



# CRINK Economic Ties

## *Uneven Patterns of Collaboration*

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### THE ISSUE

- China, Russia, Iran, and North Korea (CRINK) face obstacles to economic collaboration such as geographic distance, sanctions, mutual mistrust, and self-sufficiency goals.
- Reliable data on CRINK's economic and trade ties is limited due to lack of reported data from Iran and North Korea and the rise of informal and shadow trade since Russia's invasion of Ukraine.
- Existing data reveals uneven patterns, although expanding bilateral agreements, strengthening energy ties, and increasing trade in dual-use technologies point to growing economic cooperation among the CRINK countries.
- CRINK also seeks to integrate their financial and payment systems to bypass Western sanctions by prioritizing national currencies over the U.S. dollar.
- The post-2022 China-Russia relationship drives most of the momentum, while Iran and North Korea exhibit expanding but considerably weaker integration with the rest of the group.
- China is nevertheless a cautious actor that hedges its bets in energy trade with Russia and Iran, avoids flagrant sanctions violations, and faces constraints from its own economic slowdown.

### INTRODUCTION

This brief explores the post-2022 economic ties among China, Russia, Iran, and North Korea—the so-called CRINK states. Historically, economic alignment among military allies has been uneven and has not necessarily indicated the formation of a cohesive bloc. The World War II-era Axis powers, for instance, had fragmented economic cooperation due to geographic distance, wartime needs, sanctions, mistrust, and a focus on self-sufficiency—factors that also constrain CRINK today.<sup>1</sup>

Still, signs including rising trade in energy and dual-use technologies point to growing economic coordination. Assess-

ing these ties is difficult, however, due to limited or opaque data (especially from Iran and North Korea) and increased informal trade since Russia's 2022 invasion of Ukraine.

This brief draws from diverse international and industry-specific sources to fill data gaps. Findings show uneven patterns: China-Russia economic ties have grown, especially in energy and dual-use goods, but Chinese investment in Russia remains modest amid concerns over sanctions-related investment risks. Other CRINK members show far weaker economic coordination.

## TRADE AGREEMENTS

China is the most diplomatically and economically active CRINK member, maintaining economic and trade agreements with the rest of the countries. Beijing and Tehran have a 25-year agreement, signed in 2021, that secures discounted Iranian oil for China in exchange for investments into Iran's energy, transport, and manufacturing sectors.<sup>2</sup> China also has several Belt and Road Initiative (BRI) projects in Iran and launched the Qom-Yiwu all-rail freight train in 2024.<sup>3</sup> China and Russia have no formal trade treaty but have had a "no limits" friendship since February 2022—a unique partnership label that Beijing assigns to no other country.<sup>4</sup> There have been some impediments in the China-North Korea economic relationship, including Beijing's support of the 2017 UN sanctions over Pyongyang's nuclear program. However, China remains North Korea's principal economic partner, accounting for 98 percent of its official trade as of 2024.<sup>5</sup> In addition, the two countries maintain freight rail and shipping links established in 2015 and have expanded infrastructure at the lesser-known Wonjong-ni-Quanhe point of entry, dramatically increasing their trade.<sup>6</sup>

### *China is the most diplomatically and economically active CRINK member.*

Beyond China, bilateral economic cooperation has intensified among the other CRINK members. In January 2025, Russia and Iran signed a 20-year comprehensive strategic partnership (CSP) covering interbank cooperation, investment in energy, defense coordination, and sanctions circumvention.<sup>7</sup> The two are also working, along with other states, on the construction of a trade route, the International North-South Transport Corridor, which would connect Russia to India through Iran.<sup>8</sup>

Russia also deepened ties with North Korea in 2012 by forgiving 90 percent of its Soviet-era debt in return for investment rights in energy, healthcare, and education.<sup>9</sup> In June 2024, Moscow and Pyongyang signed a CSP that includes a mutual defense clause and addresses both countries' security and economic needs by providing North Korea with access to food and finance and Russia with munitions supplies.<sup>10</sup> The two are also in the process of building a new road bridge at the Tumangang-Khasan border slated for completion in 2026.<sup>11</sup>

Although North Korea and Iran do not share a comprehensive partnership, they have collaborated sporadically. In 2012, they signed an agreement on scientific and technological cooperation, and in both 2019 and 2024, Pyongyang dispatched high-level economic and trade delegations to Tehran.<sup>12</sup>

Regarding multilateral coordination, the Shanghai Cooperation Organization (SCO), established in 2001 by China, Russia, and several other Eurasian states, added Iran in 2023.<sup>13</sup> BRICS, a geoeconomic bloc, aims to elevate the "rest" over the "West" in global governance and finance and has similarly expanded, with Iran joining in January 2024.<sup>14</sup> All three countries are members of the Asian Infrastructure Investment Bank (AIIB), and both Iran and Russia are active participants in the BRI. Even within non-Western dominated international organizations, North Korea remains a pariah, with limited engagement in international governance.

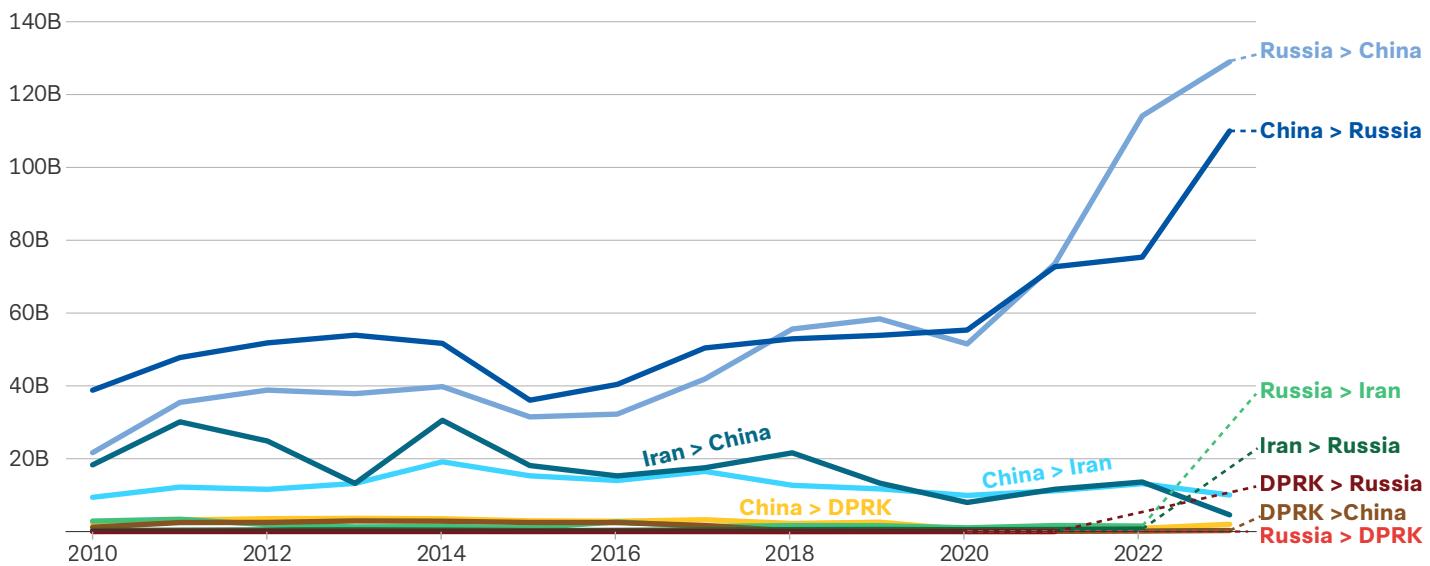
## TOTAL TRADE

In 2023, bilateral trade flows among the four countries exceeded \$255 billion, rising 16.6 percent from 2022 and a whopping 49.1 percent since 2021.<sup>15</sup> China-Russia trade dwarfs the other bilateral flows, followed by China-Iran trade.

In order to showcase this rising trend, CSIS relied on the detailed global trade data offered by the Observatory of Economic Complexity (OEC). The period of time analyzed includes the early 2010s, prior to Russia's initial invasion of Ukraine in 2014, to establish a baseline and account for major economic disruptions in the years leading up to 2022, including the global slowdown caused by the Covid-19 pandemic.

As Figure 1 shows, China-Russia trade has grown significantly over time. From 1997 to 2007, China accounted for less than 10 percent of Russia's trade, as Moscow remained economically oriented westward.<sup>16</sup> This began to shift after 2008, but even after the 2014 invasion of Ukraine, Russia prioritized economic sovereignty and remained cautious of overreliance on China, leading to only modest growth in imports. The 2022 full-scale invasion, however, marked a turning point: Western sanctions severed key supply chains, forcing Moscow to turn to Beijing, as China was the only major industrial country that did not sanction Russia.<sup>17</sup>

Figure 1: Total Bilateral Trade Among CRINK, 2010–2023 (USD, billions)



Source: CSIS's calculations based on OEC data: <https://oec.world/en>.

Since 2022, China has emerged as Russia's key economic partner, offering both direct and indirect support to Moscow's military capabilities and sometimes stepping in to replace entire sectors previously sourced from Western economies. For example, in the automotive industry, China now produces roughly 90 percent of Russia's new imported passenger vehicles.<sup>18</sup> Since the invasion of Ukraine, the structure of China-Russia trade has revolved around Russia exporting energy and China exporting machinery, transportation equipment, chemicals, and textiles. In both 2022 and 2023, bilateral trade saw an annual growth of nearly 30 percent (reaching \$190 billion and \$240.11 billion, respectively).<sup>19</sup> Similarly upward trends are captured by Chinese customs data, according to which Chinese shipments to Russia surged by 46.9 percent in 2023 from 2022, and by 64.2 percent compared with 2021.<sup>20</sup>

## *While Russia is a partner for China, China is the partner for Russia.*

While China became Russia's main trading partner, Russia rose from 13th to 7th place among China's trade partners between 2020 and 2024.<sup>21</sup> The relationship is asymmetrical, with Moscow significantly more reliant on Beijing than the other way around.<sup>22</sup> In 2023, Russia accounted for only \$129 billion of China's \$2.1 trillion in imports (6.1 percent) and \$110 billion of its \$3.41 trillion in exports (3.2 percent), according to the OEC. By contrast, 32.7 percent of Russia's total exports went to China and 52.8 percent of

Russia's imports came from China.<sup>23</sup> This asymmetry will likely deepen as oil shipments grow, and Russia becomes more reliant on Chinese technological parts. While Russia is *a* partner for China, China is *the* partner for Russia.

In recent months, China-Russia trade has remained substantial but shows signs of stagnation or decline in some areas. For instance, their bilateral trade growth slowed to just 1.9 percent in 2024—the lowest rate since the pandemic.<sup>24</sup> In the first half of 2025, according to data from China's General Administration of Customs, bilateral trade totaled \$106.48 billion, a decrease of 9.1 percent compared to the year prior.<sup>25</sup> This shift likely reflects a combination of factors: (1) saturation of the Russian market as initial substitution of Western imports by Chinese goods nears completion, (2) Russia's broader economic stagnation in recent months, and (3) growing caution among Chinese firms over potential secondary sanctions, especially related to dual-use exports to Russia.<sup>26</sup>

Unlike China, which consistently reports customs data, Russia, Iran, and North Korea do not—resulting in limited and unreliable trade figures. The OEC has no recent data on Iran-North Korea trade, which (though likely underreported) appears minimal. For instance, in 2018, Iran exported baked goods to North Korea, worth \$21,200, while North Korea supplied Iran with products such as antibiotics, electric batteries, and rubber belting totaling \$518,000 back in 2005.<sup>27</sup> The Russia-North Korea trade data appears to be similarly underreported, with the two having stopped releasing bilateral trade numbers since Spring 2022.<sup>28</sup> Per

the OEC, Russia's exports to North Korea (through 2020) were mainly mineral products and machinery, while North Korea's exports to Russia (through 2021) focused on textiles, machinery, and transportation equipment. Russia's exports to Iran are dominated by animal and vegetable products, machinery, and plant products such as wood and cotton, while Iran exports produce, chemical products, metals, and plastics in return.<sup>29</sup>

## ENERGY TRADE

According to the data from the global energy trade tracker Vortexa, CRINK's energy trade is dominated by Russian and Iranian oil exports to China, consisting primarily of crude petroleum. As seen in Figure 2, there has been a significant rise in energy exports from both Russia and Iran to China over the past five years. Over that period, Iranian oil exports to China have steadily increased, rising from an average of 339,400 barrels per day (bpd) in 2020 to 1.70 million bpd in the first half of 2025 (January-July 2025)—a nearly 400 percent increase. China currently accounts for the largest share of Iran's oil exports at 46.6 percent. The majority of this bilateral trade is crude oil, though Iran also exports both refined (clean) and unrefined (dirty) petroleum products.<sup>30</sup>

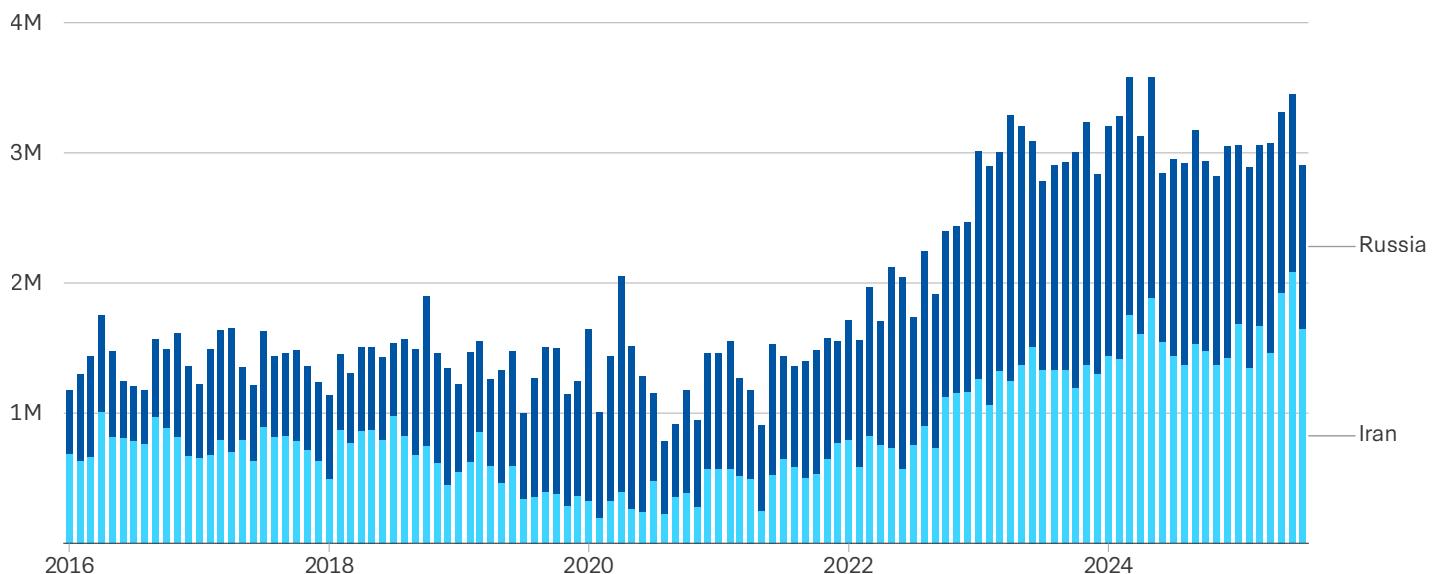
Following Western energy sanctions against Russia, China increased its share of oil imports from Russia from 6.7 percent to 12 percent between 2021 and 2024. However, China usually buys Russian energy when it is economically advantageous. While Russia was China's second major oil supplier in 2024 (preceded by Saudi Arabia at 12.6 per-

cent), China has continued to diversify its energy sources.<sup>31</sup> According to Vortexa, within the first half of 2025 (January-July 2025), India has replaced China as the top importer of Russian oil, while China's top oil suppliers have become Saudi Arabia at 13.1 percent and Iran at 12.3 percent, followed by Russia at 10.3 percent.<sup>32</sup>

Similar developments are taking place in the gas trade. Between 2021 and 2024, Russia's share of China's pipeline natural gas imports nearly tripled from 13 percent to 38 percent, in large part due to the ramp-up of Russian production along the Power of Siberia 1 pipeline. Russia's share of China's liquified natural gas imports also rose from 6 percent to 11 percent.<sup>33</sup> However, China has been reluctant to advance the Power of Siberia 2 pipeline due to disagreements with Moscow over pricing and construction costs, as well as concerns about energy security and overreliance on Russia.<sup>34</sup> Following the SCO summit hosted by China from August 31 to September 1, 2025, Gazprom announced that Xi and Putin had signed a “legally binding memorandum” on the construction of Power of Siberia 2, although the two countries have reportedly not yet reached a pricing agreement.<sup>35</sup>

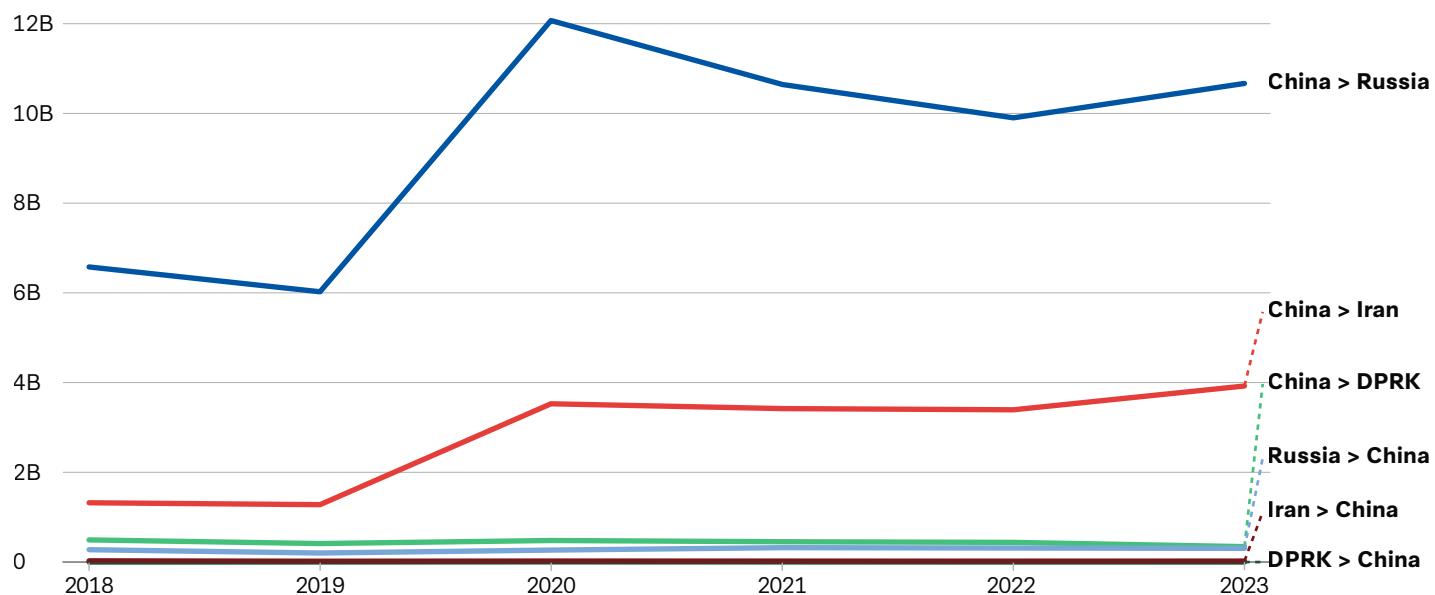
Beyond exports to China, neither Russia nor Iran has significant officially documented energy trade with North Korea. However, there have been reports of Russia supplying North Korea with refined oil products, with increases in trade correlating with North Korean leader Kim Jong-un's visits to Russia.<sup>36</sup> Finally, while China is the dominant importer within CRINK, it is not a major exporter of energy products.

Figure 2: Russia's and Iran's Seaborne Oil Exports to China, January 2016-July 2025



Source: Vortexa, <https://www.vortexa.com/>.

Figure 3: China's Direct Investment Positions by Counterpart Economy, 2018-2023



Source: CSIS calculations based on International Monetary Fund, "IMF Data" (database), [https://data.imf.org/en/Data-Explorer?datasetUrn=IMF:STA:DIP\(12.0.0\)](https://data.imf.org/en/Data-Explorer?datasetUrn=IMF:STA:DIP(12.0.0)).

## FOREIGN DIRECT INVESTMENT

As seen in Figure 3, China has little investment in North Korea or foreign direct investment (FDI) coming into China from other CRINK countries. While its investment in Russia notably increased in 2020, this figure has remained roughly flat since then, with a similar trend in its direct investment to Iran. Aggregated data suggest this stagnation likely reflects a broader slowdown in China's global FDI since 2020.<sup>37</sup>

Meanwhile, Russian companies have increased their comparatively modest investments in China: In 2023, Russian aluminum giant Rusal acquired a 30 percent stake in Hebei Wenfeng New Materials.<sup>38</sup> In 2024, Russian nickel producer Nornickel announced a joint venture to shift copper processing to China.<sup>39</sup> In the artificial intelligence (AI) sector, the Russia-China Investment Fund (RCIF), established in 2012, reportedly invested around \$245 million in Chinese AI chip startup Biren Technology in 2021 and another \$200 million in MiningLamp, a platform dubbed "China's Palantir."<sup>40</sup>

## POST-2022 TRENDS

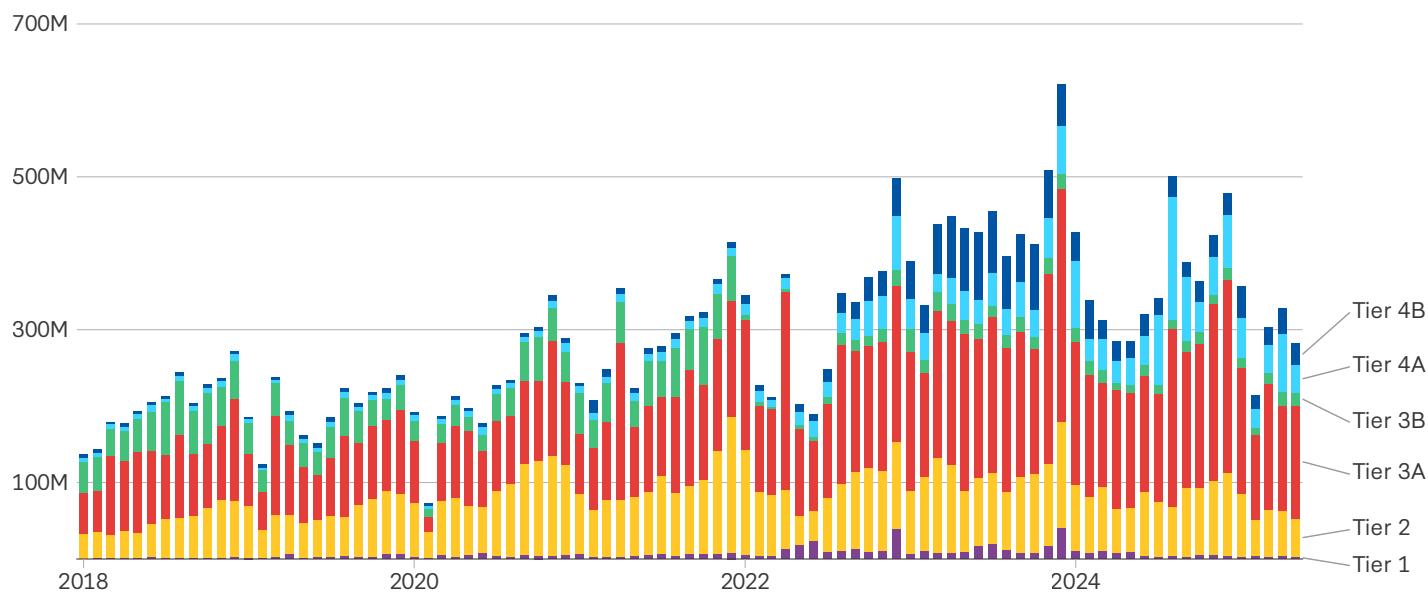
### RUSSIA AND CHINA

Since Russia's full-scale invasion of Ukraine, China has played a key role in supplying Russia with various dual-use goods essential to its defense industry. Through

China-based shell companies and small and medium-sized enterprises, Beijing has exported millions of dollars' worth of semiconductors, chips, ball bearings, navigation equipment, fighter jet parts, and other military components to Moscow.<sup>41</sup> These transfers have played a crucial role in enabling Russia to ramp up weapons production.

The scale of this support is reflected in key trade data. For example, as CSIS previously reported, Russian imports of Chinese machine tool parts rose from 32 percent in 2022 to 80-90 percent in 2023.<sup>42</sup> Chinese exports of metalworking machine tools to Russia similarly increased to nearly 60 percent in 2022 and roughly 90 percent in 2023.<sup>43</sup> In one striking instance of Chinese economic backfilling for Russia, by November 2023, Chinese year-to-date total exports of ball bearings to Russia were also up 345 percent from the same period in 2021, with exports shipped to Kyrgyzstan, likely ultimately transshipped into Russia, surging by 2,500 percent.<sup>44</sup> As shown in Figure 4, Chinese supplies of certain electronics and electronic components—especially those belonging to the Tier 3A and Tier 2 high-impact categories as defined by the U.S. Bureau of Industry and Security (BIS)—dominate the export composition.<sup>45</sup> The post-2022 invasion period also has seen an increase in the deliveries of items belonging to the Tier 4B (computer numerical control machine tools), confirming the above conclusions.

Figure 4: Chinese Dual-Use Exports to Russia by U.S. BIS Tier, February 2018–April 2025



Source: CSIS calculations based on China's customs data: <http://stats.customs.gov.cn/indexEn>.

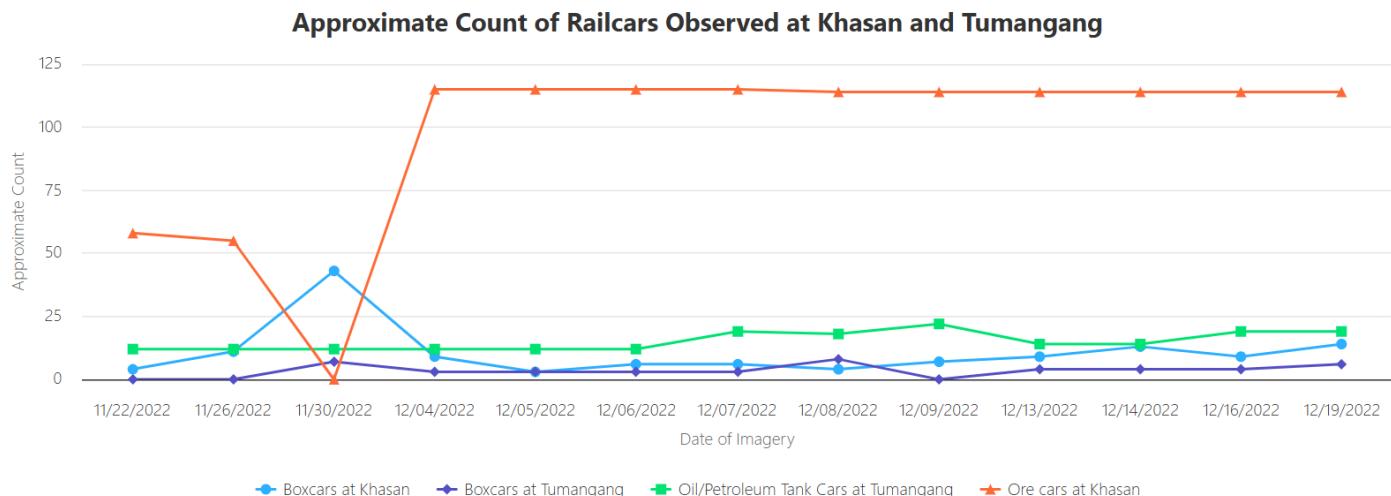
Interestingly, Russian transactional customs data obtained by CSIS reported a sharp decline in the import of sensitive goods on the BIS list from 2023 to 2024 in both transaction count and value, with nearly all dual-use components on the BIS list falling by 65 percent or more and imports of 20 items or greater declining by over 90 percent. In contrast, Chinese customs data during the same period (which only reports value, not the number of transactions) shows increases in reported value for 14 sensitive goods. While the datasets are not directly comparable due to differing methodologies, the stark divergence suggests Russia was intentionally underreporting trade in sensitive goods in 2024.

## RUSSIA AND NORTH KOREA

While reliable data is limited, indirect evidence suggests a growing pattern of North Korean shipments to Russia, mirroring trends emerging with China (see Figure 5).

In response to its military needs, in fall 2022, the Kremlin coordinated a rise in dual-use imports from China and arms deliveries from North Korea, among other goods.<sup>46</sup> Russia has also brought in North Korean workers to help offset labor shortages in its civilian sectors, with reports emerging about “slave-like” conditions faced by these workers (see image below).<sup>47</sup> Additionally, in 2024, Russia ceased complying with UN Security Council sanctions on North Korea, which—cut off from the Society for Worldwide Interbank Financial Telecommunication (SWIFT)—has increasingly conducted transactions in rubles and U.S. dollars through Russian and South Ossetian correspondent banks, with active support from Moscow.<sup>48</sup>

Figure 5: North Korean Railway Shipments to Russia, November 22–December 19, 2022



Source: Joseph S. Bermudez Jr., Victor Cha and Jennifer Jun, "Arms for Energy: War Brings Together Russia and North Korea," CSIS, *Beyond Parallel*, February 17, 2023, <https://beyondparallel.csis.org/arms-oil-and-coal-the-tumangang-khasan-railroad-crossing/>.

Figure 6: What Has North Korea Given Russia?



Source: "Explainer: How much is North Korea making from Russia?," YouTube video, posted by Center for Strategic & International Studies, July 15, 2025, 09:21, [https://www.youtube.com/watch?v=JJu6\\_Gysw7s](https://www.youtube.com/watch?v=JJu6_Gysw7s).

## RUSSIA AND IRAN

Moscow and Tehran have entirely stopped reporting their bilateral trade data since the invasion of Ukraine. However, it is well known that Iran has supported Russia's war effort with Shahed drones and ballistic missiles, reportedly

in exchange for a deal to acquire Sukhoi Su-35 fighter jets and their production designs—though it remains unclear whether the jets have been delivered, with recent reports placing them in Algeria.<sup>49</sup> Russia now produces Shahed-136 drones, rebranded as the Geran-2, using a mix of both Rus-

sian and Iranian parts.<sup>50</sup> Analysts warn that Russia could soon have the capacity to launch 2,000 drones in a single salvo due to its augmented production.<sup>51</sup>

## INTEGRATING FINANCIAL INFRASTRUCTURE

CRINK economic collaboration has also intensified in other ways. Just as Russia has drawn on China's and Iran's experience with oil smuggling and ship-to-ship transfers, it has also embraced barter trade and transactions in non-dollar currencies such as the ruble, yuan, and Iranian rial to bypass Western financial systems.<sup>52</sup> Innovation in the financial sphere is one of the key realms of CRINK economic collaboration, often driven by the need to process payments as part of the significant Chinese-Russian trade relationship.

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### CROSS-BORDER PAYMENTS AND SWAP LINES

Since 2022, Russian use of the yuan to conduct cross-border settlement between Chinese and Russian firms has skyrocketed: As of December 2023, roughly one-third of Russian trade was already settled in renminbi (RMB).<sup>53</sup> While the Central Bank of Russia has not published updated details on its foreign exchange reserves since 2022, Russian holdings of RMB have likely surged since the launch of the full-scale invasion of Ukraine.<sup>54</sup>

While the Central Bank of Russia and the People's Bank of China (PBOC) do share a central bank swap line, its reported usage is limited, despite previous reports of yuan liquidity shortages in Russian domestic currency markets, most notably reflected in the overnight lending rate for RMB inside Russia.<sup>55</sup> Research from the International Monetary Fund (IMF) has shown that central bank swap lines and offshore clearing banks promote RMB internationalization.<sup>56</sup> One prominent study from the European Bank for Reconstruction and Development showed that by the end of 2022, Russian import firms' usage of RMB to settle cross-border

payments increased by 17 percentage points and that RMB use in settlements between Russian and non-Chinese firms rose by an additional 4 percentage points on average when the third country had an active RMB swap line with the PBOC and had not sanctioned Russia.<sup>57</sup> Furthermore, the study saw a significant increase in Russian importers invoicing in RMB when the traded goods in question were sanctioned dual-use goods or industrial goods.<sup>58</sup>

However, the yuan is not yet ready to supplant the U.S. dollar's global status, given the currency's continued non-convertibility and China's persistent current account surplus, which respectively restrict liquidity and the supply of RMB-denominated assets for purchase.<sup>59</sup>

### PAYMENT SYSTEM INTEGRATION AND DIGITAL CURRENCY COLLABORATION

CRINK is also expanding alternatives to Western-controlled financial platforms. Following the imposition of sanctions in 2014, Russia began to develop alternative domestic payment processing systems, launching its Mir card payment platform and System for Transfer of Financial Messages (SPFS).<sup>60</sup> China had already launched its UnionPay card payment brand in 2002 and has since dominated domestic card payments in mainland China, making it the largest card payment issuer in the world.<sup>61</sup> In 2015, China launched its Cross-border Interbank Payment System (CIPS) for processing transactions in RMB through the PBOC.<sup>62</sup> Today, both UnionPay and CIPS are used in Russia, creating key linkages between the Russian and Chinese financial systems.<sup>63</sup> Similarly, the Iranian domestic payment platform, Interbank Information Transfer Network (SHETAB), is connected to the Russian Mir system, meaning Iranian card holders are able to process transactions inside Russia and vice versa.<sup>64</sup> Separately, Russian and Chinese financial institutions have creatively adopted "mirror schemes," involving coordination of exporters and importers' currency holdings inside each country, to minimize the need to execute cross-border payments while still supporting trade.<sup>65</sup>

In addition, members of CRINK have leaned into payment platform innovation, such as the use of central bank digital currencies (CBDCs). Both the Central Bank of Russia and the People's Bank of China have made progress on their own development of CBDC digital tokens.<sup>66</sup> Russia and China further participate in BRICS efforts to spur work on payment platform innovation and digital currency collaboration.<sup>67</sup> China also participates in the multilateral Project mBridge, designed to facilitate payments between CBDCs.<sup>68</sup>

# *Widespread CBDC use in CRINK economies remains distant, but its potential to facilitate cross-border settlements should concern Western policymakers monitoring possible sanctions circumvention.*

Widespread CBDC use in CRINK economies remains distant, but its potential to facilitate cross-border settlements should concern Western policymakers monitoring possible sanctions circumvention. Russian efforts to evade sanctions have already incorporated new payment technologies such as cryptocurrencies, as well as innovations such as ruble-backed stablecoins.<sup>69</sup> Russia remains interested in expanding the potential usage of gold-backed stablecoins as well, demonstrating a determination to adapt to Western economic containment.<sup>70</sup>

To curb growing CRINK economic ties that could facilitate sanctions evasion, the West should limit the “network effect” driving adoption of alternative financial systems. This could involve the extreme option of enforcing mutual exclusivity—for example, restricting access to SWIFT or Western card services like Visa for banks using CIPS or SPFS (the latter already being under Western sanctions)—but risks serious financial fragmentation that could dramatically raise the costs of international exchange and inhibit trade.<sup>71</sup> A softer alternative approach is to strengthen the appeal of Western platforms through innovation and continued global competitiveness, reinforcing the still-dominant role of the U.S. dollar.

## **CONCLUSION**

Existing data reveals signs of deepening collaboration among CRINK countries, including expanded bilateral agreements, closer energy ties, mutual support in sanctions evasion, and efforts to integrate financial and payment systems. However, similar to the Axis powers during World War II, economic ties among CRINK nations are far from fully developed.

Since 2022, the Russia-China relationship has been defined by growing Chinese support for Russia’s wartime economy, as seen by notable increases in energy and electronics trade. Iran and North Korea’s lower sensitivity to Western sanctions have enabled them to provide more direct military support to Russia, exemplified by Iran’s crucial aid in drone procurement and North Korea’s supply of

manpower and munitions. However, uneven data availability likely skews the analysis: Far more is known about the Moscow-Beijing economic relationship than about their ties with Tehran or Pyongyang, leaving key analytical gaps.

Yet, even within the Russia-China partnership, Beijing remains cautious about deepening economic ties that do not directly serve its business interests. This is evident, for example, in stagnating Chinese direct investments in Russia since 2020 and China’s effort to diversify its energy suppliers. After a sharp uptick in trade during 2022-2023, Russia-China trade grew only slightly in 2024 and declined in the first quarter of 2025. This slowdown, likely reflecting Moscow’s market saturation and Beijing’s concern over secondary sanctions, underscores the limits of this economic partnership. ■

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