

# China Comprehensive Direct Investment Tracking (CDIT)

## Methodology



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## Introduction

Over the past decades, China has forged complex international economic linkages through trade, foreign direct investment (FDI), and other cross-border flows. These linkages have brought significant commercial opportunities for partner economies but also created new national security and economic risks. Policymakers have been updating their regulatory toolboxes to respond to these challenges, including foreign investment reviews, export controls, and sanctions.

As policymakers navigate these “de-risking” challenges, China’s external economic flows are changing in response to both China’s domestic policy choices under President Xi Jinping and a less accommodating international environment. Some external flows have declined rapidly, while others are on the rise. Amid this growing volatility of China’s global economic activity, there is a pressing need for objective data and analysis of the nature, scope, and trajectory of China’s international economic ties. Policymakers need accurate data to chart a course that mitigates risks while not tearing down interaction in areas that are worth preserving. Unfortunately, official statistics cannot fulfill those requirements. International economic statistics have well-documented gaps and flaws, China’s official data is increasingly opaque, and many host economies have poor statistical capacity. Think tanks and research providers have produced alternative datasets on specific types of flows, but these efforts remain fragmented and often behind paywalls, which limits their utility.

Rhodium Group’s China Cross-Border Monitor (CBM) provides transactions-based data as a complement to official statistics on China’s global presence. The first public CBM offering is a novel dataset that captures global outbound FDI transactions by ultimately Chinese-owned entities and residents. It is based on the proprietary China Comprehensive Direct Investment Tracking (CDIT) methodology.

This paper describes the CDIT methodology, clarifies data dissemination and governance, and compares the output with other data sources.

## Scope and coverage

This section briefly reviews the key characteristics of FDI and available data on Chinese OFDI before describing the scope of the China CDIT dataset, the underlying data framework, and the process for data collection and maintenance.

### Definition and components of FDI

FDI is a specific **category of cross-border capital flows** within the System of National Accounts (SNA) set of standards for measuring economic activity used by the International Monetary Fund (IMF), the Organization for Economic Co-operation and Development (OECD), and other international organizations. In national account statistics, cross-border investment flows are commonly separated into five categories: direct investment, portfolio investment, financial derivatives, other investment, and reserve assets.<sup>1</sup>

Direct investment entails cross-border capital flows that **achieve significant influence over the management of an invested entity and a long-term investment relationship**. The common threshold for a direct investment is 10% of voting shares. Portfolio investment entails a typically shorter-term investment in liquid securities with no control, such as holdings of equity shares with less than 10% of voting rights or corporate debt instruments. Derivatives refer to financial instruments such as swaps, futures, and options, which are only contractually related to the underlying value of real assets such as firms or commodities. Other investments entail all flows that do not fall under the previous categories such as foreign bank deposits, currency holdings, cross-border loans, or trade credits. Lastly, reserves are liquid instruments held by governments or central banks in the form of gold, foreign exchange, or special drawing rights at the IMF.<sup>2</sup>

FDI flows generally include **three components**: equity investment, reinvested earnings, and other capital flows. A direct investment relationship usually starts with an equity injection into an overseas company, to either establish a new overseas subsidiary (greenfield investments) or acquire a significant stake, greater than 10%, in an existing company (acquisitions). All subsequent capital flows between the parent company and foreign subsidiary are counted as direct investment, including profits that are reinvested in the subsidiary (reinvested earnings) and other capital flows between the two firms (such as intercompany debt or transfers between parent company and subsidiary).<sup>3</sup> Retained earnings are counted as additional FDI as long as profits are kept in the subsidiary abroad and not repatriated to the parent company.

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<sup>1</sup> See the IMF (2009); the IMF definitions also are accepted by other international organizations such as the OECD and UNCTAD.

<sup>2</sup> See IMF (2009).

<sup>3</sup> Detailed information on the nature of direct investment and its measurement can be found in the IMF Balance of Payments Manual, IMF (2009), and OECD's Benchmark Definition of Foreign Direct Investment, OECD (2008).

## Sources for global FDI data

**International SNA statistics compiled by national governments and disseminated by the IMF** usually capture two types of FDI statistics: flows and stocks.<sup>4</sup> FDI flows refer to the value of investments made during a specific period—typically a year, quarter, or month. Data on FDI flows are generally positive, which indicates additional investment, but could also be negative if reverse flows—such as withdrawal of investment and substantial repayment of intercompany debt—exceed new investments made during the period. Data on FDI flows are primarily disclosed in a country’s balance of payments (BOP).

FDI stock generally refers to the total value of direct investment at a given time. Stock data are primarily disclosed in a country’s international investment position (IIP). Under international standards, FDI stock should in principle reflect current market prices, which means that changes in FDI stocks from period to period are affected by the level of flows as well as changes in exchange rates and valuation. In practice, however, FDI stock is often published at historical value, partially because direct investments often involve ownership interests in intangible assets or assets with unusual qualities whose current value is difficult to determine.<sup>5</sup>

Aside from the aggregate FDI statistics in the national BOP/IIP statistics, some **governments also publish additional data series on inbound and outbound FDI**. Many countries do not only collect aggregate data but publish more granular statistics on bilateral FDI flows, which are disseminated by the IMF through its Coordinated Direct Investment Survey (CDIS).<sup>6</sup>

**International organizations** such as the OECD<sup>7</sup> or UNCTAD<sup>8</sup> have programs in place that provide time series data on global FDI flows. Most of these data points are reported by governments, but some organizations produce datasets that are timelier and more comprehensive than what is available from national governments.

Some **national statistical agencies also collect data on the value of new FDI investments**, for example the BEA’s dataset on new foreign direct investment from first year expenditures.<sup>9</sup> Some governments also have surveys in place that collect operational data for FDI enterprises or multinational corporations (such as revenue, profit, employees, industries, and activities), for example the BEA’s data on direct investment and multinational enterprises (MNEs) or Eurostat’s foreign affiliates statistics (FATS)<sup>10</sup> data. However, these datasets are not coordinated and follow different approaches, thresholds, and timelines.

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<sup>4</sup> See IMF(2009).

<sup>5</sup> See Kozłow (2002).

<sup>6</sup> See IMF CDIS (2023).

<sup>7</sup> See OECD FDI Flows (2023).

<sup>8</sup> See UNCTAD (2023).

<sup>9</sup> See BEA (2023).

<sup>10</sup> See Eurostat (2024).

## Available data for Chinese outbound FDI

CDIT came about because available data on China's OFDI is not granular or high-quality enough to address business and policy challenges.

**Official FDI data from China's government** are heavily distorted by China's external economic configuration and shortcomings in its statistical data collection. Historically, Chinese companies had a strong incentive to route overseas investments through holding companies in Hong Kong and other offshore locations. China's government does not have the capacity to track OFDI to its ultimate destination, which results in two thirds of China's official OFDI stock being attributed to Hong Kong and other offshore financial centers. Another important distortion is that capital controls incentivize firms and other PRC residents to route non-FDI capital flows through the FDI channel. This causes outbound FDI flows to heavily correlate with the movement of exchange and interest rates, suggesting that PRC residents are using these channels increasingly for financial portfolio optimization, rather than real economy investment. These distortions and the lack of reliable granular data by country, industry, and investor type make it challenging to obtain a clear and accurate understanding of OFDI flows from Chinese official statistics.

**Commercial data providers** offer useful perspectives on certain aspects of Chinese OFDI, but they are limited to a specific area and mostly behind paywalls. Global business databases such as Dun & Bradstreet offer granular data on Chinese overseas businesses, but their quality often varies based on the availability of local corporate registration data and they generally do not attribute nationality well. They also typically only provide information on registered capital but not on actual investment values. Other commercial data providers offer data on specific types of FDI transactions—fDi Markets for greenfield FDI or Bloomberg and PitchBook for M&A—but their scope is limited, their geographic coverage is biased toward the OECD, and they mostly capture announced transaction values, which usually tend to be too high. A new crop of OSINT data providers, such as RWR or Datenna, has emerged in recent years, but their coverage is biased toward national security-relevant areas or diffuse concepts, such as China's Belt and Road Initiative.

**Open-source datasets provided by think tanks and academic researchers** are a useful complement to official data and commercial datasets, but their quality varies greatly and many of them have been discontinued. Some of them, such as AEI and the Heritage Foundation's China Global Investment Tracker, only cover large transactions and mix FDI data with other types of cross-border transactions like contracts or lending. Others, such as the Chinese Investment in Australia (CHIIA) database and APF Canada Investment Monitor have more comprehensive coverage, but they seem to have ceased operation in recent years due to the lack of funding.



TABLE 1  
**Overview of available data on Chinese outbound FDI**

Source type	Provider	Coverage
Official authorities	<a href="#">PRC Ministry of Commerce</a>	Outbound FDI based on administrative records
	<a href="#">PRC SAFE</a>	Outbound FDI based on BPM6 Methodology
	<a href="#">Host Country Statistical Authorities</a>	Chinese Inbound FDI based on BPM/other methodologies
Commercial providers for global corporate information	Orbis, D&B, Sayari, fDi Markets, etc.	Global establishment and relationship data, including subsidiaries
Commercial providers for OSINT on Chinese companies/persons	RWR, Strider, Kharon, Datenna, etc.	New solutions to map the domestic and overseas footprint of Chinese entities and their ownership/subsidiaries for due diligence purposes
Think tank/academic projects on China's outbound FDI	<a href="#">AEI</a> , <a href="#">Alberta University</a> , <a href="#">CHIA</a> , <a href="#">Red ALC China</a> , etc.	Coverage of Chinese OFDI in certain jurisdictions

Source: Rhodium Group CDIT compilation.

## CDIT scope and principles

Recognizing these gaps, Rhodium Group's China CDIT dataset was built to provide a comprehensive and high-quality perspective on China's global outbound FDI based on the following principles:

First, **the CDIT dataset tracks outbound FDI transactions by mainland Chinese residents and nationals**. We are applying the ultimate beneficiary ownership principle, trying to capture any investments that can ultimately be traced back to an owner that is either a resident or national of the PRC. Conversely, we try to always capture the ultimate investment destination, which means discounting the investment value for holding companies in offshore financial centers. We always try to compute the local impact in the ultimate host country and exclude transshipping noise.

Second, **transactions covered by CDIT closely match internationally recognized FDI standards**. In accordance with common international standards, FDI transactions are defined as greenfield projects or acquisitions of stakes in existing companies that exceed 10% of voting shares. Expansions of existing facilities and joint ventures where mainland Chinese ownership equals or exceeds 10% are also recorded. The transaction-based approach, however, does not capture certain types of financial flows between parent

companies and FDI affiliates that are captured in BOP accounting but not associated with new investments, for example intra-company transfers and reinvested earnings. On the flip side, we have a more expansive coverage than traditional FDI data—we not only cover overseas investments by PRC residents but also global investments by PRC nationals that may reside in the respective economy (mostly relevant for Micro FDI Transactions).

Third, **our accounting is based on recording individual transactions at historical value.** Transaction values are either reported by transaction parties or estimated by our analysts based on rigorous methodology grounded in historical benchmark data (see Section 2). Our aggregated numbers represent the cumulative value of transactions at historical value without current cost or market value adjustments. FDI asset divestitures are included at the time of divestment but at the original historical value the asset was purchased at.

Fourth, **we try to overcome known coverage gaps by estimating missing transactions in certain regions and industries based on a transparent methodology.** We aim to create globally comparable data, which means that we are deploying innovative data collection and estimation approaches to capture previously under-covered countries and transaction types, like smaller-scale greenfield projects and micro businesses (see Section 2 for more details).

Fifth, **we strive to maximize the analytical utility of our dataset by adding innovative data fields and features that policy and business analysts need and official datasets often lack.** We have introduced innovative features, including multi-year logging for large greenfield projects, tagging for business activities, and tagging for policy- and business-relevant investor characteristics.

Sixth, **the CDIT dataset is forward-looking and dynamic.** Our framework is designed in a modular way that allows the integration of new transactions in the future as well as the absorption of additional historical data for specific countries, industries, or types of transactions. We have established a rigorous and transparent system to document changes to the database and explain differences across database versions (see Section 3).

## CDIT dataset architecture

The CDIT dataset consists of four separate datasets that interact with each other (Table 2). Three datasets capture different types of FDI transactions based on their investment value, and the fourth dataset includes detailed information on the corporate entities and investors involved in these transactions.

**Dataset 1** captures **Major FDI Transactions**, which include acquisitions, greenfield projects, and expansions with investments above \$5 million that are verifiable through company disclosures, regulatory information, and other public sources. All transactions in this dataset have a confirmed source and have been reviewed by analysts. About 60% of transactions have a disclosed value and 40% have an estimated value.

**Dataset 2** captures **Small and Medium FDI Transactions**, which include acquisitions, greenfield projects, and expansions with investments between \$100,000 to \$5 million that are verifiable through company disclosures, regulatory information, and other public



sources. All transactions in this dataset have a confirmed source but not all have been reviewed by analysts. About 10% of transactions have a disclosed value and the remaining 90% have an estimated value.

**Dataset 3** captures **Micro FDI Transactions**, which include greenfield projects and micro businesses with investments of less than \$100,000 that are either sourced from business registries or estimated based on the total number of businesses in an economy and other variables that describe the extent of economic linkages with China. This dataset includes establishments by individuals with PR China nationality including hospitality, consumer goods, trading companies, e-commerce, shell companies, and other small establishments. Transaction values are mostly estimated based on available data points from business registries and other open-source information.

**Dataset 4** captures **Entities**, including Chinese investors, acquisition targets, and overseas subsidiaries. It allows us to capture relationships between investors and overseas affiliates across countries and industries and produce a comprehensive mapping of the overseas footprint of specific ultimate beneficial owners (UBOs).

TABLE 2  
Overview of CDIT data structure

Dataset name	Scope
<b>Dataset 1: Major FDI Transactions</b>	Acquisitions, greenfield projects, and expansions with investment above \$5 million that are verifiable through company disclosures, regulatory information, and other public sources.
<b>Dataset 2: Small &amp; Medium FDI Transactions</b>	Acquisitions, greenfield projects, and expansions with investment between \$100,000 and \$5 million that are verifiable through company disclosures, regulatory information, and other public sources.
<b>Dataset 3: Micro FDI Transactions</b>	Greenfield projects and micro businesses with investment of less than \$100,000 that are either sourced from business registries or estimated based on the total number of businesses in an economy and other variables that describe the extent of economic linkages with China.
<b>Dataset 4: Entities</b>	A comprehensive dataset of Chinese outbound investors and overseas affiliates.

Source: Rhodium Group CDIT.

## Data governance and dissemination

This section describes the governance of Rhodium's China CDIT data, the data dissemination through the China Cross-Border Monitor, and our process for database and methodology updates.

### Governance

Data on Chinese outbound FDI based on CDIT methodology is collected by Rhodium Group's China Data Services team. The methodology and data collection process is supervised by Rhodium Group's CDIT China Data Committee, which consists of partners and senior staff members across the firm's China practice. The committee meets regularly to review the scoring methodology to ensure it is up to date, transparent, and robust. It also consults external experts and researchers to stress test internal assumptions. The Committee reserves the right to implement methodological modifications based on the evaluation of new information and/or any relevant developments.

### Data access and dissemination

Rhodium Group's China CDIT data will primarily be disseminated through a designated data portal, the China Cross-Border Monitor (<http://www.cbm.rhg.com>).

Aggregate data will be available to the broader public through the CBM portal. The CBM portal also provides regular quarterly update notes as well as selected occasional notes and reports covering the topic of Chinese outbound FDI. Users can subscribe to our public CBM newsletter [through this link](#).

More granular data access will be disseminated to partners, clients and other stakeholders through the China Cross-Border Monitor Plus (CBM+). CBM+ access requires users to sign a data licensing agreement that protects the underlying data as well as documentation and non-public research materials. Access to CBM+ can be requested via [cbm@rhg.com](mailto:cbm@rhg.com).

### Data and methodology updates

Rhodium Group's CDIT data are updated on a quarterly basis. Each new data release will generally be published to CBM+ users during the second week of each quarter but may occur later in the case of unforeseen interruptions. Registered CBM+ users will receive customized email alerts and can view data updates immediately through the online portal. Public CBM users will receive access to updated data and quarterly update notes with a two-week delay.

The CDIT framework and methodology will also be periodically updated. Rhodium Group is constantly evaluating, refining, and improving CDIT's data pipelines and methodology to ensure the integrity and usefulness of the data. Rhodium Group is also constantly monitoring the availability of datasets and may be forced to respond to regulatory action that leads to the loss of access to previously available data and disclosures.

Updates to the China Cross-Border Monitor FDI Database and its underlying methodology will be communicated to CBM+ users through quarterly updates or separate email

notifications. Each database version and its accompanying documentation maintain a transparent version history, detailing changes in data coverage and methodology compared to previous versions. The version history is based on the following system:

- **Major Version (X.0.0):** Denotes a major release that includes significant changes, new features, or major improvements. For instance, the initial official release of the database is labeled as 1.0.0.
- **Minor Version (X.Y.0):** Signifies updates that introduce new data or features without making drastic changes to the database structure. For example, transitioning from 1.0.0 to 1.1.0 reflects the incorporation of additional historical data.
- **Patch Version (X.Y.Z):** Applied for smaller updates, such as bug fixes, minor data additions, or refinements. For instance, the update from 1.1.0 to 1.1.1 represents the addition of specific data and improvements in coverage.

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Rhodium Group is an independent research provider with deep expertise in policy and economic analysis. We help decision-makers in both the public and private sectors navigate global challenges through objective, original, and data-driven research and insights. Our key areas of expertise are China's economy and policy dynamics, and global climate change and energy systems. More information is available at [www.rhg.com](http://www.rhg.com).

## ABOUT THE CHINA CROSS-BORDER MONITOR

The China Cross-Border Monitor is a project of Rhodium Group's China practice to track China's overseas investments. Traditional methods of tracking overseas investment by Chinese companies are skewed by the use of tax havens and reinvested earnings, creating a skewed picture of China's overseas investments. Our transaction-based methodology tracks more than half a million individual investments worldwide, helping create a more transparent view of China's global investment footprint.

## DISCLOSURES

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