Asia and the Global Economy 5 (2025) 100124

Contents lists available at ScienceDirect

Asia and the Global Economy

journal homepage: www.journals.elsevier.com/asia-and-the-global-economy

Uneven partners: The regional dynamics of FDI flows between China and Russia

Nadia Doytch [a,c], Kiril Tochkov [b,*]

[a] CUNY- Brooklyn College and the Graduate Center, New York, United States
[b] Department of Economics, Texas Christian University, Fort Worth, Texas, United States
[c] Ateneo de Manila University School of Government, Manila, Philippines

ARTICLE INFO

JEL classification:
F21
F23
R12

Keywords:
Foreign direct investment
China-Russia relations
Regional determinants

ABSTRACT

This paper analyzes the regional determinants of bilateral FDI flows between China and Russia over the period 2003–2021, using project-level data from the *fDi Markets* database. We construct panels for both Chinese FDI in Russia and Russian FDI in China to examine how subnational characteristics shape investment patterns. The results reveal clear asymmetries: Chinese FDI in Russia is larger, more regionally dispersed, and concentrated in resource and infrastructure sectors. Russian FDI in China is more limited and focused on services in coastal provinces. While wages and marketization influence location decisions, geographic proximity and investor location within Russia have little explanatory power.

1. Introduction

Over the past two decades, the relationship between China and Russia has deepened significantly, evolving from pragmatic cooperation into a comprehensive strategic partnership. This geopolitical realignment has accelerated in recent years amid growing confrontation between China and the United States, on one hand, and the West's sanctions-driven disengagement from Russia, on the other. As China faces external pressures in global trade and Russia reorients its economy eastward, bilateral economic ties have become a critical channel of engagement. Despite bilateral agreements and high-profile state visits, the actual structure and depth of Sino-Russian economic integration remains uneven and underexplored.

This paper seeks to contribute to this debate by analyzing bilateral foreign direct investment (FDI) flows between China and Russia, with a specific focus on the regional distribution of these flows. In contrast to trade, where China has long been a dominant partner for Russia, bilateral FDI has evolved more slowly and asymmetrically. Because FDI reflects longer-term commitments by firms, it can serve as a litmus test of the depth and durability of the Sino-Russian strategic partnership. Patterns of bilateral investment thus provide valuable insights into whether the relationship extends beyond rhetoric and trade flows into more embedded forms of economic integration.

The literature on inward FDI in Russia at the regional level remains relatively limited, largely due to the lack of disaggregated data by source country after 2013. A number of studies have examined the subnational determinants of FDI across Russian regions, either using data aggregated across all source countries (Gonchar and Marek, 2014; Yukhanaev et al., 2014; Groznykh et al., 2019; Gurova, 2020) or incorporating characteristics of the investing countries (Mariyev et al., 2016). Other contributions focus on a single region (e.g., Kudryashova et al., 2020 on Volgograd) or an entire federal district (e.g., Minakir and Suslov, 2018 on the Far Eastern district). To the best of our knowledge, Malkina et al. (2017) is the only study to analyze the distribution of Chinese FDI across Russian regions, although its coverage is limited to 2011–2013. More recent work, such as Yang and Priede (2023), relies on the latest Chinese data to study FDI in Russia but does not address the regional dimension.

The literature on Russian investment in China is similarly limited. While many studies examine various aspects of inward FDI across Chinese provinces, most do not disaggregate flows by source country, and Russia is often excluded from the analysis due to the relatively small scale of its FDI (Boermans et al., 2011; Wei et al., 2022; Zhang, 2023).

The authors would like to thank Joseph Brada and the participants of the 2025 Asia Economic Community Forum (ACEF) Conference for helpful comments and suggestions. Doytch gratefully acknowledges financial support from the PSC-CUNY Grant # 68404-00 46 and U.S. Embassy Manila PAS Small Grants FY2019 Grant #20-PHL-APS (2021-2022).

* Corresponding author at: Department of Economics, Texas Christian University, Box 298510, Fort Worth, TX 76129, United States.
E-mail address: k.tochkov@tcu.edu (K. Tochkov).

https://doi.org/10.1016/j.aglobe.2025.100124
Received 1 November 2025; Accepted 2 November 2025
Available online 8 November 2025

Conversely, research on Russian OFDI seldom addresses China (Liuhto and Majuri, 2014; Liuhto, 2015; Izyumova and Krylova, 2017). Only a handful of studies focus specifically on Russian FDI in China, and these tend to cover earlier periods and lack a regional perspective. For instance, Gao (2012) and Zhang (2015) rely on pre-2011 aggregate data to explore the impact of Russian FDI in China on Sino-Russian trade, while Borisov and Popova (2018) provide a descriptive account of Russian firms' entry into the Chinese market.

Despite the extensive literature on FDI in both Russia and China, the regional dimension of bilateral FDI flows between the two countries remains largely underexplored, especially from a two-way, project-level perspective. This paper fills that gap by employing a novel dataset of bilateral FDI flows at the regional level, covering both Chinese investments in Russian regions and Russian investments in Chinese provinces. For both directions, we rely on firm-level, project-based data, which provides detailed information on investment amounts, company identities, sectors, project types, and job creation. We use Poisson Pseudo Maximum Likelihood (PPML) estimators with sector and year fixed effects in a gravity-like model and estimate the two panels separately to account for possible asymmetries in investment behavior. We then compare the determinants of Chinese and Russian outbound FDI flows to assess the extent to which they are driven by strategic, commercial, or geographic logic.

This paper makes several key contributions to the literature. First, we employ project-level data, which offers significant advantages over the aggregate balance-of-payments statistics used in earlier studies. By applying a uniform methodology to the collection of both Russian and Chinese data, we are able for the first time to directly compare bilateral FDI flows between the two countries, thereby avoiding inconsistencies stemming from different measurement and reporting standards. Second, the granularity of the data allows us to identify both source and destination regions, enabling a regional analysis of bilateral FDI flows that, to our knowledge, has not been undertaken in the existing literature. This regional perspective sheds light on determinants of FDI that are often obscured at the aggregate level. Third, we examine the characteristics of the investing firms themselves, providing a richer understanding of cross-border investment activities. Lastly, we employ state-of-the-art PPML estimators, in contrast to much of the existing literature, which is predominantly descriptive or relies on earlier methodologies such as fixed-effects OLS.

The remainder of the paper is structured as follows. Section 2 provides an overview of bilateral FDI stocks and flows between China and Russia. Section 3 outlines the methodological approach, while Section 4 details the data sources. Section 5 presents the empirical results, and Section 6 concludes.

2. Bilateral FDI between China and Russia: an overview

We begin our overview with Chinese OFDI to Russia, relying first on Chinese statistics.[1] Fig. 1 shows dramatic changes in both stock and flows over the past two decades. From a low base of less than $100 million in the early 2000s, the stock rose rapidly to a peak of $14 billion in 2014, placing Russia ninth worldwide among destinations of China's ODI stock. Since 2019, the stock has been on a downward trend, settling at $10.7 billion in 2023 and lowering Russia's rank to 18th. The corresponding flows (i.e., net annual additions) are much more volatile, revealing a surge around 2015, negative values in 2019 and 2021, and a modest rebound in 2023. Taken together, the two panels depict rapid accumulation through the mid-2010s, followed by a net erosion of the stock in more recent years.

In the early 2000s, the Chinese government began implementation of its "Going Global" policy, which encouraged domestic firms to invest abroad by offering financial support from policy banks, streamlining approval and foreign exchange procedures, and providing legal guidance and diplomatic backing (Luo et al., 2010). Over the same period, Russia experienced an economic boom fueled by high commodity prices, making the country an attractive destination for Chinese investment. After 2009, large state-backed deals accelerated the momentum, the largest of which was the purchase by the China National Petroleum Corporation (CNPC) of a 20 % stake in the Russian Yamal LNG project in 2013, which was valued at around $1 billion (Henderson and Yermakov, 2019). Furthermore, Russia's WTO accession in 2012 improved rule predictability, while the launch of China's Belt and Road Initiative in 2013 provided strategic cover for infrastructure investments across Eurasia.

The post-peak moderation and eventual decline in Chinese ODI in Russia is consistent with shifts on both sides of the relationship. On the Russian side, the 2014–2016 oil price collapse, sharp ruble depreciation, and the 2015 recession compressed expected returns and raised macroeconomic risk, while successive rounds of Western sanctions beginning in 2014 and expanding after 2022 complicated financing, technology access, payments, and profit repatriation. On the Chinese side, authorities tightened outbound investment in 2016–2017 to manage capital flows, reducing ODI globally (Liu and Qian, 2021), while the pandemic (2020–2022) disrupted deal making, project execution, and cross-border travel. Since 2022, heightened compliance and secondary-sanctions risk has further constrained Chinese banks and firms, particularly in the energy and financial sectors.

Next, we explore Chinese FDI in Russia using Russian statistics. Fig. 2 depicts stock and flows in quarterly frequency over the period 2005–2021. A methodological break in the stock statistics means that the two series before and after 2014 are not directly comparable (see Section 4 for more details). Nevertheless, the pattern that emerges is similar to the one in Fig. 1 showing a rapid increase in Chinese FDI in the 2000s and 2010s, followed by a gradual decline after 2018. The large spike in the FDI flows is due to the CNPC's Yamal LNG stake but it appears in the first quarter of 2014, while Chinese statistics place it in 2013. More importantly, the drastic difference in the FDI magnitudes between Chinese and Russian statistics is striking. Chinese sources report a stock of between $10-$14 billion over the past decade, versus $2-$4 billion in Russian data. This misalignment stems from differences in partner-allocation rules. Chinese statistics attribute ODI by the first investment destination but make an exception for conduit economies like Bermuda, Cayman Islands, and British Virgin Islands (BVI), in which case the next country with a "substantive overseas enterprise" (i.e., one that has employees and an office) is listed as the destination. By contrast, Russian statistics attribute FDI by the immediate investor country. As a result, Chinese ODI is much higher (and more accurate) because it includes all Chinese investments in Russia, even if they have been routed via conduits. Russia's inward FDI from China, on the other hand, reflects only inflows from China directly. Unsurprisingly, conduit hubs like Cyprus, Bermuda and BVI dominate Russia's inward-FDI rankings on an immediate-investor basis, whereas China typically sits in the high teens (often 18th-19th during the late 2010s).

Fig. 3 illustrates the sectoral composition of China's ODI in Russia.[2] Chinese investors have primarily targeted natural resources and manufacturing sectors. From 2007 through the early 2010s, agriculture and forestry accounted for approximately 25 % of total Chinese ODI in Russia, while manufacturing maintained a share of 10–12 % and mining hovered between 10–15 %. Starting around 2013, the combined share of these three sectors surged to 70–80 %, driven largely by a sharp rise in mining investment. Specifically, the mining sector alone expanded to comprise 40–48 % of Chinese ODI. Manufacturing saw a brief spike

[1] We use the term *outward FDI (OFDI)* when data on investment outflows is reported by the source country, and *inward FDI* when data on inflows is reported by the destination country.

[2] This analysis relies on Chinese data as the Bank of Russia does not report the sectoral composition of inward FDI by partner country.

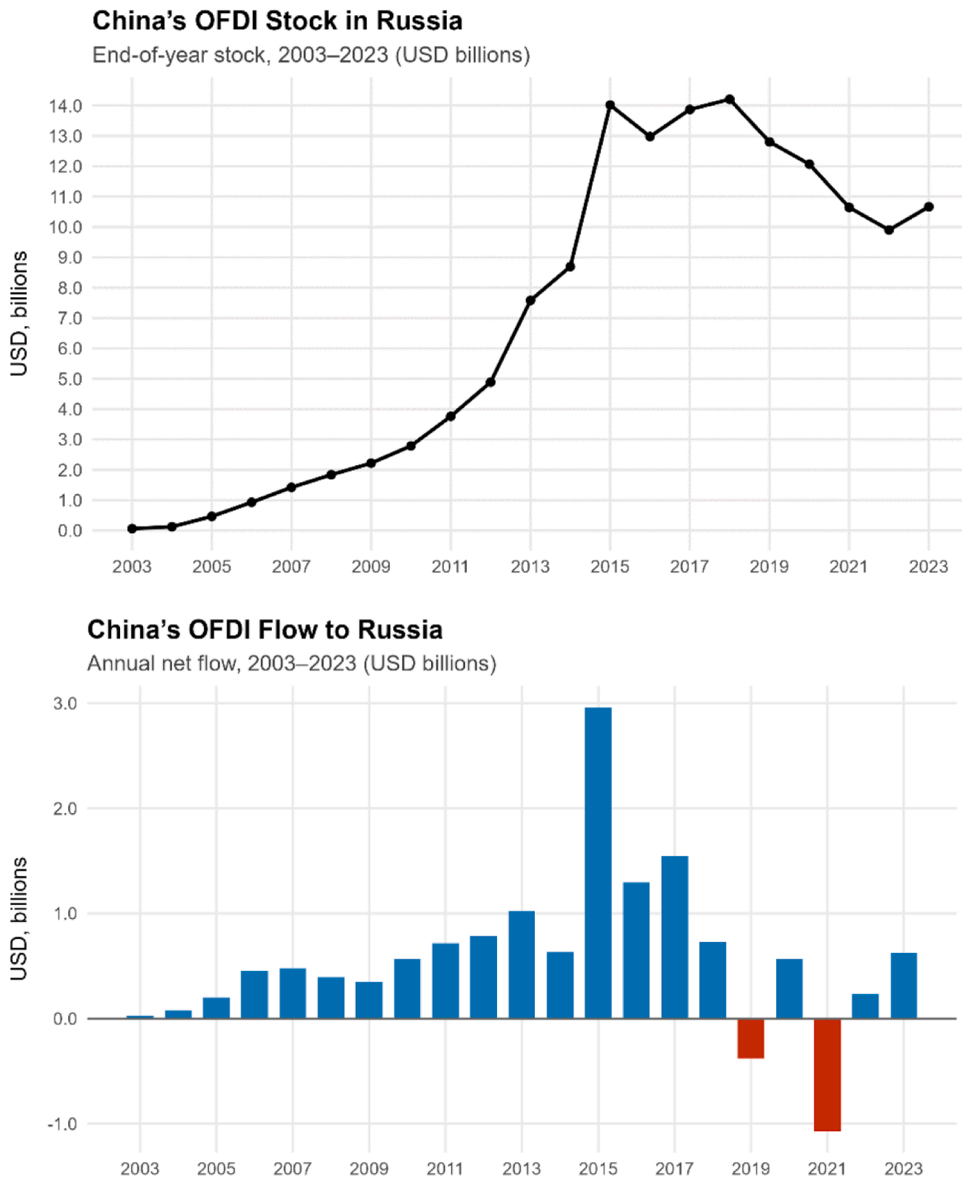

Fig. 1. China's OFDI in Russia, 2003–2023.
Source: Authors' compilation from China's Ministry of Commerce et al. (various years).

during 2013–2014, reaching over 30 %. However, its share has declined to a more stable 12 % in recent years. Meanwhile, agriculture and forestry have maintained a consistent presence, contributing roughly 20–25 % of total investment.

The spatial distribution of Chinese FDI in Russia shown in Fig. 4 is based on the legacy data series from the Russian statistical authorities, prior to the adoption of the BPM6 standard in 2013. Despite the methodological limitations of this earlier dataset, it reveals important insights. In the second half of the 2000s, Chinese FDI was predominantly directed toward the Northwestern Federal District, particularly the city of St. Petersburg. Over time, however, a marked geographic reorientation took place. Investment increasingly shifted toward the Central Federal District (which includes Moscow), as well as the Siberian and Far Eastern Federal Districts, both of which are rich in natural resources. By 2013, these three districts collectively accounted for over 70 % of all Chinese FDI in Russia.

Our focus now shifts to Russian FDI in China. As illustrated in Fig. 5, data from Chinese sources indicate relatively modest levels of utilized capital, especially when compared to other major investor countries. In the early 2000s, during a period of strong economic growth in Russia, annual OFDI flows surged from approximately $20 million to a peak of $125 million, before declining sharply. Since 2014, utilized capital has shown considerable volatility, with a general downward trend culminating in a value of $30.6 million in 2023. At the same time, Russia's cumulative FDI stock in China increased from $10 billion in 2018 to $11.5 billion by the end of 2023 (China's Ministry of Commerce, various years). Despite this growth, both the annual utilized capital and the cumulative stock accounted for less than 0.05 % of China's total inward FDI in 2023.

Fig. 6 presents Russian statistics on quarterly OFDI flows to China, which show notable surges in 2012, 2014, 2019, and 2021. When comparing these figures with Chinese data, it is important to recognize key methodological differences. China reports utilized capital, referring to actual capital realized on the ground, which may differ substantially from FDI commitments or flows recorded at the source. Furthermore, a portion of Russian FDI to China is likely channeled through third-party jurisdictions, such as Cyprus, BVI, and other offshore financial centers. These intermediary routes are typically not captured by the Bank of Russia, which reports investments based on the immediate counterparty country, in line with BPM6 guidelines. As a result, Russian statistics may

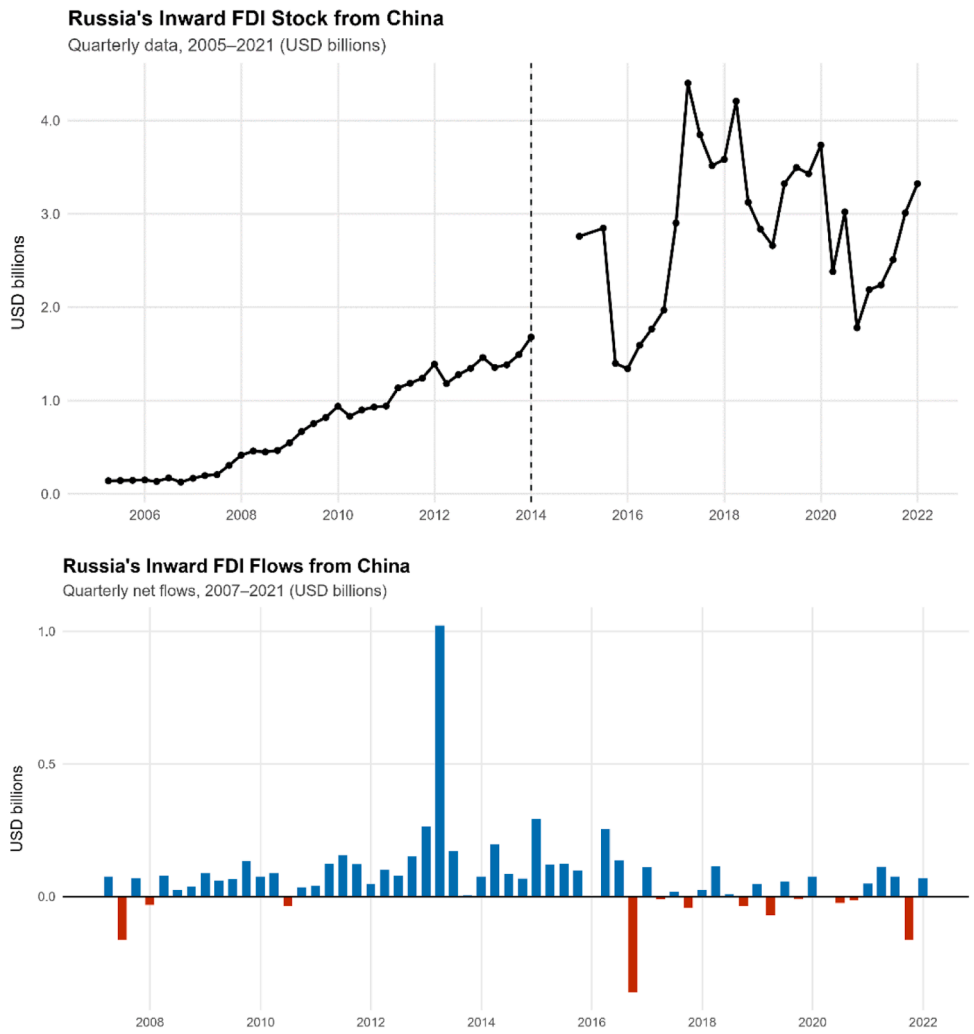

Fig. 2. Russia's inward FDI from China, 2005–2021.
Source: Authors' compilation of data from the Bank of Russia.

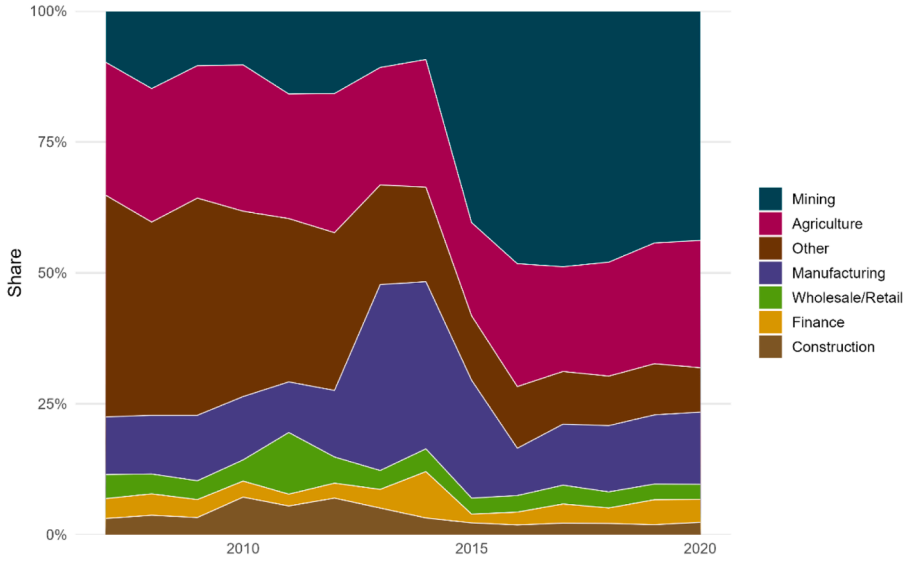

Fig. 3. Composition of China's ODI stock in Russia by industry, 2007–2020 (in percent).
Source: Authors' compilation from China's Ministry of Commerce et al. (various years).

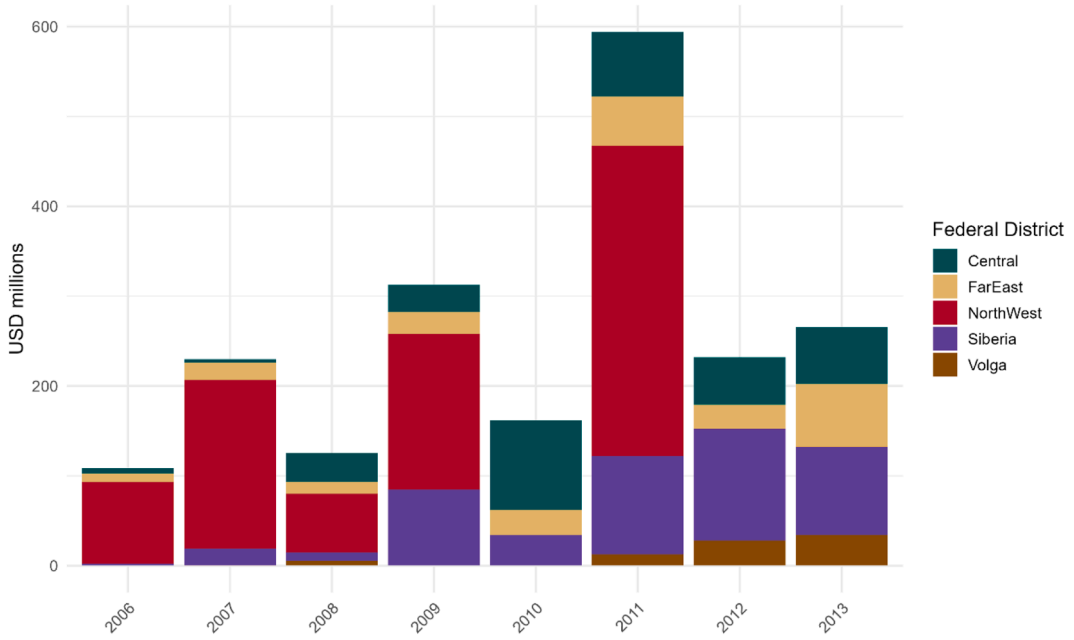

Fig. 4. Russia's inward FDI stock from China by federal district, 2006–2013 (USD millions and percent shares).
Note: The Southern, Ural, and North Caucasian Federal Districts are excluded from the figure due to negligible or zero levels of reported Chinese FDI during the period.
Source: Authors' compilation of data from Russia's Federal State Statistical Service.

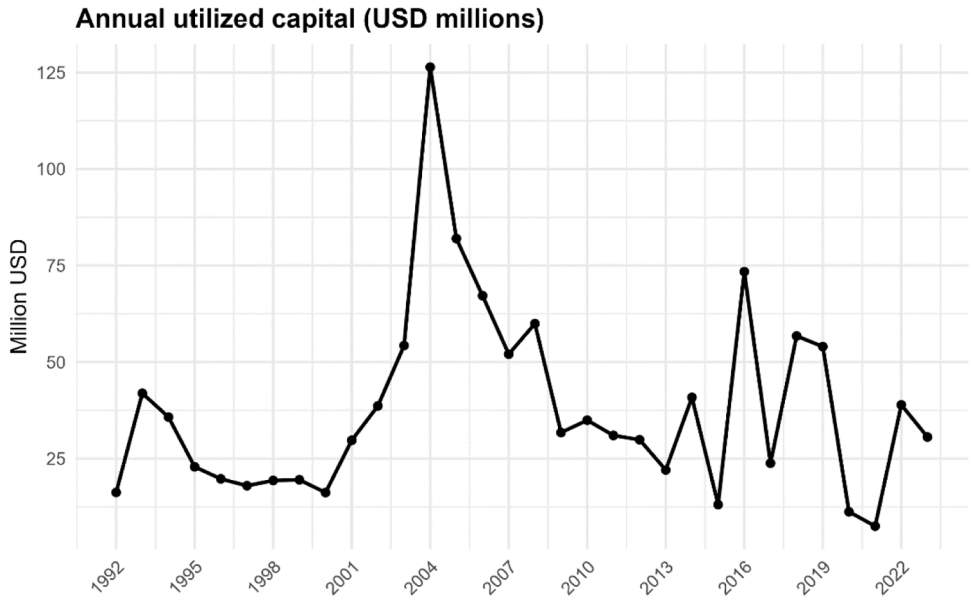

Fig. 5. China's inward FDI from Russia, 1992–2023.
Source: Authors' compilation from China's Ministry of Commerce (various years).

understate the true volume of Russian investment reaching China.

The spatial distribution of Russian FDI across China is difficult to assess due to the lack of disaggregated reporting in national-level data. While provincial statistical yearbooks often provide FDI figures by major source countries, Russian FDI is generally too small to be listed individually. An important exception is Heilongjiang Province in Northeast China, which borders Russia and maintains active cross-border economic ties. Fig. 7 presents the utilized Russian FDI capital and the number of investment projects recorded in the province. The most active phase of Russian investment occurred between 2009 and 2018, peaking at $72 million in 2014. During this period, the number of projects was relatively low, but their individual values were comparatively high. Since 2019, the utilized capital has declined significantly, dropping to as low as $10,000 during the pandemic in 2021 and rising only modestly to $570,000 in 2023, while the number of projects has increased. This suggests a shift toward smaller-scale investments in recent years.

As the analysis in this section demonstrates, official Russian and Chinese data on bilateral FDI suffer from a range of issues, including methodological inconsistencies, incomplete coverage, and a lack of disaggregated information by sector or region. These limitations hinder meaningful comparisons and obscure the underlying patterns of investment. To address these challenges, this study relies on disaggregated

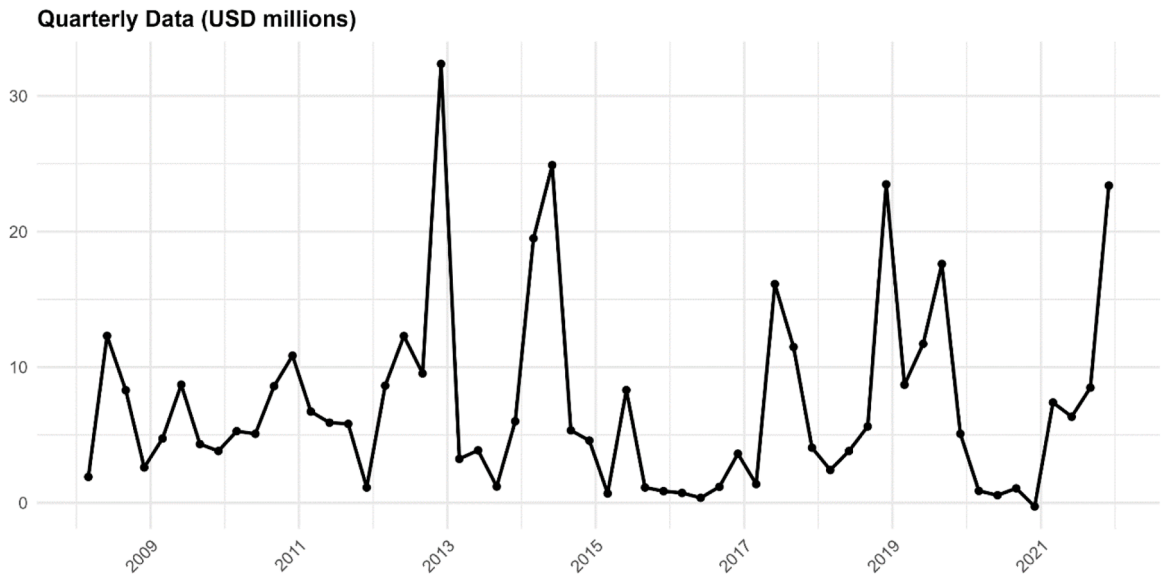

Fig. 6. Russia's OFDI flows to China, 2008–2021.
Source: Authors' compilation of data from the Bank of Russia.

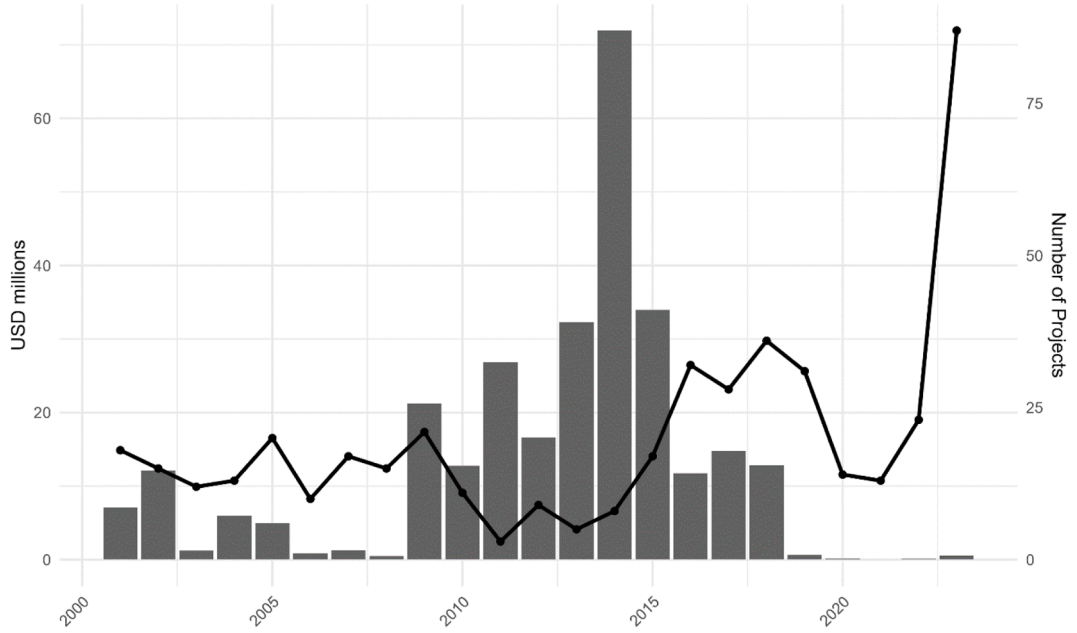

Fig. 7. Russian FDI in China's Heilongjiang province, 2001–2023.
Note: The left axis measures utilized capital in USD millions (represented by the bars), while the right axis indicates the number of projects (represented by the line).
Source: Authors' compilation from Heilongjiang Bureau of Statistics (various years).

data from both countries that have been collected using a uniform methodology, enabling a consistent examination of the regional and sectoral dimensions of bilateral economic cooperation between Russia and China.

3. Methodology

The gravity-like model used to examine the potential determinants of Chinese FDI in Russian regions is specified as follows:

$$FDI_{ijt} = \beta_0 + \beta_1 \ln GDP_{jt} + \beta_2 \ln Wage_{jt} + \beta_3 \ln DIST_{ij} + \beta_4 CONT_{ij} + \beta_5 Revenue_{it} + \beta_6 BJSH + \gamma_t + \eta_s + \varepsilon_{ijt}$$

where FDI_{ijt} denotes the value of Chinese company i's capital investment in Russian region j in year t. As an alternative specification, the model is estimated using the number of jobs created by the investment in the regional economy as the dependent variable.

The right-hand-side variables include destination characteristics (host-region GDP and labor costs), source characteristics (firm size and location), and bilateral frictions (distance and contiguity). These variables are selected based on both the existing literature and the availability of regional-level data. The size of the regional economy, proxied by gross domestic product (GDP_{jt}), is expected to influence foreign investment, as it signals higher economic activity and greater demand for goods and services. Larger economies also tend to offer deeper and more skilled labor pools, reducing hiring frictions and enabling firms to scale operations more easily. In addition, they often serve as hubs for indus-

trial clusters, suppliers, and service providers, generating agglomeration effects that lower transaction costs and enhance productivity.

Labor costs, measured by the average monthly wage ($Wage_{jt}$), represent one of the largest components of operating expenses across many industries. Foreign firms often invest abroad to take advantage of lower labor costs, particularly in labor-intensive sectors. Cheaper labor provides greater flexibility to scale operations and respond to fluctuations in demand. Moreover, in countries with rigid labor regulations, higher wages can substantially increase compliance costs (e.g., severance pay, social contributions), making these locations less attractive to foreign investors.

Geographic proximity between the source and destination of FDI is captured by the great-circle distance between the capital of the Chinese province where the investing company is headquartered and the administrative center of the Russian destination region ($DIST_{ij}$). Greater physical distance is associated with higher transportation and coordination costs, which complicate the establishment, management, and supply of foreign operations. In contrast, projects located closer to corporate headquarters allow for easier monitoring, control, and enforcement of company policies. For this reason, geographic contiguity ($CONT_{ij}$) is expected to have a positive effect on FDI flows.

The characteristics of the FDI source are captured in the model through two variables. First, the revenue of the Chinese company investing in Russia serves as a proxy for firm size ($Revenue_{it}$). Larger companies typically possess greater internal capital and enjoy easier access to external financing, allowing them to absorb the substantial upfront costs associated with entering foreign markets. They are also more likely to have international experience, established global networks, and the managerial and technical capacity to coordinate cross-border operations. Second, the dummy variable *BJSH* indicates whether the investing firm is headquartered in Beijing or Shanghai. Companies based in these metropolitan centers benefit from superior access to financial markets, government subsidies, and a highly skilled labor force, as these cities are home to China's top universities, major banks, investment institutions, central government ministries, and advanced legal and advisory services.

The model in Eq. (1) also includes year fixed effects (γ_t) to control for common shocks that affect all destination regions and source firms, such as the global financial crisis in 2008 or the COVID-19 pandemic in 2020–2021. Sectoral fixed effects (η_s) are included to account for unobserved sector-specific characteristics, such as capital intensity, trade exposure, and regulatory environment, that may influence FDI levels. Standard errors are clustered at the regional level to address potential heteroskedasticity and serial correlation within destination regions.

We estimate Eq. (1) using Poisson Pseudo-Maximum Likelihood (PPML) instead of OLS with fixed effects because PPML is better suited for modeling non-negative, highly skewed data such as FDI flows. Unlike OLS, PPML can handle zero values in the dependent variable without requiring transformation and provides consistent estimates in the presence of heteroskedasticity, which is a common feature in FDI data. Moreover, PPML estimates retain the multiplicative form of the model, which aligns with the theoretical structure of the gravity-like equations popular in FDI analysis.

Accordingly, Eq. (1) takes the following exponential form under PPML:

$$FDI_{ijt} = exp\left(\beta_0 + \beta_1 \ln GDP_{jt} + \beta_2 \ln Wage_{jt} + \beta_3 \ln DIST_{ij} + \beta_4 CONT_{ij} + \beta_5 Revenue_{it} + \beta_6 BJSH + \gamma_t + \eta_s\right) \cdot \varepsilon_{ijt}$$

For comparison purposes, we estimate the same model for Russian FDI in China, using Chinese provincial GDP and wages, bilateral distance and contiguity, the revenue of the Russian investor, and a dummy indicating whether the investor is headquartered in Moscow or St. Petersburg. The only additional variable is the NERI (National Economic Research Institute) Marketization Index, which captures the advancement of the market economy and the development of the private sector across Chinese provinces on an annual basis.

4. Data

The data on Chinese aggregate annual FDI in Russia is drawn from the *Statistical Bulletin of China's OFDI* (China's Ministry of Commerce et al., various years), which reports annual stocks and flows for the period 2003–2023 and sectoral composition for 2007–2020. On the Russian side, the Bank of Russia publishes inward FDI statistics by partner country in quarterly frequency, but does not provide a sectoral breakdown. In 2013, the Bank of Russia adopted the BPM6 reporting standard but did not revise earlier data retroactively. As a result, a methodological break emerged in the series, rendering pre-2014 and post-2014 data inconsistent and not directly comparable (see Fig. 2). Further discrepancies arise from differences in how China and Russia measure the source and destination of FDI flows. China's data attribute OFDI to the ultimate destination, even when routed through conduit economies, whereas Russia classifies inward FDI by the immediate investor country (see Section 2).

Data on aggregate Russian FDI in China are obtained from the *Statistical Bulletin of FDI in China* (China's Ministry of Commerce, various years), which provides annual figures for utilized capital but does not include sectoral or provincial breakdowns. The Bank of Russia, by contrast, publishes quarterly data on OFDI flows to China for the period 2008–2021. However, obtaining regional-level information on bilateral FDI remains challenging. Chinese provincial statistical yearbooks typically list only the largest source countries of FDI, among which Russia rarely appears. On the Russian side, inward FDI by region is reported only up to 2013, and according to a legacy methodology that predates the adoption of the BPM6 standard.

Our main empirical analysis relies on data from the *fDi Markets* database, which records cross-border greenfield investments (i.e., new physical projects or expansions that generate jobs and capital expenditure) while excluding mergers, acquisitions, and other equity transactions. A key strength of the dataset is its bottom-up approach: it tracks investment announcements at the project level, in contrast to official FDI statistics that typically rely on top-down financial flow data. Information is compiled from thousands of media outlets, industry associations, investment agencies, and market research firms, with priority given to direct company sources and cross-referencing across multiple channels. Each observation includes the project's reported capital value and associated jobs. When such figures are unavailable, *fDi Markets* applies a proprietary econometric algorithm to produce estimates (fDi Markets 2025).

The uniform methodology of the *fDi Markets* dataset enables a comparative analysis of Sino-Russian bilateral FDI flows that is not feasible with official statistics, given the methodological inconsistencies in their measurement. More importantly, the dataset identifies both the location of the source company and the destination region, allowing us to examine bilateral flows at the regional level between Russia and China. The sample covers the period 2003–2021. In addition to reporting investment value (in millions of USD) and jobs created, *fDi Markets* provides information on source-company characteristics, including revenue (in millions of USD), headquarters location, destination region,

and sector of activity. The raw data include 264 Chinese projects in Russia and 102 Russian projects in China. Excluding observations without specified source or destination regions leaves us with 178 and 80 projects, respectively. Given the relatively small sample size, we aggregate the sectors into three broad categories (primary, secondary, and tertiary), which we employ as fixed effects in the regression analysis.

Data on GDP and wages are sourced from the CEIC database. Provincial GDP for China and regional GDP for Russia, originally in national currencies, are first deflated to 2010 constant prices using volume indices, then converted into USD and expressed in natural logs. Regional wages are measured as average monthly earnings, likewise converted into USD and included as natural logs. Great-circle distances between the capital city of each Chinese province and the administrative center of each Russian region are calculated using geographic coordinates. The contiguity variable equals one only for Heilongjiang and Liaoning provinces in China and Amur, Jewish Autonomous Region, Khabarovsk, and Primorsky regions in Russia.

Table 1 presents the summary statistics of the regression variables. On average, the value of Chinese investments in Russia is about 1.5 times greater than that of Russian projects in China. Chinese FDI also generates nearly three times as many jobs as Russian FDI. The Russian regions receiving Chinese investment feature larger markets but lower wages compared to the Chinese provinces hosting Russian investment. Company revenues are broadly similar, and in both countries a comparable share of firms is headquartered in major cities (Beijing and Shanghai in China; Moscow and St. Petersburg in Russia). The number of source regions is likewise similar, but the distribution of destination regions reveals that Chinese FDI is spread much more widely across Russia than Russian FDI is across China.

5. Results

5.1. Descriptive analysis

We start with the descriptive analysis of the dataset that provides us with insights into the regional patterns and dynamics of bilateral FDI between China and Russia. Fig. 8 illustrates the spatial distribution and magnitude of Chinese cumulative FDI across Russia and Table 2 reports the corresponding numbers and main sectors. The total value of all FDI inflows from China over the period 2003–2021 amounts to $19.9 billion, which is about twice as much as the aggregate OFDI stock at the end of 2021 reported in Chinese statistics (see Fig. 1). One possible explanation for this difference is that the aggregate FDI stock is a net value, while the fDi Markets dataset records only inflows at the level of investment deals. The darker colors on the map in Fig. 8 suggest that the largest recipients of Chinese FDI are regions close to the border with Northeast China and a couple of regions in Western Russia. Consistent with this pattern, the figures in Table 2 show that the Far Eastern, Central, and Volga federal districts attracted around $13 billion, together accounting for more than 60% of all Chinese FDI in Russia during the sample period.

Table 1
Summary statistics of the regression variables.

	Chinese FDI in Russia	Russian FDI in China
Investment value (USD millions)	126.27	81.59
	(294.76)	(237.27)
Jobs created	478.76	143.47
	(793.75)	(406.09)
ln(Destination GDP)	9.31	5.44
	(1.33)	(0.87)
ln(Destination wage)	6.44	8.94
	(0.47)	(0.68)
ln(Distance)	8.35	8.59
	(0.63)	(0.41)
Contiguity	21	7
ln(Source revenue)	9.22	8.95
	(2.61)	(2.43)
Marketization index		8.77
		(1.51)
Source main cities	67	65
Source regions	17	15
Destination regions	49	15
Total observations	178	80

Note: Averages with standard deviation in parenthesis.

At the regional level, Moscow ranks first in terms of the number of announced investment projects, yet the cumulative value of these projects is exceeded by that of several other regions, most notably Khabarovsk, Primorsky, and Tatarstan, which together account for roughly one-third of all Chinese investments in Russia. The Khabarovsk and Primorsky regions, situated along the Chinese border, host numerous Chinese enterprises operating in resource-based industries, much of whose output is exported back to China. One such example, included in our dataset, is a project by the Dongjin Group, an agricultural conglomerate based in Heilongjiang Province, which borders Russia. In 2019, the company announced a planned investment of about $200 million in agricultural farms in the Khabarovsk region, where it reportedly leases approximately 660 square kilometers of farmland for soybean cultivation intended for the Chinese market (China Daily / China Services Info, 2017).

Tatarstan in Western Russia has also successfully attracted Chinese investment. For instance, the Chinese private conglomerate Shandong Baikal Group, a producer of steel products and metallurgical equipment, invested about $7 million in 2018 in the Russian-Chinese joint venture Kamastal, which manufactures painted and polymer-coated rolled steel in a special economic zone in Nizhnekamsk (Kommersant, 2018). The enterprise employs around 100 workers and plans to expand production in 2025 (Business-Gazeta, 2025). Nearby, a major Chinese project, the Deng Xiaoping Logistics Complex, is under construction to serve as a logistics hub and transit node for commerce with China that integrates container, rail, and road transport as part of the Belt and Road Initiative. The first container train bound for China was dispatched in October 2024.

Regarding the sectoral distribution of Chinese FDI, the data reveal clear geographic specialization. Investment in natural-resource extraction dominates in the central and eastern regions of Russia (Ural, Siberia, and the Far East), reflecting their mineral and energy endowments. In contrast, manufacturing and machinery projects prevail in the western parts of the country, while the service sector, including real estate, logistics, communications, and financial services, plays a leading role in metropolitan areas such as Moscow and St. Petersburg.

The spatial distribution, magnitude, and sectoral composition of Russian FDI in China are presented in Fig. 9 and Table 3. The cumulative value of announced FDI projects amounts to $6.8 billion, which is considerably lower than the aggregate figure of $10-11 billion reported by the Chinese Ministry of Commerce. Geographically, Russian investments are concentrated in provinces bordering Russia and in several advanced coastal regions. The three major metropolitan areas (Beijing, Shanghai, and Tianjin) together account for more than 70 percent of the total. While Beijing and Shanghai host a larger number of projects, Tianjin alone represents roughly 40 percent of all announced Russian FDI in China, concentrated in just three ventures. The most significant of these is the planned oil refinery jointly developed by the state-owned companies Rosneft and the China National Petroleum Corporation (CNPC). Rosneft announced an investment of $2 billion in 2006, envisioning annual processing of 200,000 barrels per day of crude oil supplied from its Siberian fields via a dedicated pipeline to Tianjin (Reuters, 2007). Several feasibility studies were completed and jointly endorsed by both sides between 2014 and 2017, with project completion originally scheduled for the end of 2019 (Nefterynok, 2017; TASS, 2014). In subsequent years, however, the project appears to have stalled.

Another notable case is the announced joint venture between Kamaz, Russia's largest manufacturer of heavy-duty trucks and a majority state-owned company, and the Chinese automaker Hawtai in 2015, aimed at

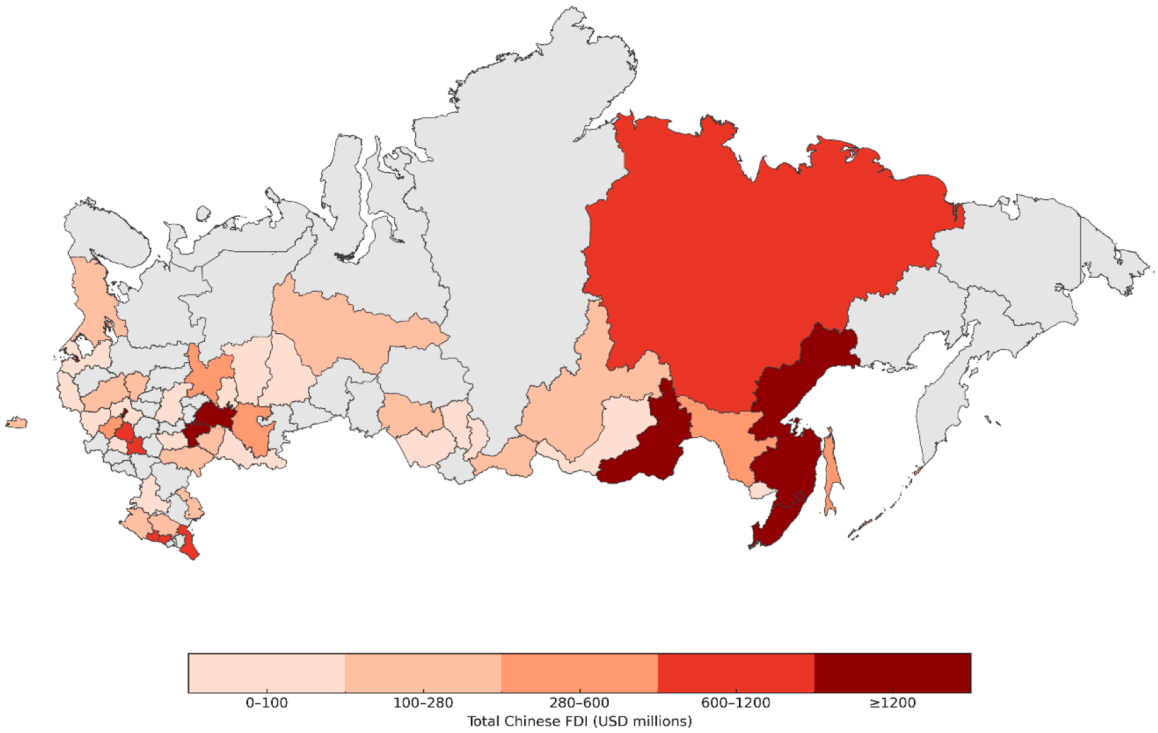

Fig. 8. Chinese FDI across Russian regions, 2004–2021.
Note: The color scale indicates the cumulative amount of Chinese FDI in each Russian region, measured in millions USD. Russian Arctic islands are not shown for simplicity.
Source: Authors' compilation based on data from the fDi Markets database.

producing Kamaz trucks in Tianjin. The plan envisioned an investment of $630 million by Kamaz to establish an assembly line that would later expand into full-scale production of 10,000 trucks per year for the Chinese market (Finance, 2015). However, the project was never implemented, largely due to the financial distress of Hawtai, which undermined the joint venture's viability (Autostat, 2024; Caixin Global, 2019).

As shown in the last column of Table 3, the services sector accounts for roughly half of the total value of Russian FDI in China and about 64% of all projects. Apart from a few large-scale manufacturing ventures, most notably the aforementioned Rosneft and Kamaz announcements, the bulk of investment is concentrated in financial and transportation/warehousing services, each representing about 30% of Russian FDI. In the financial sphere, the main investors are large state-controlled banks such as Sberbank, VTB, and Gazprombank, whose projects focus on business and financial intermediation services. Their principal objectives are to facilitate cross-border settlements, open yuan- and ruble-denominated accounts, and provide trade finance for Russian exporters and Chinese importers. In addition, banks such as VTB and Gazprombank have played a key role in developing ruble-yuan clearing mechanisms, enabling bilateral trade settlements in national currencies. These institutions also act as financial intermediaries for Russian firms operating in China. Consequently, much of Russia's financial FDI is concentrated in major metropolitan centers, particularly Beijing and Shanghai, where the representative offices of these banks are located.

In the transportation and warehousing sector, Russian investment is similarly dominated by state-linked transport enterprises, above all Russian Railways (RZD) and its logistics subsidiaries. Their activities center on freight forwarding, warehousing, and multimodal logistics that underpin trans-Eurasian container traffic, especially along the China-Europe rail corridors traversing Russia within the framework of the Belt and Road Initiative.

5.2. *Empirical analysis*

Table 4 presents the results of the estimation for the main determinants of Chinese FDI in Russia at the regional level. The first three specifications use the total capital investment associated with each FDI project as the dependent variable, while the last three use the number of jobs created. The coefficient for regional GDP is statistically significant in the job creation models but not in those using investment value as the dependent variable. This suggests that the size of the regional economy matters more for employment outcomes than for the scale of capital invested. One possible explanation is that output may be sold in other Russian regions or even exported back to China, reducing the relevance of local market size for investment decisions. In contrast, larger regional economies tend to create more jobs, likely because they offer a deeper labor pool. This pattern may also reflect broader demographic challenges in Russia, where many economically struggling regions face labor shortages due to population decline.

Labor costs emerge as a key determinant across all dimensions of Chinese FDI in Russia. The coefficient for wages is negative, statistically significant, and robust across all model specifications, underscoring the sensitivity of Chinese investors to labor costs. This is consistent with the fact that China has generally maintained relatively low labor costs, shaping the cost expectations of its outward investors. Moreover, numerous studies document that Chinese firms abroad often rely on imported Chinese labor, enabling them to reduce expenditures by paying wages below those required for local hires. When the Amur Region, located along the Chinese border, reduced quotas for Chinese workers in labor-intensive sectors such as forestry and agriculture in the early 2010s, Chinese FDI in the region declined sharply (Zuenko et al., 2019).

Anecdotal evidence further reinforces the importance of labor costs in shaping investment decisions, particularly in resource-based sectors. Zhang Dajun, Chairman of the Dongjin Group, which has invested extensively in agriculture in the Russian Far East, observed that "low

Table 2
Chinese FDI in Russian federal districts and regions, 2003–2021.

Region	FDI (USD mn)	Share (%)	Nr projects	Top sectors
Central	**3523.0**	**15.59**	**60**	Automotive; Real estate; Ceramics/Glass
Moscow	1204.5	5.33	37	Real estate; Automotive; Transportation/ Warehousing
Lipetsk	683.0	3.02	2	Automotive
Tula	622.2	2.75	3	Automotive; Food/ Beverages
Northwestern	**1998.5**	**8.84**	**14**	Real estate; Renewable energy; Automotive
St Petersburg	1302.3	5.76	6	Real estate; Communications; Financial Services
Karelia	279.0	1.23	3	Renewable energy; Wood Products
Kaliningrad	265.2	1.17	3	Automotive; Business Services; Metals
Southern	**536.8**	**2.37**	**7**	Automotive; Renewable energy; Engines/Turbines
Astrakhan	228.9	1.01	5	Renewable energy; Food/ Beverages
Krasnodar	219.2	0.97	1	Automotive
Rostov	88.7	0.39	1	Engines/Turbines
North Caucasian	**2253.9**	**9.97**	**8**	Plastics; Automotive; Building Materials
Kabardino-Balkaria	694.5	3.07	1	Plastics
Karachay-Cherkess	657.6	2.91	3	Automotive
Dagestan	615.6	2.72	1	Building Materials
Volga	3**608.9**	18.13	**34**	Industrial Machinery; Automotive; Real estate
Ulyanovsk	715.0	15.11	6	Industrial Machinery; Building Materials; Automotive
Tatarstan	1909.9	8.45	18	Automotive; Food/ Beverages; Real estate
Bashkortostan	299.2	1.32	1	Industrial Machinery
Ural	**137.3**	**0.61**	**3**	Metals; Communications
Khanty-Mansi	105.0	0.46	2	Metals
Sverdlovsk	32.3	0.14	1	Communications
Siberian	**2040.4**	**9.03**	**17**	Metals; Wood Products; Automotive
Zabaykalsky	1296.7	5.74	3	Metals
Novosibirsk	171.6	0.76	3	Wood Products; Automotive; Communications
Irkutsk	129.2	0.57	3	Automotive; Communications; Business Machines
Far Eastern	**5803.6**	**29.16**	**35**	Paper/Printing; Coal, Oil, Natural Gas; Food/ Beverages
Khabarovsk	2099.2	9.29	8	Paper/Printing; Food & Beverages; Aerospace
Primorsky	1954.7	8.65	17	Food/Beverages; Coal, Oil, Natural Gas; Real estate
Sakha	937.3	4.15	2	Coal, Oil, Natural Gas; Real estate
Total	19**,902.4**	**100.0**	**178**	

Note: The table reports each federal district (in bold) and its three constituent regions with the largest amounts of Chinese FDI.
Source: Authors' compilation based on data from fDi Markets database.

cost is the biggest lure for our group in Russia" (China Daily / China Services Info, 2017). He noted that not only land and diesel are cheaper in Russia, but that the monthly wage of a skilled agricultural worker in China is roughly three times higher than in Russia. Similarly, the salaries of managers and engineers in the software and telecommunications sectors, where Chinese companies have established a growing presence, are also significantly lower than in China—an important motivational factor behind many Chinese investment decisions (Xinhua News Agency, 2016).

Distance carries the expected negative sign and is statistically significant in half of the models. Importantly, distance serves as a proxy not only for transportation costs but also for communication and coordination barriers. Greater geographic separation increases the difficulty and cost for Chinese headquarters to maintain regular contact with project managers operating several time zones away. This is particularly relevant for service-oriented investments and just-in-time manufacturing, where real-time coordination is critical. When immediate communication is required, employees in Russia may need to work outside normal hours to align with business hours in China, necessitating overtime pay and potentially discouraging hiring. This may help explain why the distance coefficient is negative and significant in two out of the three job creation models. By contrast, contiguity is not robust across specifications, which is unsurprising given that only two contiguous Chinese provinces (Heilongjiang and Liaoning) are represented in the dataset and have relatively few observations.

The coefficients for firm revenue and a Beijing/Shanghai location suggest that larger Chinese companies, as well as those headquartered in China's two most prominent metropolitan centers, tend to invest greater amounts of capital in Russian regions. However, these investments do not translate into significant job creation locally. This pattern may reflect the capital-intensive nature of projects undertaken by such firms, their reliance on technology rather than labor, or their tendency to bring in Chinese personnel rather than hiring locally.

Table 5 reports the results for the determinants of Russian FDI in China. Labor costs emerge again as the dominant factor, with a consistently negative and significant coefficient across all model specifications. Similar to the preferences of Chinese investors in Russia, Russian firms tend to favor Chinese provinces with lower average wages. While market size did not significantly influence Chinese investment in Russia, the results here suggest that Russian companies actively avoid China's larger regional economies. This pattern likely reflects the sectoral composition of Russian FDI, which is heavily concentrated in transportation and warehousing, sectors that are typically oriented toward border logistics and infrastructure rather than consumer markets. Additionally, bilateral cooperation agreements, such as the "Silk Road Economic Belt," have prioritized investment in smaller, inland provinces in western and central China.

The marketization index emerges also as a significant factor, suggesting that provinces with more developed private sectors and market economies are more attractive for Russian investment. A high NERI score also signals that local governments are open to foreign technology and capital, more aligned with international business standards, and willing to experiment with joint ventures and cross-border cooperation. Furthermore, advanced markets are often associated with free trade zones that offer foreign investors various benefits, such as tax breaks and faster customs clearance. In fact, the *fDi Markets* dataset indicates that several projects are located in the Shanghai Free Trade Zone and the Guangzhou Economic and Technological Development Zone.

The size of the Russian source company (proxied by revenue) has a positive and significant effect on the value of investment projects, but a negative association with job creation. This suggests that larger Russian firms tend to commit more capital when investing in China, likely reflecting their greater financial capacity and strategic ambitions. However, these firms are also less labor-intensive, possibly due to their stronger orientation toward capital-intensive sectors such as transportation and logistics.

Both geographic distance and contiguity between Russian regions and Chinese provinces consistently carry negative signs in the regressions, but rarely attain statistical significance. This suggests that, unlike in typical gravity-type investment models, proximity does not play a decisive role in shaping the location of Russian FDI in China. The dummy variable capturing whether the investing firm is headquartered in Moscow or St. Petersburg also does not have a significant effect on the size of Russian FDI in China or on the number of jobs created.

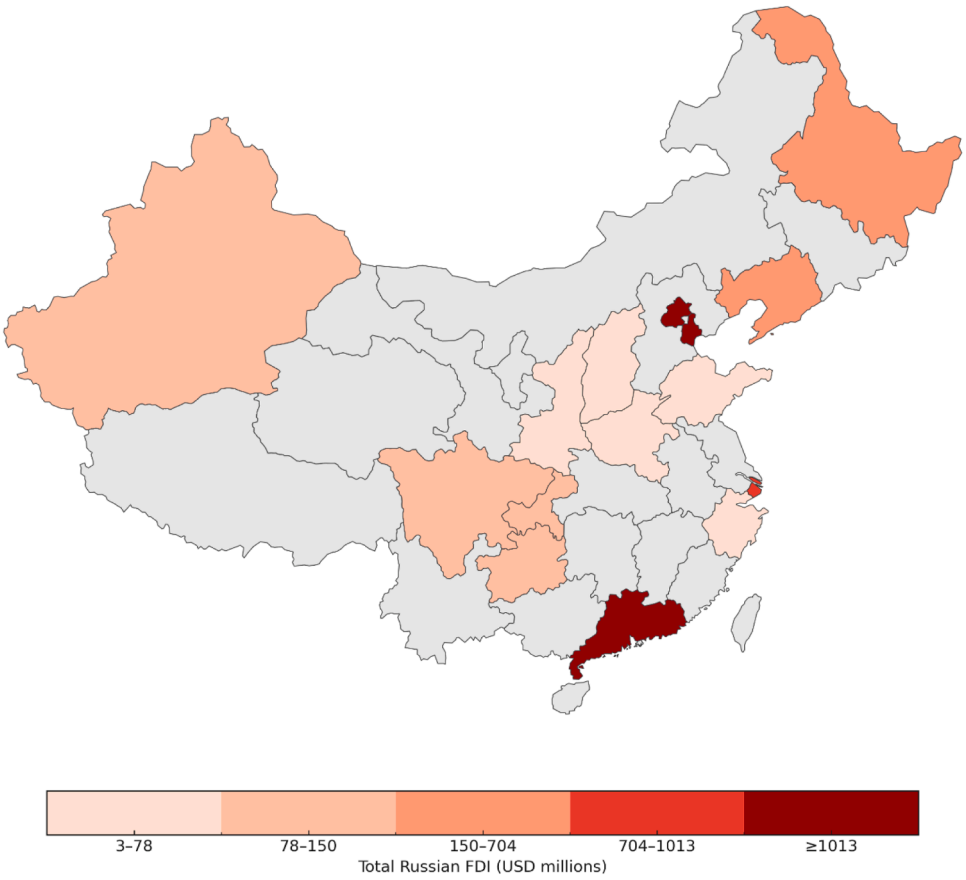

Fig. 9. Russian FDI across Chinese provinces, 2004–2021.
Note: The color scale indicates the cumulative amount of Russian FDI in each Chinese province, measured in millions USD.
Source: Authors' compilation based on data from the fDi Markets database.

Table 3
Russian FDI in Chinese provinces, 2003–2021.

Province	FDI (USD mn)	Share (%)	Nr projects	Top sectors
Beijing	1340.0	19.79	38	Financial Services; Aerospace; Transportation/Warehousing
Chongqing	103.2	1.52	2	Transportation/Warehousing
Guangdong	1013.3	14.96	6	Real estate; Transportation/ Warehousing; Financial Services
Guizhou	137.8	2.03	1	Chemicals
Heilongjiang	164.6	2.43	3	Financial Services; Transportation/ Warehousing; Business Services
Henan	61.1	0.9	1	Transportation/Warehousing
Liaoning	151.9	2.24	4	Minerals; Transportation/ Warehousing; Business Services
Shaanxi	57.0	0.84	1	Food/Beverages
Shandong	51.6	0.76	1	Transportation/Warehousing
Shanghai	704.2	10.4	17	Financial Services; Transportation/ Warehousing; Rubber
Shanxi	3.0	0.04	1	Metals
Sichuan	103.2	1.52	2	Transportation/Warehousing
Tianjin	2685.7	39.66	3	Coal, Oil, Gas; Automotive; Transportation/Warehousing
Xinjiang	144.05	2.13	2	Transportation/Warehousing
Zhejiang	51.6	0.76	1	Transportation/Warehousing

Source: Authors' compilation based on data from fDi Markets database.

In the next step of the analysis, we estimate the model using a merged regional-level dataset. For this purpose, the total FDI value of all projects for each Chinese province-Russian region pair is aggregated and regressed on the potential determinants of the destination region. The dataset includes all possible bilateral pairs of Chinese provinces and Russian regions, with each pair appearing twice (once for each investment direction). This structure yields a theoretical maximum of 43,092 observations (21 provinces × 54 regions × 19 years), although the effective sample size is slightly smaller (42,624) due to missing values. Given the large number of zero flows, PPML remains the most appropriate estimation technique for this analysis.

The results are presented in Table 6. Across the first four specifications, destination GDP exhibits a consistently negative and statistically significant coefficient. This suggests that, on average, regions with higher economic output attract less bilateral FDI once other factors and fixed effects are controlled for. The result implies that both Chinese and Russian investors may target relatively smaller or developing partner regions, possibly seeking lower costs or market niches rather than mature, high-income markets.

The wage variable is likewise negative and highly significant, which concurs with our findings in Tables 4 and 5 and indicates that higher labor costs at the destination deter bilateral FDI. When distance is added (columns 5–6), its coefficient is negative and significant, consistent with gravity expectations: more distant regional pairs exhibit weaker FDI linkages because of higher transport, coordination, and informational costs.

Sectoral composition also matters. A higher primary-sector share significantly reduces FDI inflows, implying that resource-heavy or less diversified regions are less attractive for cross-border investment. The

Table 4
Determinants of Chinese FDI in Russian regions, 2003–2021.

	Investment value			Jobs created		
	(1)	(2)	(3)	(1)	(2)	(3)
GDP	0.008	0.017	−0.254	0.294**	0.432***	0.295**
	(0.191)	(0.157)	(0.285)	(0.117)	(0.161)	(0.118)
Wage	−1.305**	−2.519***	−1.404**	−1.847***	−3.014***	−1.846***
	(0.585)	(0.604)	(0.566)	(0.428)	(0.576)	(0.429)
Distance	−0.521*	0.042	−0.254	−0.436**	0.234	−0.448***
	(0.294)	(0.492)	(0.285)	(0.170)	(0.359)	(0.172)
Contiguity	−0.272	−0.479	0.327	0.045	−1.260***	0.026
	(0.434)	(0.448)	(0.410)	(0.459)	(0.302)	(0.454)
Revenue		0.126*			0.056	
		(0.071)			(0.040)	
Beijing/Shanghai			1.041***			−0.039
			(0.240)			(0.284)
Obs.	178	112	178	178	112	178
Pseudo R^2	0.424	0.640	0.496	0.434	0.647	0.434

Note: GDP, wage, distance and revenue are in natural logs. Heteroskedasticity-robust standard errors clustered at the Russian region (destination) level are reported in parentheses. All models include year and sector fixed effects. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table 5
Determinants of Russian FDI in Chinese provinces, 2003–2021.

	Investment value			Jobs created		
	(1)	(2)	(3)	(1)	(2)	(3)
GDP	−2.459***	−3.366***	−2.394***	−1.817***	−2.646***	−1.817***
	(0.446)	(0.596)	(0.473)	(0.480)	(0.573)	(0.481)
Wage	−3.865***	−3.793***	−3.897***	−2.237***	−3.793***	−2.238***
	(0.750)	(0.641)	(0.735)	(0.543)	(0.943)	(0.542)
Distance	0.341	2.744*	−0.003	−0.298	−1.285	−0.301
	(0.312)	(1.426)	(0.266)	(0.357)	(0.899)	(0.456)
Contiguity	−0.375	−1.079**	−0.260	−0.009	−0.128	−0.008
	(0.384)	(0.424)	(0.319)	(0.446)	(0.783)	(0.440)
		1.392***	1.303***	0.767***	1.310***	0.767***
Marketization	1.306***	(0.258)	(0.220)	(0.136)	(0.246)	(0.137)
	(0.233)					
Revenue		0.171**			−0.112*	
		(0.078)			(0.067)	
Moscow/			0.519 (0.638)			0.005
St. Petersburg						(0.298)
Obs.	80	56	80	80	56	80
Pseudo R^2	0.715	0.817	0.718	0.696	0.811	0.696

Note: GDP, wage, distance and revenue are in natural logs. Heteroskedasticity-robust standard errors clustered at the Chinese province (destination) level are reported in parentheses. All models include year and sector fixed effects. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

tertiary-sector share has a smaller but still negative and significant coefficient, suggesting that service-dominated regions do not necessarily receive more bilateral FDI, perhaps because manufacturing and extraction projects dominate Sino-Russian investment relations. The secondary-sector share is negative but not statistically significant.

Columns 5 and 6 introduce the China to Russia directional dummy (CNRU) and its interactions. The main effect of CNRU is large and highly significant, indicating a strong directional asymmetry. The baseline level of Chinese investment in Russia differs sharply from Russian investment in China. Specifically, the coefficient on CNRU is positive, implying substantially larger expected FDI flows from China to Russia than the reverse. However, once the interaction terms are included (column 5 and 6), the sign flips and the picture becomes more nuanced. The negative coefficient on CNRU alone now represents the baseline shift conditional on mean values of GDP and wage, while the interactions reveal how the determinants operate differently for Chinese investors. The GDP × CNRU interaction is negative, meaning that Chinese FDI into Russia declines more sharply with increasing Russian regional GDP than Russian FDI into China does with Chinese provincial GDP. In other words, Chinese investors favor relatively smaller or less-developed Russian regions, perhaps due to resource-seeking motives or lower competition.

Conversely, the Wage × CNRU interaction is positive and highly significant. This suggests that higher wages in Russian destinations are associated with more Chinese FDI, opposite to the general pattern. Chinese investors may therefore target higher-wage (and hence higher-productivity) Russian regions, such as Moscow or St. Petersburg, where infrastructure and human-capital quality compensate for higher labor costs. Together, the interaction results point to a structural asymmetry: Russian outward FDI behaves as cost-seeking and resource-oriented, while Chinese outward FDI appears more market- and efficiency-oriented within Russia.

Substantively, these results highlight that bilateral FDI between China and Russia is far from symmetric. Chinese investors respond differently to host-region characteristics, emphasizing market potential and strategic locations despite higher wages, whereas Russian investors' projects are more sensitive to production costs and distance. These asymmetric sensitivities reflect the broader economic structures of the two countries: China's outward FDI being capital- and technology-driven, and Russia's being resource-driven.

The results in Table 7 show that the determinants of job creation through bilateral FDI between China and Russia largely mirror those found for FDI flows themselves. In most specifications, regional GDP and wages have negative and statistically significant effects, indicating that job creation is stronger in poorer, lower-wage regions, which is consistent with FDI's tendency to seek cost advantages and higher marginal

Table 6
Determinants of bilateral regional FDI between China and Russia, 2003–2021.

	(1)	(2)	(3)	(4)	(5)	(6)
GDP	−0.214**	−0.211**	−0.244**	−0.231**	0.376***	−0.112
	(0.107)	(0.108)	(0.110)	(0.107)	(0.083)	(0.102)
Wage	−1.033***	−0.496**	−0.520**	−0.481**	−0.250	−1.472***
	(0.215)	(0.200)	(0.210)	(0.204)	(0.199)	(0.209)
Distance					−0.562**	−0.538**
					(0.227)	(0.240)
CNRU					7.364***	−14.73***
					(1.485)	(1.471)
*GDP*CNRU*					−0.962***	
					(0.178)	
*Wage*CNRU*						2.115***
						(0.217)
Primary sector		−1.668***				
		(0.452)				
Second. sector			−0.968			
			(1.537)			
Tertiary sector				−0.215***		
				(0.059)		
Region FE						
Year FE	Yes	Yes	Yes	No	No	No
			Yes	Yes		Yes
	Yes	Yes			Yes	
Obs.	42,624	40,965	40,965	40,965	42,624	42,624
Pseudo R^2	0.377	0.405	0.407	0.406	0.136	0.170

Note: GDP, wage, and distance are in natural logs. GDP and wage are for the destination region. Heteroskedasticity-robust standard errors are reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table 7
Determinants of job creation through bilateral regional FDI between China and Russia, 2003–2021.

	(1)	(2)	(3)	(4)	(5)	(6)
GDP	−0.274***	−0.255**	−0.286**	−0.284**	−0.399***	−0.176*
	(0.105)	(0.115)	(0.113)	(0.114)	(0.095)	(0.097)
Wage	−0.903***	−0.411*	−0.419*	−0.402*	0.023	−1.267***
	(0.215)	(0.222)	(0.228)	(0.230)	(0.195)	(0.217)
Distance					−0.452*	−0.444
					(0.265)	(0.278)
CNRU					8.030***	−14.03***
					(1.315)	(1.581)
*GDP*CNRU*					−1.013***	
					(0.165)	
*Wage*CNRU*						2.016***
						(0.225)
Primary sector		−1.909***				
		(0.388)				
Second. sector			−0.328**			
			(0.149)			
Tertiary sector				−0.291**		
				(0.118)		
Region FE						
Year FE	Yes	Yes	Yes	No	No	No
			Yes	Yes		Yes
	Yes	Yes			Yes	
Obs.	42,624	40,965	40,965	40,965	42,624	42,624
Pseudo R^2	0.404	0.440	0.443	0.443	0.128	0.160

Note: GDP, wage, and distance are in natural logs. GDP and wage are for the destination region. Heteroskedasticity-robust standard errors are reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

returns. The sectoral shares also display similar patterns to FDI: primary-sector dominance strongly reduces employment gains, while secondary and tertiary sectors have smaller but still negative effects. The CNRU interactions reinforce the asymmetry observed in FDI regressions, with Chinese investment in Russia generating substantially more jobs, particularly in middle-income regions with moderate wage levels. Overall, most coefficients are comparable in sign, magnitude, and significance to those explaining FDI activity, suggesting that the same structural forces driving investment flows also shape their employment impact.

6. Conclusions

This paper examines the regional geography of bilateral FDI flows between China and Russia using a novel regional-level dataset. The results reveal a stark asymmetry. Chinese FDI in Russia is larger, more regionally diversified, and strongly influenced by resource endowments and strategic infrastructure projects. In contrast, Russian FDI in China is smaller in scale, more concentrated in coastal provinces, and largely oriented toward services and logistics. While economic fundamentals such as wages and institutional quality matter, the determinants vary considerably between the two directions. Russian investors appear to avoid larger Chinese provinces and show a preference for more market-

oriented environments, while firm size is positively associated with investment value but negatively with job creation. Geography, in the form of distance and contiguity, plays a surprisingly limited role. These findings underscore the uneven nature of Sino-Russian economic integration and highlight the importance of state-driven initiatives and regional characteristics in shaping bilateral investment patterns.

These findings have several practical implications for policymakers. For China, the imbalance in bilateral FDI suggests that while Chinese firms are actively investing in key Russian regions, Russian investment in China remains limited and narrowly focused. To attract more Russian FDI, especially in sectors beyond logistics and services, Chinese authorities could offer targeted incentives, simplify approval procedures, and promote regional cooperation through initiatives like the Belt and Road Initiative. On the Russian side, the limited use of opportunities in China's inland provinces points to the need for a more coordinated investment strategy, especially for firms based outside Moscow and St. Petersburg. Both countries would benefit from improving information sharing on investment opportunities, aligning reporting standards, and supporting direct ties between provinces. These steps could help build a more balanced and diversified investment relationship at the regional level.

CRediT authorship contribution statement

Nadia Doytch: Conceptualization, Data curation, Formal analysis, Methodology, Writing – original draft. **Kiril Tochkov:** Conceptualization, Formal analysis, Methodology, Visualization, Writing – original draft.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

Autostat (2024). Hawtai Liquidates Legal Entity in Russia. Retrieved from https://eng.autostat.ru/news/25964/.

Boermans, M.A., Roelfsema, H., Zhang, Y., 2011. Regional determinants of FDI in China: a factor-based approach. J. Chin. Econ. Bus. Stud. 9 (1), 23–42.

Borisov, G., Popova, L., 2018. FDI motivation and entry strategies of Russian companies in the Chinese market. In: Advances in Economics, Business and Management Research, 104. Atlantis Press, pp. 146–151.

Business-Gazeta. (2025). Kamastal: "There were moments when we wanted to give up." Retrieved from https://www.business-gazeta.ru/article/659229.

Caixin Global (2019). Crisis at Hawtai Motor deepens as debt repayment missed. Retrieved from https://www.caixinglobal.com/2019-07-31/crisis-at-hawtai-motor-deepens-as-debt-repayment-missed-101446003.html.

China Daily / China Services Info. (2017). China becomes largest investor in Russian agricultural sector. Retrieved from https://www.chinaservicesinfo.com/s/201708/16/WS5b782592498e855160e8ba19/china-becomes-largest-investor-in-russian-agricultural-sector.html.

China's Ministry of Commerce (various years). Statistical Bulletin of FDI in China.

China's Ministry of Commerce (various years). Statistical Bulletin of FDI in China.

fDi Markets, 2025. fDi Markets database (n.d.). Financial Times Ltd. Retrieved June 5 from. https://www.fdimarkets.com.

Xinhua Finance (2015). Kamaz and Hawtai Motor Group sign cooperation agreement with total investment of USD 630 million. Retrieved from http://www.xinhuanet.com/auto/2015-09/07/c_128201074.htm.

Gao, X., 2012. A study on the relationship between Russian direct investment in China and Sino-Russian trade: an empirical analysis based on cointegration and error correction model. J. Shijiazhuang Univ. Econ. 35 (2), 107–112.

Gonchar, K., Marek, P., 2014. The regional distribution of foreign investment in Russia: are Russians more appealing to multinationals as consumers or as natural resource holders? Econ. Transit. 22 (4), 605–634.

Groznykh, R., Drapkin, I., Mariev, O., 2019. Determinants of foreign direct investment inflows: the case of heterogeneous Russian regions. Eds.. In: Cermakova, K., Mozayani, S., Hromada, E. (Eds.), Proceedings of the 11th Economics & Finance Conference. International Institute of Social and Economic Sciences, Rome, pp. 69–84, 27–30 May 2019.

Gurova, I.P., 2020. Regional distribution of foreign direct investment in the Russian economy. Reg. Res. Russ. 10 (3), 318–326.

Heilongjiang Bureau of Statistics, various years. Heilongjiang statistical yearbook. China Statistics Press.

Henderson, J., Yermakov, V., 2019. Russian LNG: Becoming a global force (OIES Working Paper NG 154). Oxford Institute for Energy Studies.

Izyumova, O.N., Krylova, T.A., 2017. Analysis and structure of Russian direct investments abroad. Sci. Bull. South. Inst. Manag. 3, 9–15.

Kommersant (2018). The first resident of the Nizhnekamsk TASED "Kamastal" will build a plant worth 429 million rubles. Retrieved from https://www.kommersant.ru/doc/3622040.

Kudryashova, I.V., Pleshakova, M.V., Ryabova, I.A., 2020. Foreign direct investment in Volgograd region: distribution and role in the economy. Sci. J. Volgogr. State Univ., Econ. 22 (1), 210–220.

Liu, M., Qian, X., 2021. Provincial interdependence and China's "irrational" outward foreign direct investment. Open Econ. Rev. 32 (1), 153–181.

Liuhto, K.T., Majuri, S.S., 2014. Outward Foreign Direct Investment from Russia: a Literature Review. J. East-West Bus. 20 (4), 198–224.

Liuhto, K., 2015. Motivations of Russian firms to invest abroad: how do sanctions affect Russia's outward foreign direct investment? Balt. Reg. 7 (4), 7–26.

Luo, Y., Xue, Q., Han, B., 2010. How emerging market governments promote outward FDI: experience from China. J. World Bus. 45 (1), 68–79.

Malkina, M.Y., Ovchinnikov, S.A., Gorbunova, E.A., 2017. The current state and prospects for attracting Chinese FDI to Russia. Terra Econ. 15 (2), 132–146.

Mariyev, O., Drapkin, I., Chukavina, A., Rachinger, D., 2016. Determinants of FDI inflows: the case of Russian regions. Econ. Reg. 12 (4), 1244–1252.

Minakir, P.A., Suslov, D.V., 2018. Foreign direct investment in the economy of the Russian Far East. Econ. Soc. Chang.: Facts Trends Forecast 11 (3), 41–56.

Nefterynok (2017). Rosneft and China's CNPC approved the technological configuration of the Tianjin refinery. Retrieved from https://www.nefterynok.info/novosti/rosneft-i-kitayskaya-cnpc-utverdili-tehnologicheskuyu-konfiguraciyu-tyanczinskogo-npz.

Reuters (2007). PetroChina plant expands, awaits Russian JV plan. Retrieved from https://www.reuters.com/article/markets/petrochina-plant-expands-awaits-russian-jv-plan-idUSPEK56992/.

TASS (2014). Rosneft and CNPC approved the feasibility study for construction of the Tianjin refinery. Retrieved from https://tass.ru/ekonomika/1559370.

Wei, K., Li, S., Jiang, C., 2022. The spatial heterogeneity and time-varying nature of FDI determinants: evidence from China. J. Asia Pac. Econ. 27 (3), 445–469.

Xinhua News Agency (2016). Russian media: Chinese companies flock to Russia to build factories — costs one-third lower than in China. Xinhuanet. Retrieved from https://news.xinhuanet.com/world/2016-06/18/c_129072445.htm.

Yang, J., & Priede, J. (2023). China's Outward Foreign direct investment in Russia in the context of the Russia–Ukraine war. SSRN Working Paper No. 5231541.

Yukhanaev, A., Sharma, S., Nevidimova, A., 2014. Subnational determinants of foreign direct investments in the Russian Federation. J. East. Eur. Cent. Asian Res. (JEECAR) 1 (2), 1–10.

Zhang, L., 2015. An empirical study on the relationship between Russian direct investment in China and Sino-Russian trade. Int. Trade (4), 99–104.

Zhang, Q., 2023. Sectoral and country-origin dynamics of FDI in China in 1997–2020. Chin. Econ. 56 (2), 89–103.

Zuenko, I.Y., Ivanov, S.A., Savchenko, A.E., 2019. Chinese investments in the Russian Far East. World Eco. Intern. Relat. 63 (11), 105–113.