexico, has the largest potential total amount of capital, at $42.2 billion, followed by Europe and Central Asia, at $30.5 billion. Africa and the rest of Asia had relatively fewer dedicated funds and capitalization, although they may be destinations for global funds, such as the Silk Road Fund (also the largest fund by capitalization in our dataset).

Figure 3: Potential ODIF Capital Available by Region/Country

Source: Authors' visualization

In order to better understand how funds work in practice, we complement this aggregated data with fund-level case studies in the next section.

Case Studies

Drawing from publicly available information on the funds' official websites and internet searches, we examined case studies for each of the three fund types. These three funds were selected on the basis of having attributes most common to their fund type. For each case study, we discuss the fund's background (e.g., establishment date, purpose, shareholders, capitalization) and an explanation of how the fund works (e.g., financing instruments, fund life, target investment). We then finish each case study with examples of funded projects and a brief outlook of the fund.

Case studies focus on three funds: The Silk Road Fund, the Green Ecological Silk Road Fund and the China-UAE Joint Investment Fund. The Silk Road Fund most represents the SDF fund type due to the majority stake China's FOREX managers hold in the fund. It is also the fund with the largest capitalization potential, which warrants a deeper dive into the fund's background and structure. The Green Ecological Silk Road Fund's characteristics satisfy all five aspects of our criteria for PEFs, especially given the heavy participation of private sector companies involved in the fund. Lastly, the China-UAE Joint Investment Fund's ownership, which is based on invested capital, is evenly distributed between a Chinese financing institution, CDB and a foreign financing institution, the Emerati-owned Mubadala Investment Company. This fund operates as a joint venture with equal sponsorship and oversight between the foreign and Chinese institutions. These case studies explore how the qualities unique to each fund type translate into a fund's operations beyond the data points discussed in the results section.

SOVEREIGN DEVELOPMENT FUND: SILK ROAD FUND

The Silk Road Fund (SRF) was established in 2014 to support trade and economic cooperation with BRI host countries. China's State Administration of Foreign Exchange (SAFE), CIC, CDB and CHEXIM collectively infused $54.5 billion for the acquisition of a 65 percent, 15 percent, 5 percent and 15 percent stake, respectively (Silk Road Fund n.d.). These shareholders are some of China's public financial powerhouses, as SAFE, an administrative agency, and CIC, a sovereign wealth fund, both manage parts of China's foreign exchange reserves. CDB and CHEXIM have played a major role as state-owned public financiers for overseas development projects. These direct links to state-owned FOREX managers and policy banks, along with the fund's explicit development-oriented purpose positions SRF as an SDF.

SRF is described as a "medium to long-term (MLT) development and investment fund" with the capacity to finance overseas development projects with debt and equity instruments (Silk Road Fund n.d.). The fund can employ equity for greenfield and brownfield investments, mergers and acquisitions, subscriptions to initial public offerings (IPOs) and pre-IPOs and preferred shares.[1] SRF can also extend debt through loans and bonds, which includes mezzanine debt.[2] Although information on the life cycle or repayment terms of these instruments are not publicly available, the SRF is described as similar to a MLT private equity firm (Silk Road Fund n.d.). For equity investments, this could mean that the fund's timeline for acquiring and exiting an investment is up to or beyond the traditional ten-year private equity life cycle (Lee and Synetos 2018).

SRF targets projects that are primarily located in BRI host countries and in various sectors, such as general infrastructure, energy and resources, capacity building and the financial sector. SRF has funded projects in Pakistan, Russia, the United Arab Emirates, Egypt, Germany, France, Italy, Oman, Chile and Saudi Arabia. In its first investment, together with China Three Gorges Corporation, SRF took an equity stake in Pakistan's Islamabad hydropower project in 2015 (Silk Road Fund 2015). In 2018, SRF co-financed a national fiber optic broadband network in Oman with Asian Infrastructure Investment Bank by providing a loan to design and construct the first phase of the project (Silk Road Fund 2018). The most recent project SRF financed took place in early 2022 where SRF joined a consortium led by BlackRock Real Assets and Hassana Investment Company to purchase a 49 percent stake in Aramco Gas Pipelines company in Saudi Arabia (Silk Road Fund 2022). The involvement in such projects highlights SRF's continued commitment to implementing the BRI vision through financial means and doing so with private and public stakeholders.

PRIVATE EQUITY FUND: THE GREEN ECOLOGICAL SILK ROAD INVESTMENT FUND/ GREEN SILK ROAD FUND (GSRF)

The Green Ecological Silk Road Investment Fund, also known as the Green Silk Road Fund (GSRF), was established as a private equity fund in 2015 to support BRI projects aimed at improving the ecological environment and mitigating climate change in China and host countries (Zhu 2015). Several non-state-owned Chinese enterprises established the fund with a $4.8 billion capitalization (Zhu 2015). These companies include Elion Resources Group, Ping An Bank, China Oceanwide Holdings, Group Co Ltd, Chint Group, Huiyan Juice, Macrolink, June Yao and the Administrative Committee of the Sino-Singapore Tianjin Eco-City (Zhu 2015). GSRF was established through a limited partnership structure to provide equity investments with an equity fund lifespan of ten years, which includes a

[1] Greenfield investment is when investors pay into the establishment of a new subsidiary in another country. Brownfield investment is when investors purchase an existing company to launch new production. Financing for company consolidations is considered mergers and acquisition investments. Pre-initial public offerings (IPOs) are shares that can be purchased before a private company sells public stock (IPO). Preferred shares are shares of a company's stock that prepays dividends.

[2] Mezzanine debt is a loan that could convert into an ownership stake in the event of non-repayment.

five-to-eight-year investment period and a two-to-five-year management and exit period (21st Century Business Herald 2015).

The fund primarily targets the green development industry, with a focus on ecological energy, land degradation, restoration and agriculture and solar energy development (Zhu 2015). In 2019, the fund invested $790 million in a project aiming to establish an ecological solar panel industrial chain between Beijing and Zhangjiakou, Hebei (China.org.cn 2019). This was GSRF's first project and ,so far, investments appear to have stayed within China (World Wildlife Fund 2018). Given the GSRF's mandate to implement aspects of greening the BRI, GSRF investments in domestic and overseas green development has potential to expand within the coming years.

JOINT INVESTMENT FUND: THE CHINA-UAE JOINT INVESTMENT FUND (CHINA-UAE JIF)

The China-UAE Joint Investment Fund (China-UAE JIF) was established in 2015 as a platform for co-investments between CDB, SAFE and Mubadala Development Company (now Mubadala Investment Company). Owned by the Emerati government, Mubadala is one of the world's largest state-owned investment funds (Mubadala 2015; US-UAE Business Council 2017). Mubadala Capital's Sovereign Investment Partnership team manages the China-UAE JIF alongside other commercially driven co-investment programs with Russia, France, Greece and Kazakhstan (Mubadala 2018). A team, composed of both Mubadala and CDB employees, source and conduct due diligence on investments (Mubadala n.d.).

Shared responsibility between Chinese and UAE actors for capitalization of the fund, along with the fund's positioning as a resource for the national development initiatives of both governments qualify the China-UAE JIF as a joint investment fund. Mubadala and the CDB made equal contributions of $5 billion to the fund's total capitalization of $10 billion. Statements from both Mubadala and the CDB identify the China-UAE JIF's goals as deepening cooperation between China and Arab countries and advancing key development initiatives of the two participating governments', China's BRI and the UAE's Abu Dhabi 2030 (China Development Bank Capital n.d.).

The China-UAE JIF invests in traditional energy, infrastructure and high-end manufacturing, clean energy and other high-growth industries in China, the UAE and other countries (China Development Bank Capital n.d.). In 2021, a consortium of institutional and strategic investors including the China-UAE JIF invested in Beijing-based AI tech firm 4Paradigm (4Paradigm 2021). This funding round supported 4Paradigm's growth in the enterprise-grade AI industry. Publicly available data on the China-UAE JIF's other investment activities is limited, but the most recent statements from the fund's President have cited more than 12 projects in which the fund participated (Embassy of the People's Republic of China in the Republic of Ghana 2018).

CASE STUDIES CONCLUSION

These funds are representative of China's ODIFs in three main ways. First, they are funds that are established through a multi-shareholder structure. Second, they all use equity as the main feature of their financial toolkits. Lastly, they serve a general public policy purpose of strengthening economic cooperation between China and other regions through financing development. Although they may target different regions and sectors, these three features are generally consistent across SDFs, PEFs and JIFs.

What sets the fund types apart are the types of shareholders, the funds' structures and the participation of foreign ownership in the funds. While SDFs tend to feature primarily state-owned Chinese institutions that manage or distribute China's FOREX reserves, PEFs tend to be explicitly known as private equity funds established through a limited partnership, often with commercial institutions involved. JIFs represent Chinese institutions joining together with regional institutions to boost investment in the host country, with chances to learn from local institutional knowledge. Some of these funds have overlapping features, but these distinctions serve to fit them into a framework to better understand ODIFs' purpose and future value for China's overseas financing diversification over time.

THE ROLE OF ODIFS IN CHINA'S OVERSEAS DEVELOPMENT POLICIES

While development finance from CDB and CHEXIM has declined significantly since 2016 (Ray et. al. 2021), demand for financing infrastructure, energy and other sectors throughout Global South countries has remained. Given the novelty of China's ODIFs and their untapped capital potential, these funds are poised to become increasingly common financial tools in China's BRI. Whether Chinese development finance rebounds or remains at existing levels, these funds will add to an expected diversification of Chinese overseas financing tools for BRI host countries and the Global South at large.

Several recent policy directives from China indicate that a future increase in the use of ODIFs is likely. In the 2021 Forum on China-Africa Cooperation (FOCAC) Dakar Action plan, China committed to "invest in grain and cash crop production projects in such forms as greenfield investment, equity participation, mergers and acquisitions, and leasing" and make better use of the Silk Road Fund and China-Africa special funds (FOCAC 2021). After the 2019 Belt and Road forum, China's Ministry of Foreign Affairs released a list of deliverables and listed several SRF-funded projects under the investment projects and project list section, which shows a particular focus on projects funded through SDFs (FMPRC 2019). Mentioning ODIFs as future financing tools in these policy documents not only conveys their significance, but also signals how they could be better utilized in the coming years.

In addition, ODIFs are mentioned in policies codifying a green BRI. The concept of a green BRI is an increasingly important strategic dimension of China's overseas activity. The recent National Development and Reform Commission (NDRC) Green BRI guidelines released by multiple Chinese ministries "encourage enterprises to set up overseas equity investment funds with focus on green and low-carbon sectors" (NDRC 2022). The 2020 Guidance on Promoting Investment and Financing to Address Climate Change released by the Ministry of Ecology and Environment and others have also released similar guidelines that specifically mention the use of investment funds (MEE 2020).

Finally, dynamics in BRI countries may increase demand for financing from China's ODIFs. As many Global South countries are currently managing debt distress or the risk of debt distress (Malloch-Brown 2022, IMF 2022), these countries may consider alternative financing sources to fund domestic development. Equity financing is an attractive substitute for debt financing for countries that want to free up fiscal resources from debt servicing. Equity from ODIFs could be a viable option for partnering with shareholders to build public infrastructure. Countries will have to assess the advantages and disadvantages of equity financing, as the equity financier requires a share and management input in the financed asset.

DISCUSSION AND POLICY IMPLICATIONS

This working paper has presented a taxonomy of ODIFs, an analysis of their capitalization trends and case studies in order to contribute to an empirical understanding of the diversification of China's overseas economic activity. We collected fund-level data, yet faced some limitations in data completeness and the ability to measure certain variables such as fund lifespan. On the other hand, existing fund variables included in our dataset such as capitalization, shareholder information, financial instruments and year established were held to a high standard of verification from publicly available, web-based sources. Fund disbursements or flows into specific projects are not included in this dataset because funds do not publish financial data. Specific funds such as the Silk Road Fund present project-level information through press releases on their websites. However, lack of annual financial reporting and key information, such as value of the investment or share of project company held by the fund, result in insufficient data to meaningfully analyze fund disbursements at the aggregate level.

Future research could provide a more systematic analysis of ODIFs and establish baseline information in order to evaluate their impacts if further data on disbursements could be gathered. Based on our research, we propose that disbursements could be tracked if ODIFs made annual reports or portfolio statements available. In the absence of more transparent reporting, employing Ray et al.'s (2021a) methodology of using a web scraping algorithm to sift through online documentation together with manual data collection by searching fund websites is one approach to consolidating available information on disbursements. Information on investment flows is valuable data for a more granular understanding of Chinese investment activities, including both positive and negative impacts in the social, economic and environmental spheres. Enhanced transparency and reporting standards are necessary to complement work by independent researchers. In addition, data on specific projects that funds have supported would greatly contribute to collective understanding of financing arrangements for Chinese-funded projects overseas.

The information we collected on the capitalization of ODIFs reveal several important trends. Funds are often capitalized in tranches and/or via joint agreements between multiple partners with a predetermined ratio of capitalization. As equity investments are a purchase of ownership in a project company or asset, the composition of shareholders also provides insight on ownership over foreign assets. As previously mentioned, ODIFs create a unique space in which sovereign-backed institutions such as China's policy banks and state-owned commercial banks partner with private sector or foreign actors. Through this format, ODIFs allocate the negotiation and decision-making process between Chinese and foreign/private shareholders internally to the fund's management team. This is an important departure from the other actors participating in China's overseas development finance. China's most active financial contributors to the BRI such as policy banks (CDB and CHEXIM) and state-owned commercial banks (ICBC) represent solely Chinese or public shareholders in financial decision-making. Negotiations with foreign or private sponsors occur externally at the project finance level. Trends in investment decisions pertaining to different sponsorship compositions of ODIFs remain an area for further exploration. Further research on other sponsors investing alongside ODIFs and on the recipients of investments would allow for more in-depth analysis of the cooperation and decision-making processes between Chinese and foreign actors shaping China's outbound development finance.

This working paper contributes to a growing, empirically-based understanding of the diversification of China's overseas investment and development activity, channeled through equity and dedicated funds. Our classification of ODIFs into SDFs, PEFs and JIFs demonstrates a range of shareholders and fund structure across funds with similar goals of equity investment for overseas development. Further transparency is needed to understand the potential impacts of ODIFs, especially regarding disbursements. Our research notes several policies on China's overseas investment that mention or encourage ODIFs, however, additional policy research is needed to understand governance of ODIFs, especially at the funded project level. As China's overseas activity diversifies and China's leaders promote the concept of a green BRI, a deeper understanding of ODIFs will be necessary to mitigate social, environmental and financial risks and maximize benefits of investment for development.

REFERENCES

21st Century Business Herald. (2015) Shǒu Zhǐ Mínjiān Sī Lù PE Jījīn Tàn Lù ‘Yīdài Yīlù’ Lǜsè Chǎnyè 首只民间丝路PE基金探路‘一带一路’绿色产业 [First Private Silk Road PE Fund to Explore ‘Belt and Road’ Green Industry]. http://finance.ifeng.com/a/20150310/13541886_0.shtml.

4Paradigm. (2021) 4Paradigm Completes USD 700 Million Series D Funding Round. https://en.4paradigm.com/content/details_10_480.html.

Albright, Z.C., Ray, R., Liu, Y.N. (2022) China-Latin America and the Caribbean: Economic Bulletin, 2022 Edition. *Boston University Global Development Policy Center*. April 24.

Babones, S., Åberg, J.H.S., Hodzi, O. (2020) China’s Role in Global Development Finance: China Challenge or Business as Usual? *Global Policy* 11(3): 326–35. https://doi.org/10.1111/1758-5899.12802.

Barisitz, S. (2020) “New Silk Road—A Geo-Economic Assessment with a Focus on the European Region” in *China and the New Silk Road: Challenges and Impacts on the Regional and Local Level*, H. Pechlaner, G. Erschbamer, H. Thees, M. Gruber (Eds.). Springer International Publishing. https://doi.org/10.1007/978-3-030-43399-4_5.

Brautigam, D. (2015) Mysteries of the China Africa Development Fund. http://www.chinaafricarealstory.com/2015/03/is-cad-fund-sovereign-wealth-fund.html.

Boston University Global Development Policy Center. (2022) China’s Global Energy Finance Database. https://www.bu.edu/gdp/.

China.org.cn. (2019) Green Ecological Silk Road Investment Fund. September 6. https://www.world-energy.org/article/1623.html.

China Development Bank Capital. UAE-China Joint Investment Cooperation Fund. Accessed August 25, 2022. https://www.cdb-capital.com/GKJR/fundprojectcaseen/17102014522811?pidx=0.

Clark, P., Monk, A. (2015) Sovereign Development Funds: Designing High-Performance, Strategic Investment Institutions. SSRN Scholarly Paper. https://doi.org/10.2139/ssrn.2667974.

Embassy of the People’s Republic of China in the Republic of Ghana. (2018) Full Text of Chinese President Xi’s Signed Article on UAE Media. https://www.mfa.gov.cn/ce/cegh//eng/zgyw/t1578517.htm.

Finance in Common (FIC). (2022) What are public development banks? https://financeincommon.org/why-finance-in-common#what-are-public-development-banks.

He, A. (2020) The Belt and Road Initiative: Motivations, Financing, Expansion and Challenges of Xi’s Ever-Expanding Strategy. *Journal of Infrastructure, Policy and Development* 4, no. 1: 139–69. https://doi.org/10.24294/jipd.v4i1.1180.

Hu, B. (2019) Belt and Road Initiative: Five Years on Implementation and Reflection. *Global Journal of Emerging Market Economies* 11, no. 1–2: 1–10. https://doi.org/10.1177/0974910119871377.

Kaplan, S.B. (2021) *Globalizing Patient Capital: The Political Economy of Chinese Finance in the Americas*. Cambridge: Cambridge University Press. https://doi.org/10.1017/9781316856369.

International Monetary Fund (IMF). (2022) List of LIC for PRGT-Eligible Countries as of August 29, 2022. https://www.imf.org/external/Pubs/ft/dsa/DSAlist.pdf

Lee, K., Synetos, K. (2018) The emergence of long-term capital in private equity. *INSEAD*. https://www.insead.edu/sites/default/files/assets/dept/centres/gpei/docs/insead-isp-the-emergence-of-long-term-capital-in-private-equity-jun-2018.pdf.

Li, H. (2020) From Politics to Business: How a State-Led Fund Is Investing in Africa? *Boston University Global Development Policy Center*.

Li, Y., Zhu, X. (2019) The 2030 Agenda for Sustainable Development and China's Belt and Road Initiative in Latin America and the Caribbean. *Sustainability* 11, no. 8: 2297. https://doi.org/10.3390/su11082297.

Ministry of Ecology and Environment of the People's Republic of China (MEE). (2020) Guānyú Cùjìn Yìngduì Qìhòu Biànhuà Tóu Róngzī de Zhǐdǎo Yìjiàn 关于促进应对气候变化投融资的指导意见 [Guidance on Promoting Investment and Financing for Responding to Climate Change]. https://www.mee.gov.cn/xxgk2018/xxgk/xxgk03/202010/t20201026_804792.html.

Ministry of Foreign Affairs of the People's Republic of China (MFA). (2019) List of Deliverables of the Second Belt and Road Forum for International Cooperation-Belt and Road Portal. https://eng.yidaiyilu.gov.cn/qwyw/rdxw/88228.htm.

Ministry of Foreign Affairs of the People's Republic of China (MFA). (2021) "Forum on China-Africa Cooperation Dakar Action Plan (2022-2024). https://www.fmprc.gov.cn/mfa_eng/wjdt_665385/2649_665393/202112/t20211202_10461183.html.

Malloch-Brown, M. (2022) The Global South's Looming Debt Crisis—and How to Stop It. *Foreign Policy*. https://foreignpolicy.com/2022/03/16/global-south-sovereign-debt-crisis-covid-economy-imf-reform/

Michelitsch, R., Soriano, A., Cuestas, E., Funes Aguilera, R., Churanek, D., Sadeghi, P., Glen, J. (2017) Comparative Study of Equity Investing in Development Finance Institutions. https://policycommons.net/artifacts/305983/comparative-study-of-equity-investing-in-development-finance-institutions/1223761/.

Mubadala. (2015) Mubadala Development Company, China Development Bank Capital (CDBC), and China's State Administration of Foreign Exchange (SAFE) Establish UAE-China Joint Investment Fund. https://www.mubadala.com/en/news/mubadala-development-company-china-development-bank-capital-cdbc-and-chinas-state.

Mubadala. (2018) Sovereign Investment Partnerships. https://www.mubadala.com/en/what-we-do/capital/sovereign-investment-partnerships.

Myers, M., Ray, R. (2022) What role for China's policy banks in LAC? *Boston University Global Development Policy Center* and *The Dialogue*, 10.

National Development and Reform Commission (NDRC). (2022) Guānyú Tuījìn Gòng Jiàn 'Yīdài Yīlù' Lǜsè Fāzhǎn de Yìjiàn 关于推进共建'一带一路'绿色发展的意见 [Opinions on Promoting the Green Development of the Belt and Road Initiative]. https://www.ndrc.gov.cn/xxgk/zcfb/tz/202203/t20220328_1320629_ext.html.

Pardo, R.P. (2018) Europe's Financial Security and Chinese Economic Statecraft: The Case of the Belt and Road Initiative. *Asia Europe Journal* 16 , no. 3: 237–50. https://doi.org/10.1007/s10308-018-0511-z.

Ray, R., Gallagher, K.P., Kring, W., Pitts, J., Simmons, B.A. (2021) Geolocated Dataset of Chinese Overseas Development Finance. *Scientific Data* 8, no. 1: 241. https://doi.org/10.1038/s41597-021-01021-7.

———. (2021) Geolocated Dataset of Chinese Overseas Development Finance. *Boston University Global Development Policy Center*. https://doi.org/10.17605/OSF.IO/7WUXV.

Sheng, Jin. (2021) "Asia's two financial hubs and sovereign funds" in *Alternative Development Finance and Parallel Development Strategies in the Asia-Pacific: Racing for Development Hegemony?* Asian Commercial, Financial and Economic Law and Policy. Northampton: Edward Elgar Publishing.

Silk Road Fund. Overview. Accessed August 25, 2022. http://www.silkroadfund.com.cn/enweb/23775/23767/index.html.

Silk Road Fund. (2018) Silk Road Fund entered into a participation agreement with Asian Infrastructure Investment Bank (AIIB) for Oman's National Fiber Optic Broadband Network Project. http://www.silkroadfund.com.cn/enweb/23809/23812/37556/index.html.

Silk Road Fund. (2022) Silk Road Fund participated in the acquisition of 49% equity of ARAMCO gas pipelines company. http://www.silkroadfund.com.cn/enweb/23809/23812/42569/index.html.

Silk Road Fund. (2015) The Silk Road Fund and China Three Gorges Corporation cooperate to invest in a hydropower project in Pakistan. http://www.silkroadfund.com.cn/enweb/23809/23812/26911/index.html.

US-UAE Business Council. (2017) Council Report: The Creation of Mubadala Investment Company. https://www.usuaebusiness.org/wp-content/uploads/2017/03/Mubadala-Report-Final.pdf.

WenBin, H., Wilkes, A. (2011) Analysis of China's overseas investment policies. *CIFOR Working Paper*, no. 79. https://www.cabdirect.org/cabdirect/abstract/20123099258.

World Wildlife Fund. (2018) Greening the Belt and Road Initiative. https://www.sustainablefinance.hsbc.com/mobilising-finance/greening-the-belt-and-road-initiative.

Xu, J., Marodon, R., Ru, X. (2020) Identifying and classifying public development banks and development finance institutions. https://www.nse.pku.edu.cn/docs/20201111104426528779.pdf.

Xu, J., Ren, X., Wu, X. (2019) Mapping Development Finance Institutions Worldwide.

Ye, M. (2020) *The Belt Road and Beyond: State-Mobilized Globalization in China: 1998–2018*. Cambridge: University Press. https://doi.org/10.1017/9781108855389.

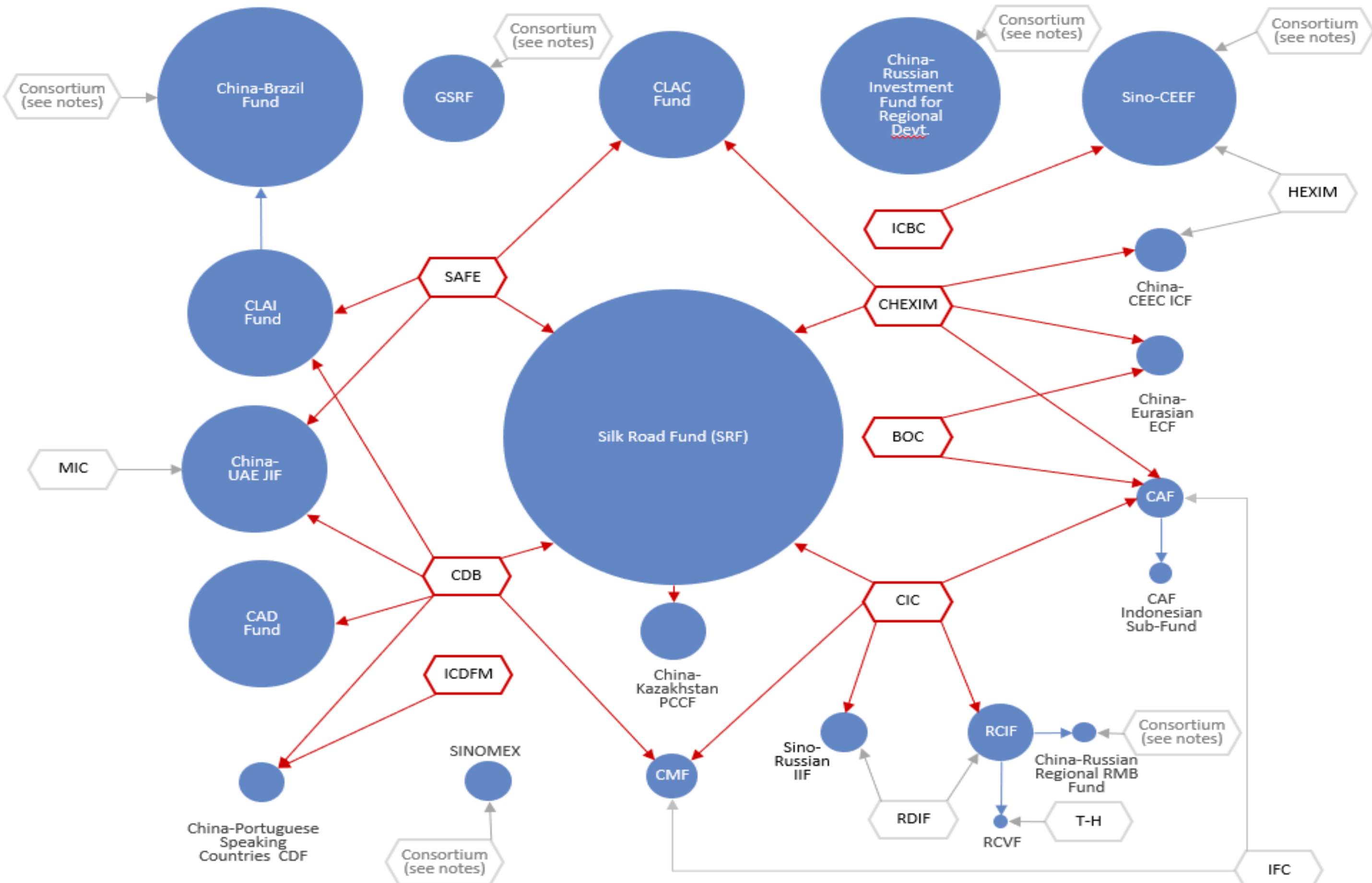
Yii, J., Zuokui, L. (2019) Financial Cooperation between China and CEEC: Development and Prospective. *Global Economic Observer*, no. 1. https://ideas.repec.org/a/ntu/ntugeo/vol7-iss1-258.html.

Zhu, W. (2015) PE Fund to Bring Green Sheen to Silk Road." *China Daily*. http://www.chinadaily.com.cn/m/gansu/2015-03/12/content_19831265.htm.

APPENDIX

In order to trace relationships between shareholders that support multiple funds in our dataset, Figure A1 below maps the funds in our dataset, with the area of each blue circle representing fund capitalization amount. The red hexagons show Chinese banks and/or FOREX management offices, while the grey hexagons are other shareholder types, including foreign banks and consortiums representing multiple shareholders. Figure A1 also shows relationships between funds and sub-funds, or funds that capitalize other funds (e.g., RCIF). Full information on shareholders tracked in our data is presented in Table A1.

Figure A1: Shareholder Mapping



Source: Authors' visualization.

Table A1: China's Overseas Development Investment Fund Information

Fund Name	Fund or Subfund	Fund Type	Capitalization as of 2022 (USD bill)	Names of Shareholders	Year Established	Target Region	Single Country Fund?	Target Sector(s)	Financing Instrument(s)
Brazil-China Cooperation Fund for the Expansion of Productive Capacity (China-Brazil Fund) (Sub-fund of the CLAI Fund)	Fund	JIF	20	CLAIFund; Caixa Econômica Federal (Caixa); National Economic and Social Development Bank (BNDES)	2017	Brazil	Yes	Technology, Energy and Resources, Agriculture	Equity; debt
CAF Indonesian Sub-Fund (Sub-fund of CAF)	Subfund	JIF	0.25	CAF		Indonesia	Yes	NA	Equity
China - ASEAN Investment Cooperation Fund (CAF)	Fund	JIF	1	CHEXIM; CIC; BOC; IFC;	2010	Southeast Asia	No	General Infrastructure, Energy and Resources	Equity
China-Africa Development Fund (CAD Fund)	Fund	SDF	10	CDB;	2007	Africa	No	Agriculture, Manufacturing, General Infrastructure, Energy and Resources	Equity
China-Central and Eastern Europe Investment Cooperation Fund (CHEXIM led) (China-CEEC Investment Cooperation Fund)	Fund	PEF	1.24	CHEXIM; Hungarian EXIM Bank; SRF; CEE Equity Partners Ltd.	2013	Europe & Central Asia	No	General Infrastructure, Technology, Energy and Resources, Manufacturing, Social Sector	Equity; debt
China-Eurasian Economic Cooperation Fund	Fund	PEF	1	CHEXIM; BOC	2014	Europe & Central Asia	No	General Infrastructure, Technology, Energy and Resources, Manufacturing, Social Sector	Equity; debt
China-LAC Cooperation Fund (CLAC Fund)	Fund	PEF	10	CHEXIM; SAFE	2016	Latin America & the Caribbean	No	Energy and Resources, Green Development, General Infrastructure, Agriculture, Manufacturing, Technology	Equity
China-LAC Industrial Cooperation Investment Fund / CLAIFUND / China-LA Production Capacity Cooperation Investment Fund (CLAI Fund)	Fund	SDF	10	SAFE; CDB;	2015	Latin America & the Caribbean	No	Manufacturing, Technology, Agriculture, Energy and Resources, General Infrastructure, Financial Sector	Equity; debt

Fund Name	Fund or Subfund	Fund Type	Capitalization as of 2022 (USD bill)	Names of Shareholders	Year Established	Target Region	Single Country Fund?	Target Sector(s)	Financing Instrument(s)
China-Mexico Fund	Fund	JIF	1.2	IFC; CIC; CDB; FON-ADIN; NAFIN'	2014	Mexico	Yes	General Infrastructure, Energy and Resources, Manufacturing, Agriculture, Financial Sector	Equity; debt
China-Portuguese Speaking Countries Cooperation and Development Fund	Fund	SDF	1	CDB; Industrial and Commercial Development Fund of Macao;	2013	Global	No	Agriculture, Manufacturing, General Infrastructure, Financial Sector	Equity
China-Russia Investment Fund for Regional Development	Fund	PEF	15.14	China National Power Investment Corporation (SPIC); China National Nuclear Corporation (CNNC); China Machinery and Equipment Engineering Corporation Limited (CMEC)"	2018	Europe & Central Asia	No	Energy and Resources, Agriculture, General Infrastructure	Equity; debt
China-Russia Regional RMB Fund	Fund	JIF	0.15	RCIF; Suiyong Capital; Dazheng Investment Group	2019	Russia	Yes	Energy and Resources, Financial Sector, Manufacturing, Social Sector, Technology	Equity
China-UAE Joint Investment Fund	Fund	JIF	10	CDB; SAFE; Mubadala Investment Company	2015	Global	No	General Infrastructure, Energy and Resources, Manufacturing, Green Development	Equity
Russia-China Investment Fund (RCIF)	Fund	PEF	2	CIC; RDIF	2012	Europe & Central Asia	No	General Infrastructure, Agriculture, Energy and Resources, Consumer Goods and Services	Equity
Russia-China Venture Fund (RCVF)	Fund	JIF	0.1	RCIF; Tus-Holdings	2016	Russia	Yes	Financial Sector, Technology, Green Development	Equity

Table A1: China's Overseas Development Investment Fund Information (continued)

Fund Name	Fund or Subfund	Fund Type	Capitalization as of 2022 (USD bill)	Names of Shareholders	Year Established	Target Region	Single Country Fund?	Target Sector(s)	Financing Instrument(s)
Silk Road Fund	Fund	SDF	54.5	CHEXIM; CDB; CIC; SAFE	2014	Global	No	General Infrastructure, Energy and Resources, Capacity Building, Financial Sector	Equity; debt
Sino-CEE Investment Fund / China-Central and Eastern European Fund (ICBC led) (Sino-CEEF)	Fund	PEF	11.15	ICBC; Hungarian Exim bank; China Life; Fosun Group; Royal Eagle Group;	2016	Europe & Central Asia	Yes	General Infrastructure, Manufacturing, Consumer Goods and Services	Equity; debt
Sino-Mex Energy Fund (SINOMEX)	Fund	JIF	1	PEMEX's P.M.I. Holdings B.V.; Xinxing Ductile Iron Pipes Co., Ltd.; China Merchants Group; Honghua Group Limited	2014	Mexico	Yes	Energy and Resources	Equity; debt
Sino-Russian Innovation Investment Fund / Russia-China Technology Investment Fund L.P.	Fund	JIF	1	RDIF; CIC	2019	Russia	Yes	Technology	Equity
The China-Kazakhstan Production Capacity Cooperation Fund (Sub-fund of SRF)	Subfund	SDF	2	SRF	2016	Kazakhstan	Yes	Manufacturing	Equity
The Green Ecological Silk Road Investment Fund/ Green Silk Road Fund (GSRF)	Fund	PEF	4.8	Elion Resources Group; Ping An Bank; China Oceanwide Holdings Group Co Ltd; Chint Group; Huiyan Juice; Macrolink; JuneYao; Administrative Committee of the Sino-Singapore Tianjin Eco-City	2015	Global	No	Green Development	Equity

Source: Authors' compilation

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