

Serbia

Chinese Development Finance, 2000-2023



Country Profile

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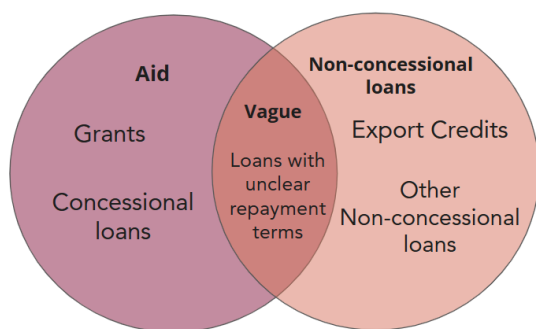
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Key concepts: aid, non-concessional loans, and vague flows

In this profile, China's official development finance portfolio is represented across three main categories: aid, non-concessional loans, and vague. Loans from Chinese state-owned entities can either qualify as aid or non-concessional loans, based on how their borrowing terms compare to regular market terms (i.e., the level of financial concessionality) and whether or not they have development intent (i.e., if the primary purpose of the financed project/activity is to improve economic development and welfare in the recipient country). Aid from Chinese state-owned entities includes grants, in-kind donations, and concessional loans with development intent. The "non-concessional loans" category captures loans from Chinese state-owned entities that are provided at or near market rates and those that primarily seek to promote the commercial interests of the country from which the financial transfer originated. An export credit is a specific type of loan issued by a Chinese state-owned bank or company that requires an overseas borrower to use the proceeds of a loan to acquire goods or services from a Chinese supplier. Export credits are not considered aid since they have a commercial rather than a development purpose. See Appendix B for more details.



Key concept: What is concessionality?

Concessionality is a measure of the generosity of a loan or the extent to which it is priced below-market rates. It varies from 0% to 100%, with higher values representing more concessional loans.

Non-concessional loans are those provided at or near market rates. The Organisation for Economic Co-operation and Development (OECD) determines which official sector financial flows constitute "aid" based on a grant element threshold for concessionality. Given that China does not report its loans or lending terms to the OECD, some of its official sector financial flows cannot be classified as "aid" or "non-concessional." In this report, such loans are assigned to the "vague" category.

Executive Summary

- Between 2000 and 2023, official sector lenders and donors from China committed \$7.4 billion across 125 projects. Loans account for 96% of that total, with grants contributing just \$289 million. Chinese financing peaked in 2019 at \$1.4 billion, driven by a \$1 billion preferential buyer's credit from China Eximbank for the Hungarian-Serbian Railway.
- Three Chinese institutions provide virtually all the financing, with China Eximbank leading the way. China Eximbank, Bank of China, and China Development Bank together account for 97% of the portfolio. China Eximbank dominates with infrastructure lending anchored by concessional preferential facilities, while Bank of China's largest contributions support mining acquisitions, including a \$654 million loan for the Zelezara Steel Mill modernization. Nearly 100% of Chinese-financed infrastructure projects in Serbia are implemented by at least one Chinese entity.
- Transport infrastructure absorbs over half the portfolio, reflecting Serbia's role as a connectivity hub on China's overland route into Europe. Transport and storage accounts for \$3.8 billion, or 51% of all commitments. Industry, mining, and construction follows at 20% with \$1.5 billion, and energy at 13% with \$950 million.
- Serbia's debt composition broadly tracks upper-middle-income country averages, with a slightly elevated sovereign share. Public debt accounts for 78% of total Chinese loan commitments, nine percentage points above the 69% upper-middle-income average. Private debt stands at 15%, and potential public debt at 7%.
- Serbia shows no signs of financial distress on any of its Chinese loans, a rarity in China's global portfolio. None of the 39 loans exhibit evidence of arrears, default, or renegotiated terms. The IMF classifies Serbia at medium risk for debt distress.
- By the end of 2024, Serbia owed an estimated \$3.4 billion in outstanding PPG debt to Chinese creditors, equivalent to about 12% of total external public debt and 3.8% of GDP. Annual debt service is rising as loans exit their grace periods, climbing from \$70 million in 2018 to a projected peak of nearly \$400 million in 2027.
- The Kostolac B Power Plant project exposed governance weaknesses and regulatory friction despite ultimately reaching completion. Phase 2 of the project, financed by a \$624 million China Eximbank preferential buyer's credit in 2014, faced repeated delays after a Serbian court invalidated the environmental impact assessment in 2016. Environmental activists challenged a subsequent assessment for excluding details on the adjacent coal mine expansion, and the Energy Community Treaty Secretariat received a formal complaint over the omission. In February 2023, six individuals were arrested for embezzling \$7.48 million from the state-owned power company overseeing the project. The new generation unit was finally commissioned in October 2024, nearly three years behind schedule.

Country overview: China's relationship with Serbia



Serbia and China's Belt and Road

Serbia is a landlocked country in the Balkans that used to be a part of Yugoslavia prior to its dissolution in 1992.

In 2015, Serbia and China signed the "Memorandum of Understanding on Jointly Formulating a Plan for Cooperation to Promote the Construction of the Belt and Road," officially marking Serbia's entry into the BRI.

Historic relationship

The Republic of Serbia and the People's Republic of China (PRC) have maintained a diplomatic bilateral relationship since 1995, when Serbia was part of the Federal Republic of Yugoslavia (FRY). But even before Serbia's independence, China established relationships with Yugoslavia in 1955. Serbia became an independent state following the dissolution of the Union of Serbia and Montenegro in 2006, after which its bilateral relationship with China continued.

Present-day relationship

China and Serbia have forged an increasingly close partnership both economically and politically, making the country a focal point of Chinese investment and diplomacy in the Balkans. Although Serbia has been a candidate for European Union membership since 2012, it has simultaneously deepened ties with Beijing through high-profile infrastructure and security cooperation. Flagship projects include the construction of a pedestrian bridge in Novi Sad, the E-763 Miloš Veliki highway, and the renovation of Novi Sad's main railway station. Yet this partnership came under strain in November 2024 when a canopy at the newly renovated station collapsed killing fourteen people—just months after Chinese contractors had completed work on other parts of the site.¹ The disaster triggered a wave of public scrutiny. Investigations into the financing and construction deal revealed the absence of competitive bidding and raised concerns about corruption, fueling criticism of both the Serbian government and its ties to Chinese partners.²

Still, political leaders in both countries have worked to reaffirm the relationship. During a May 2024 visit to Belgrade, President Xi Jinping hailed China and Serbia's "ironclad friendship" as a model of cooperation. In July 2025, the partnership expanded into defense with the first joint *Peace Defenders-2025* military exercise, highlighting ties that now span infrastructure, diplomacy, and security.

¹For more information on the Novi Sad main station incident in November 2024, see BBC (2024):

<https://www.bbc.com/news/articles/c0qdyg8yn5yo>.

²See China Observers EU (2025):

<https://chinaobservers.eu/the-novi-sad-railway-station-collapse-the-cost-of-sino-serbian-infrastructure-deals/>

Overview: Chinese development finance in Serbia from 2000-2023

\$7.4 billion

in loans and grants provided by official sector donors from China.

96%

of Chinese development finance is provided via loans.

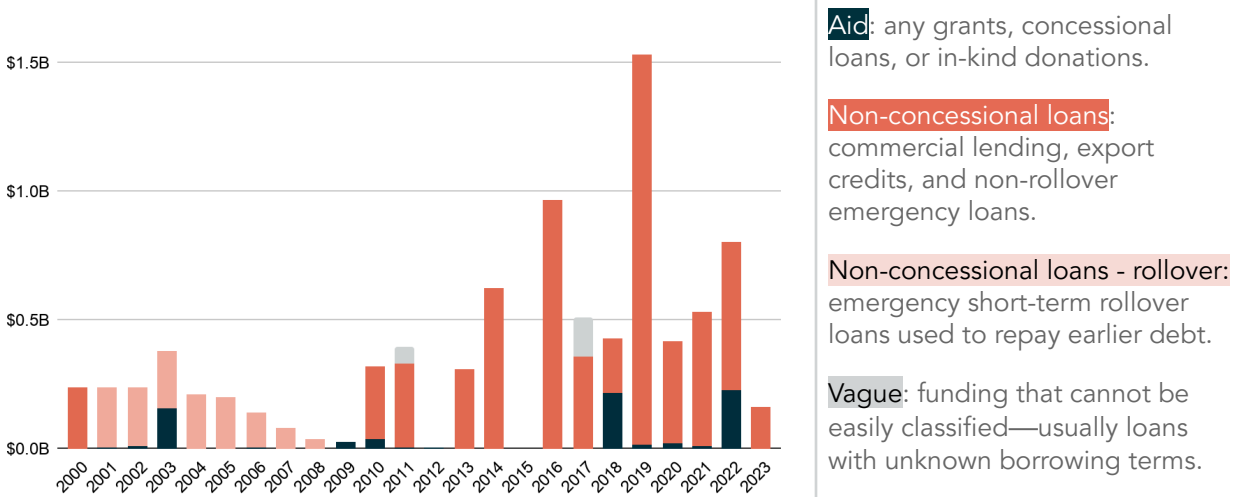
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grants, technical assistance, and training activities offered.

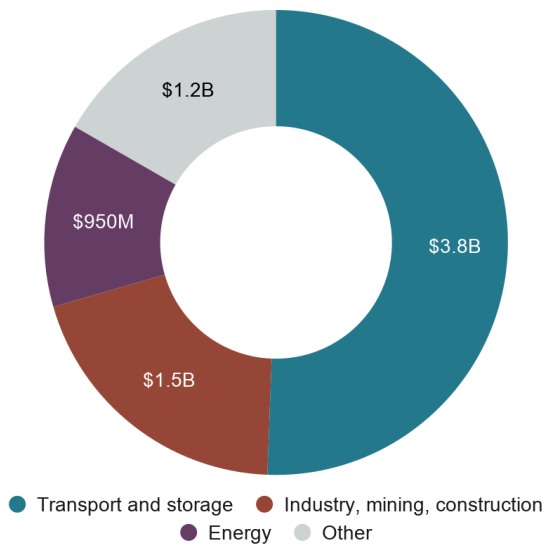
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largest recipient of Chinese aid and credit in Southeast Europe.

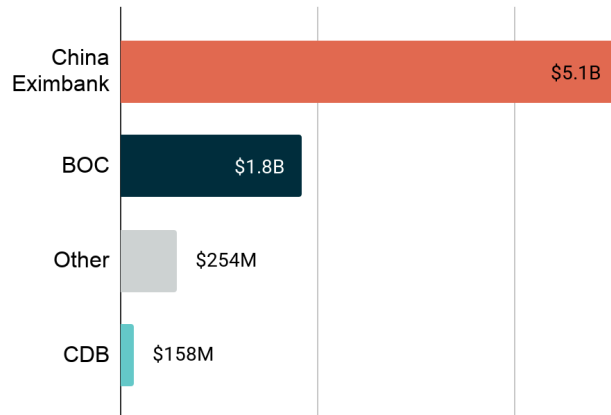
Official sector financial commitments from China to Serbia, 2000-2023



Portfolio by sector



Portfolio by funder



China Eximbank: Export-Import Bank of China; BOC: Bank of China; CDB: China Development Bank

How much development finance has China provided Serbia since 2000?

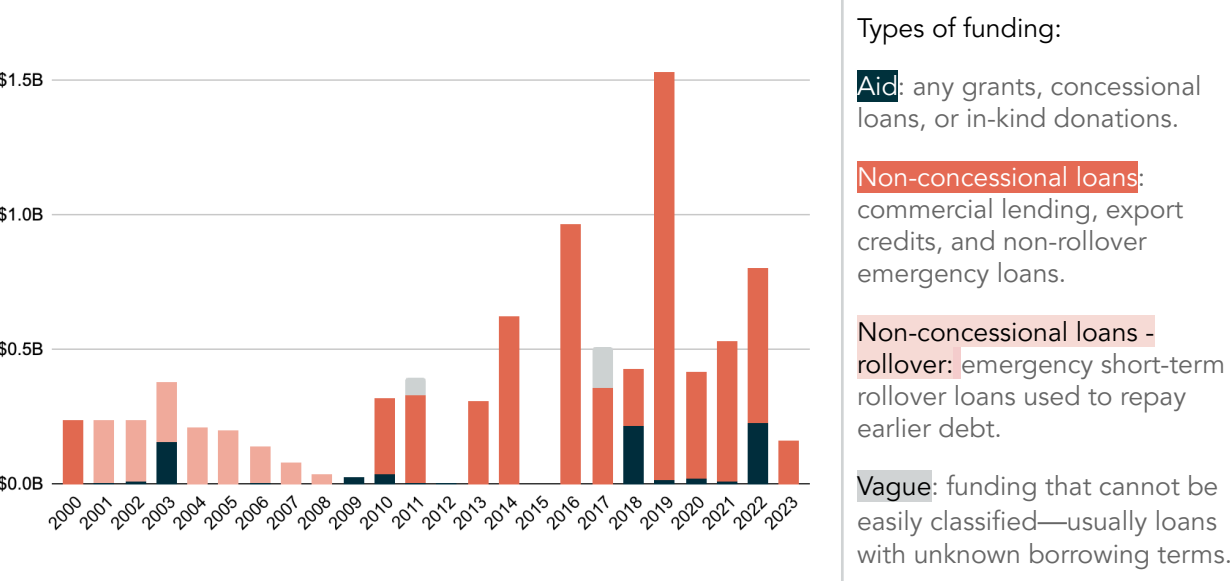
Serbia joined China’s BRI in 2015. However, even before the agreement was signed, China had established itself as a major lender to Serbia (see Figure 1.1). China and Serbia have maintained a bilateral relationship throughout Serbia’s various changes in statehood—from Serbia’s time as a part of the Socialist Federal Republic of Yugoslavia to Serbia’s separation from Montenegro in 2006. The two nations share a comprehensive strategic partnership. The use of the word “comprehensive” demonstrates that both parties have a higher level of mutual relations compared to a regular strategic partnership.³ For a list of bilateral diplomatic visits between China and Serbia in the BRI era, see Appendix A.

Between 2000 and 2023, China’s official sector lenders and donors provided grant and loan commitments worth \$7.4 billion across 125 projects and activities in Serbia. As shown in Figure 1.1, Serbia’s portfolio is overwhelmingly dominated by non-concessional loan commitments, with very little aid—such as grants, concessional loans, or in-kind donations—committed from China over this period.

The peak of Chinese financing to Serbia occurred in 2019, when the country received \$1.4 billion in new aid and non-concessional loans. A significant portion of this total—\$1 billion—came from China Eximbank in the form of a preferential buyer’s credit for the Novi Sad–Subotica–State Border (Kelebija) section of the Hungarian-Serbian Railway Project.⁴

Figure 1.1 also disaggregates China’s non-concessional lending into two categories: net increases in emergency lending, which raise Serbia’s overall debt burden, and rollover emergency lending, which refinances existing debt but does not add to the net stock of debt.

Figure 1.1: Official sector financial commitments from China to Serbia



³ Xiang, H. (2023). What “partnerships” does China have?

⁴ Preferential Buyer’s Credit (PBC) is a lending instrument unique to China Eximbank. PBCs are USD-denominated loans that are granted to foreign government institutions. The recipient government then uses the loan to purchase goods and services from a Chinese supplier.

A notable component of China's financial relationship with Serbia is its emergency rescue lending, though this takes a very specific form. Chinese emergency rescue loans are typically extended to support repayment of existing debts, general public spending, or foreign exchange reserves. These loans can take several forms, such as currency swaps, liquidity support, deposit loans, and commodity prepayment arrangements.⁵

In Serbia's case, however, China only provided rescue loans in the form of deposit loans aimed at bolstering foreign exchange reserves. On December 20, 2000, Bank of China and the National Bank of Yugoslavia (which became the National Bank of Serbia in early 2003) signed a \$100 million short-term deposit loan agreement for this purpose. The original loan agreement specified that the loan would be paid back within 12 months. However, the Bank of China granted annual maturity extensions until it was fully repaid in 2008. From 2000 to 2008, the majority of China's official sector financial commitments to Serbia took the form of these deposit loans. Because these were short-term facilities that were continuously renewed rather than replaced with new loans, they did not contribute to a net increase in Serbia's level of public debt exposure to China. As such, the annual maturity extensions are excluded from the cumulative aid and credit totals reported in this profile. For further details, see Appendix B.

⁵Parks, B. C., Malik, A. A., Escobar, B., Zhang, S., Fedorochko, R., Solomon, K., Wang, F., Vlasto, L., Walsh, K. & Goodman, S. 2023. Belt and Road Reboot: Beijing's Bid to De-Risk Its Global Infrastructure Initiative. Williamsburg, VA: AidData at William & Mary.

How does China compare to other development partners?

China is Serbia's largest bilateral development partner and the European Union is Serbia's largest multilateral development partner (see Figure 1.2). Most funding from EU institutions to Serbia comes from the Instrument for Pre-accession Assistance (IPA). The IPA is a unique EU funding instrument that supports reforms through financial and technical assistance across Europe.⁶ Most of this funding from the EU in Serbia went towards governance reforms and capacity building, combating corruption, the institutionalization of environmental frameworks, and others. Among all of Serbia's bilateral and multilateral donors, China ranks last in terms of aid, with only \$749 million provided between 2000 and 2023. However, China provides significant amounts of non-concessional lending totaling \$6.5 billion, including \$4.5 billion in export credits.

The European Bank for Reconstruction and Development (EBRD) is also a major multilateral lender to Serbia. The bank focuses on financing sustainable infrastructure, green energy transition, and enhancing private sector competitiveness. Since 2001, they have provided \$7.9 billion to Serbia for various projects in those sectors.

Figure 1.2: Top bilateral and multilateral development partners, 2000-2023

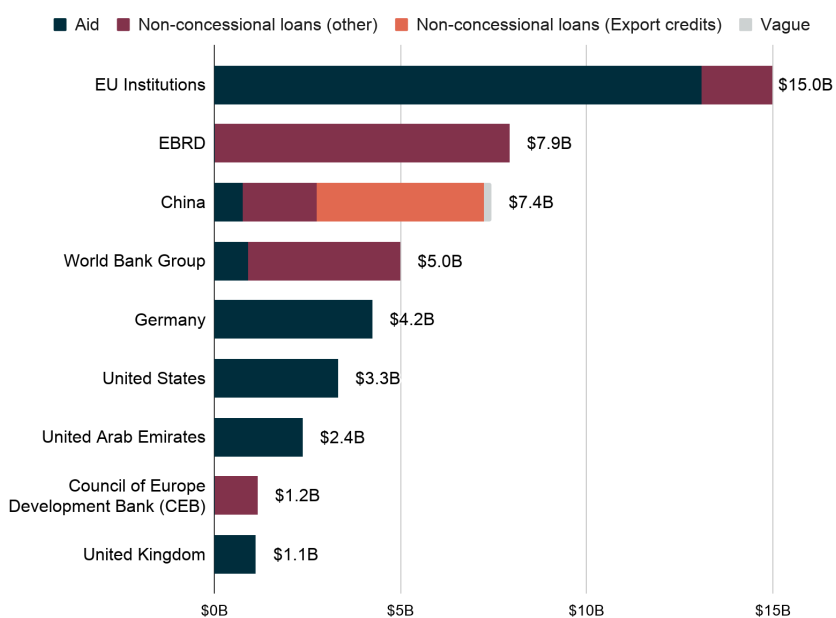


Figure 1.2 contains the top nine development partners providing aid and other financing to Serbia. However, only China has detailed bilateral export credit flows to Serbia. This level of granularity is not available for other development partners as the OECD does not provide export credit data for bilateral relationships; it only provides data on total export credit flows by two aggregate donor groupings, G7 and DAC member countries.

Total export credits from G7: \$768 million.

Total export credits from DAC member countries (including G7): \$2.2 billion.

How does China use export credits?

The central role that export credits play in China's overseas lending portfolio sets it apart from other official sector creditors: Under a so-called "Gentlemen's Agreement" on Officially Supported Export Credits, OECD member countries agreed in 1978 to "tie their own hands" and voluntarily abide by a set of international rules that limit the provision of *subsidized* export credits to domestic companies with overseas operations. However, China never agreed to participate in the "Gentlemen's Agreement" and it has consistently used concessional export credit to help its firms gain a competitive edge in overseas markets.

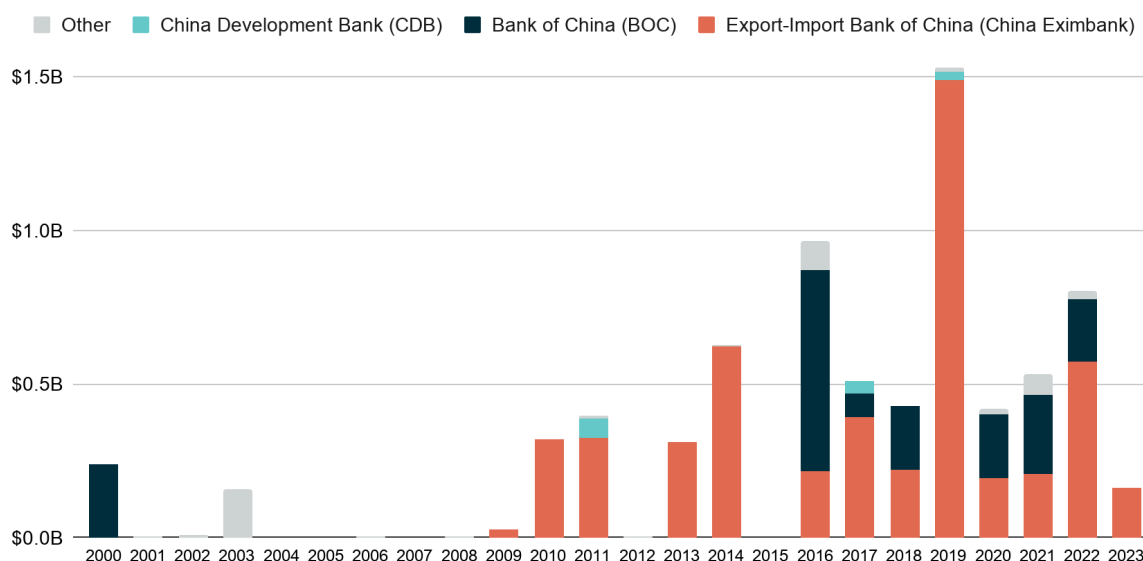
⁶Overview—Instrument for Pre-accession Assistance—European Commission. (2021, October 8).

https://neighbourhood-enlargement.ec.europa.eu/enlargement-policy/overview-instrument-pre-accession-assistance_en

Which donors and lenders from China are active in Serbia?

Between 2000 and 2023, 22 official sector donors and lenders from China provided aid and non-concessional loans to Serbia. 97% of China’s development finance portfolio is provided through three main donors and lenders (see Figure 1.3). The other 3% is provided by a diverse array of government agencies (including central, regional, or municipal government agencies), state-owned commercial banks, and state-owned companies.

Figure 1.3: Top Chinese donors and lenders



Note: This figure excludes emergency rescue lending.

The Bank of China (BOC) was the first Chinese lender to engage with Serbia in the 2000s. This first loan actually went to the National Bank of Yugoslavia, which became the National Bank of Serbia (NBS) in early 2003. The \$100 million short-term deposit loan helped the country bolster foreign exchange reserves after a long period of destabilization due in part to the Yugoslav wars. BOC granted annual maturity extensions until it was fully repaid in 2008. It wasn’t until 2016 that BOC provided a new loan to Serbia—the \$654 million loan for the Zelezara Steel Mill Modernization project. Other noteworthy projects include the Bor Copper and Gold Mine and the Fixed Network ALL-IP Modernization project.

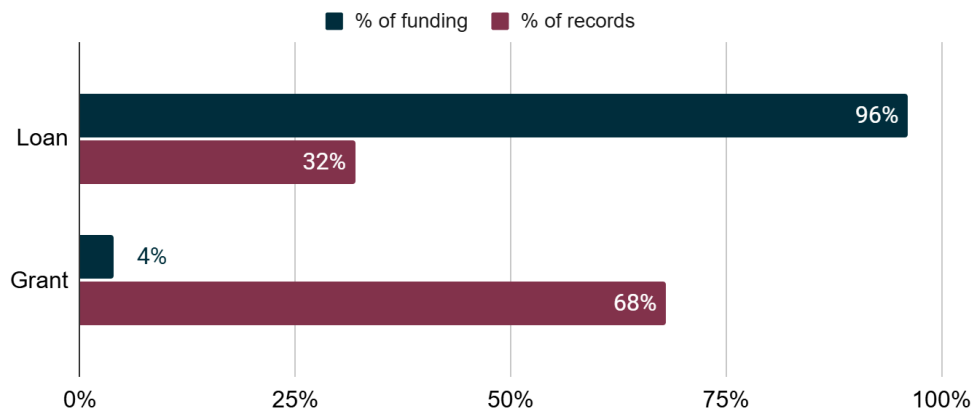
The top Chinese financier in Serbia is the Export-Import Bank of China (China Eximbank). The bank’s first action in Serbia in the 2000s was providing \$25.6 million in debt forgiveness on a loan signed in 1999. In 2010, China Eximbank issued its first new loans to Serbia: a \$38 million loan for the acquisition and maintenance of Nuctech inspection equipment and a \$279 million loan for construction of the Zemun-Borča Bridge and accompanying roads. The bank’s single largest contribution occurred in 2019 when it provided a \$1 billion preferential buyer’s credit for the Novi Sad-Subotica-State Border (Kelebija) Section of the Hungarian-Serbian Railway. All but one of China Eximbank’s loans to Serbia between 2010 and 2023 were for infrastructure projects.

China Development Bank (CDB) provided three loans worth \$131 million between 2000 and 2023. The most recent loan was issued in 2019 to the Postal Savings Bank (Poštanska štedionica), a state-owned bank in Serbia, for \$29 million for on-lending purposes.

What kinds of financial and in-kind support does China offer Serbia?

AidData captures each instance of a grant or in-kind donation as one record, so analyzing the record counts can help provide a better picture of China's activities in Serbia. When looking at record counts, grants account for 68% of all activity records in Serbia (representing 83 records capturing activities taking place between 2000 and 2023).

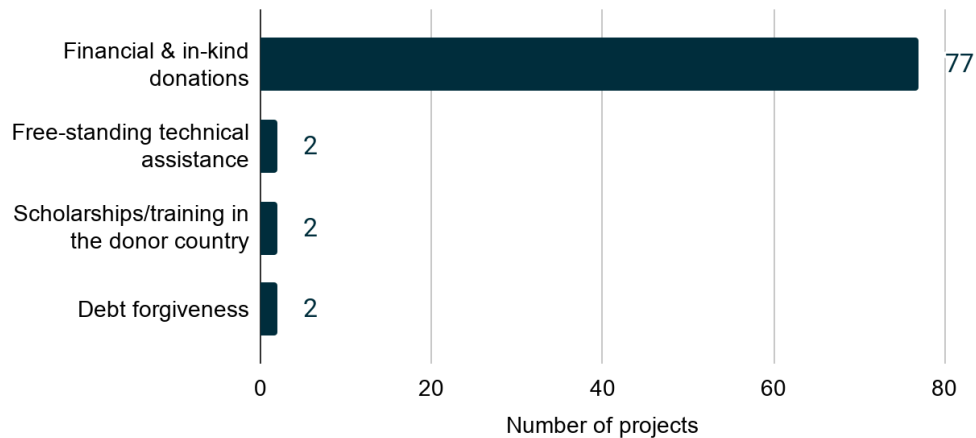
Figure 1.4: Top financial instruments used by China in Serbia



Note: Debt rescheduling and Vague records are excluded from this visual since they are neither loans nor grants.

96% of China's official sector financing to Serbia takes the form of loans (totaling \$7.1 billion), while 4% (\$289 million) comes in the form of grants and in-kind donations. In-kind donations are difficult to monetize, so the monetary values of these activities are likely underrepresented.

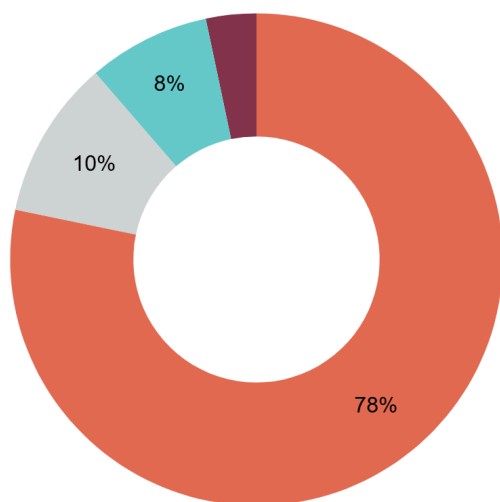
Figure 1.5: Breakdown of grants by project count



From 2000 to 2023, Serbia received \$289 million across 83 grants from official sector Chinese entities. Notable donations include \$29.3 million in COVID-19 support, a national emergency number system worth \$25 million, and \$13 million for the implementation of an artificial intelligence (AI) platform at the Kragujevac State Data Center. Hanban and Zijin Mining Group are two unusual donors in Serbia. Zijin Mining Group operates a mine in Bor, Serbia and as a part of the company's corporate social responsibility, provided 16 grants worth \$3.2 million since it acquired the mine in 2018. Similarly, Hanban is very active at the University of Novi Sad where it set up a Confucius Institute in 2013. Besides financial and in-kind donations, Serbia has received almost \$183 million in debt forgiveness from China in 2003 and 2009. China also

provided training to over 75 different civil servants, representatives of Serbian business, and employees of Zelezara Steel Mill. Finally, Zijin Mining Group set up an eight year scholarship program to provide 100 students with \$700 a year for their studies.

Figure 1.6: Breakdown of lending by purpose



Infrastructure: loans to support the construction, rehabilitation, or maintenance of a physical structure.

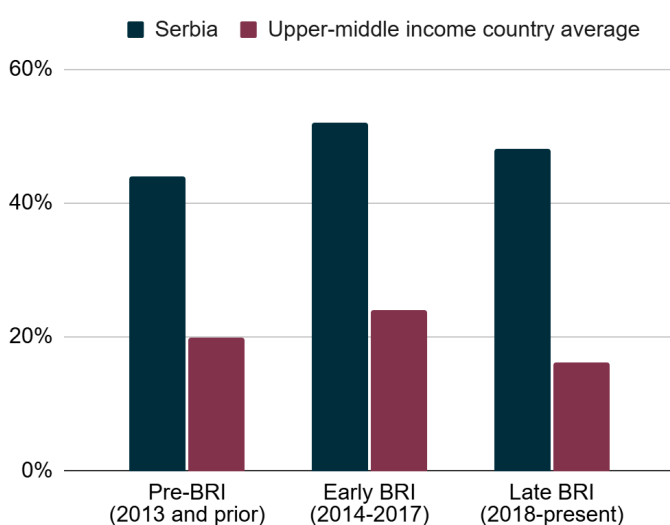
Other: loans for equipment acquisition or unspecified purposes.

Corporate: loans for mergers and acquisitions, working capital loans.

Emergency Lending: emergency rescue loans and rollovers meant to support a country's liquidity.

78% of China's \$7.1 billion in official sector lending to Serbia supports infrastructure projects. Nearly 100% of these infrastructure projects are implemented by at least one Chinese entity, such as a Chinese state-owned or private sector company. 10% of loan commitments fall into the "other" category. The loans in this category primarily include equipment purchases in the telecommunication and mining sectors. Another 8% of loans supports corporate activities, including working capital loans to Serbia Zijin Copper Doo Bor and loans to the Hesteel Group for acquisition of the Zelezara Steel Mill.⁷ 3% of loans to Serbia are emergency rescue loans issued to the National Bank of Yugoslavia, which became the National Bank of Serbia in 2003.

Figure 1.7: Grant element over time



A loan's grant element is a measure of how concessional (i.e. favorable) its terms are relative to market rates. It ranges from 0% (not concessional) to 100% (fully concessional). The grant element of China's upper middle income lending portfolio fluctuated between 24% and 16% from 2000 to 2023. Comparatively, China's lending to Serbia is very concessional because China Eximbank, as the lead Chinese financier, has routinely used its preferential facilities for infrastructure projects in the country.

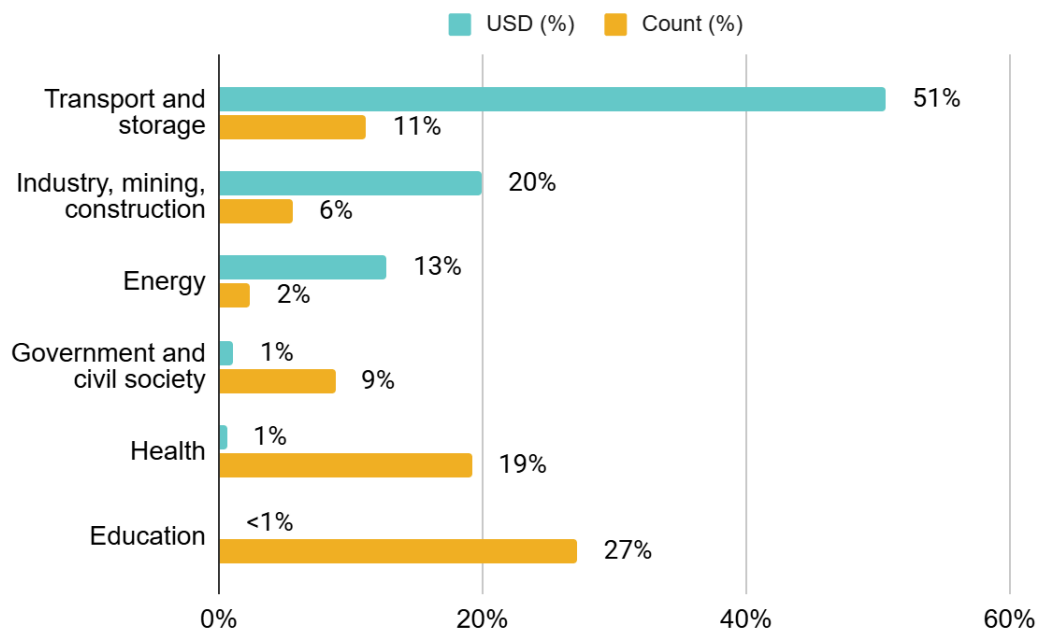
⁷Serbia Zijin Copper Doo Bor is a special purpose vehicle between Zijin Mining Group Co., Ltd. (63% ownership stake) and Rudarsko-Topioničarski Basen RTB Bor Doo (37% ownership stake).

In which sectors is China most active?

Top sectors for China’s aid and credit in Serbia differ greatly when comparing monetary value and record count. Certain sectors, such as health and education, often represent a large percentage of records but offer small or no transaction amounts. In Figure 1.8, we have provided the top sectors by both monetary value and record count to demonstrate this dichotomy.

Figure 1.8: Selected top sectors

Sectors by monetary value and record count



In terms of monetary value, 84% of China’s grant and loan commitments to Serbia supported three core infrastructure (“hardware”) sectors: transportation, energy, and industry, mining, construction between 2000 and 2023.

- **Transportation and storage:** This sector refers to the construction and maintenance of road, rail, air, and water transit infrastructure and is characterized by high-value infrastructure projects. 51% of China’s development finance portfolio in Serbia is specifically dedicated to this hardware sector, representing \$3.8 billion in aid and non-concessional loans. The largest financial commitment from a single source is a \$1 billion preferential buyer’s credit provided by China Eximbank in 2019 for the Novi Sad-Subotica-State Border (Kelebija) Section of the Hungarian-Serbian Railway Project. The second largest financial commitment was a preferential buyer’s credit worth \$575 million by China Eximbank in 2022 for the Fast Road Novi Sad - Ruma Construction Project. In 2023, China Eximbank provided another loan worth \$161 million for the construction of a bypass around Novi Sad with a bridge over the Danube River.
- **Industry, mining, construction:** This sector includes manufacturing fossil fuels, mining for coal, gas, metals, minerals, and construction. Projects in this sector account for \$1.5 billion in funding (or 20% of China’s development finance portfolio). While there were no new commitments to this sector in 2022 or 2023, AidData uncovered three loans

from the Bank of China to Zijin Mining Group Co., Ltd. and the special purpose vehicle, Serbia Zijin Copper Doo Bor.⁸ One loan was provided in 2018 for Zijin Mining Group Co., Ltd. to acquire a controlling stake in Rudarsko-Topioničarski Basen RTB Bor Doo (or 'RTB Bor'), a Serbian state-owned copper mining and smelting complex located in Bor, Serbia. After this acquisition, BOC provided two loans to Serbia Zijin Copper Doo Bor for working capital (2020) and technology upgrade of the mine (2021).

- **Energy:** This sector is the third largest sector by financial value, with \$950 million in funding (or 13% of China's entire portfolio). It encompasses the generation and distribution of renewable and non-renewable sources, as well as hybrid and nuclear power plants. Noteworthy activities in the energy sector include a \$326 million preferential buyer's credit in 2011 and another \$624 million preferential buyer's credit in 2014 from China Eximbank for the first and second phases of Serbia's Kostolac B Power Plant Project. There have been no new commitments to this sector since 2014.

China is also heavily engaged in the "software" sectors, such as education, health, and governance. China's footprint in these sectors is difficult to represent, however, because the activities in these sectors usually attract smaller grant and loan commitments, or represent some form of in-kind donation, technical assistance, etc.

- **Education:** This sector encompasses schooling at the primary, secondary, and post-secondary levels, as well as technical and advanced training activities. Education activities represent \$6.2 million in funding and 27% of China's total record count, with 34 records. Notable activities in the education sector include multiple grants, totaling roughly \$675,000, provided by Hanban to the Faculty of Philosophy at the University of Novi Sad. The Faculty of Philosophy at the University of Novi Sad has been Hanban's main partner since the establishment of the Confucius Institute at the university in 2013.
- **Health:** This sector includes medical care, infrastructure, equipment, and control activities. In total, activities in the health sector represent 24 records in China's portfolio in Serbia worth \$45 million (or 19% of records). Notable activities include Chinese government grants of medical equipment, ambulances and ultrasound devices to Serbian hospitals. In response to the COVID-19 pandemic, China delivered a total of \$29.3 million in aid, including over 700,000 doses of Sinovac and Sinopharm vaccines.
- **Government and Civil Society:** This sector encompasses activities that address public procurement, subnational government support, elections, democratic participation, and human rights. Activities in this sector represent 11 records in China's portfolio in Serbia worth \$84 million (or 9% of records). The largest commitment in this sector was a \$39.5 million loan from CDB for the Belgrade Chinese Cultural Center Construction Project.

At a glance: last 5 years (2019-2023)

- The transportation and storage sector dominates China's portfolio between 2019 and 2023, accounting for 70% of all financial commitments made during this period.
- When considering the number of recorded activities, health and education rank at the top alongside transport and storage during this period, although the financial amount allocated to these two sectors was much lower. In 2023, the new commitments only supported activities in the transport, education, and communications sectors.

⁸ Special purpose vehicles/joint ventures (SPV/JV) are project companies (independent legal entities) that are established to manage the financing and implementation of a particular project. Serbia Zijin Copper Doo Bor is an SPV/JV of Zijin Mining Group Co., Ltd. (63% ownership stake) and Rudarsko-Topioničarski Basen RTB Bor Doo (37% ownership stake).

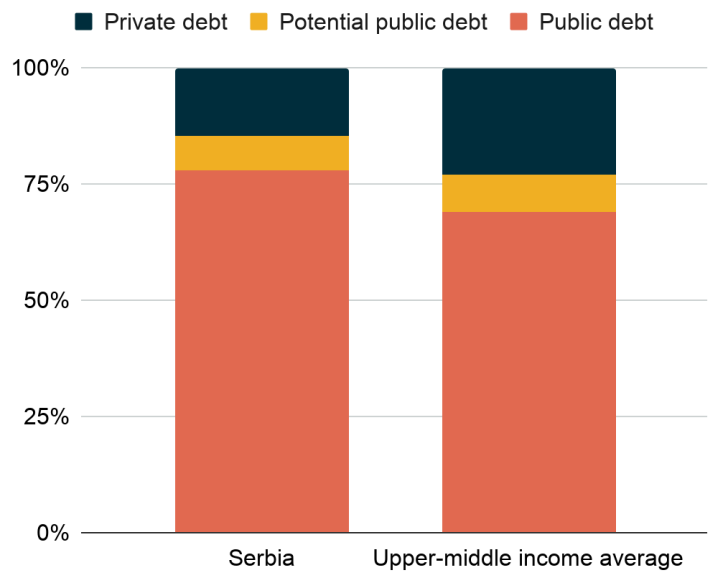
What are the characteristics of Serbia’s debt to China?

39 loans issued	\$7.1 billion total loan commitments	78% of total loan commitments are public debt	0% of total loan commitments show signs of financial distress	\$3.4 billion total public debt outstanding as of 2024
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What is “public debt”?

Public debt (PPG debt) Loans issued directly to public institutions, loans that have sovereign repayment guarantees, or loans extended to special purpose vehicles or joint ventures that are majority-owned by one or more public sector institutions. Often referred to as public and publicly-guaranteed (PPG) debt.	Potential public debt Loans to special purpose vehicles or joint ventures in which recipient governments hold minority equity stakes.	Private or opaque debt Loans to private sector borrowers and entities with opaque ownership structures.
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Figure 1.9: Composition of debt from China by level of public liability
Total debt, 2000-2023— Serbia: \$7.1 billion. Upper-middle income country average: \$8.8 billion.



The composition of Serbia’s debt by level of public liability is largely in line with the average across China’s development finance portfolio.

Serbia’s public debt (78%) is 9 percentage points higher than the average (69%) among other upper-middle income countries receiving funding from China. Private or opaque debt for Serbia (15%) is lower than the upper-middle income average (23%).

Serbia’s potential public sector debt (7%) is in line with other upper middle income countries (8%).

To date, there is no evidence that China’s cumulative loan commitments to Serbia, publicly guaranteed or not, are in financial distress. Evidence of financial distress includes borrowers accruing principal or interest arrears, defaulting on their repayment obligations, filing for bankruptcy, or renegotiating loan terms (including suspensions of principal or interest payments). The World Bank and IMF have not conducted a Debt Sustainability Analysis for

Serbia; however, in the IMF’s latest country report on Serbia, it classified the government of Serbia as having a medium risk for debt distress.⁹ Serbia is also not eligible for the Debt Service Suspension Initiative (DSSI), a G20-initiated initiative to help alleviate debt burdens during the pandemic.

What does Serbia’s current public debt exposure to China look like—and what payments are due?

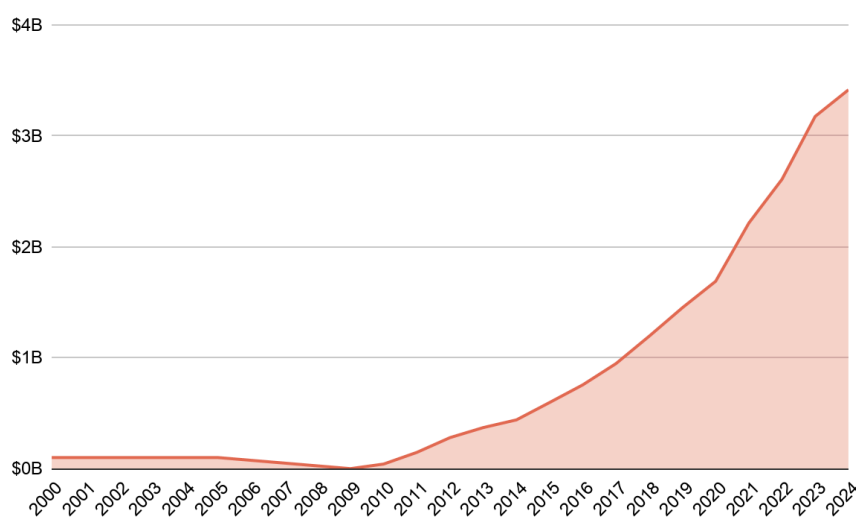
What is “public debt exposure”?

After a loan agreement is signed, financial outflows and reflows take place over many years through a sequence of disbursements (from the creditor to the borrower) and repayments (from the borrower to the creditor).

To understand the timing and magnitude of these financial flows, the 2.0 version of AidData’s Chinese PPG Loan Performance Dataset (LP 2.0) tracks PPG loan disbursements, repayments, arrears, and restructuring events—and how much debt is owed—over time.

Unlike loan commitment totals—that measure what was initially promised—LP 2.0 measures what is still owed at specific points in time and how repayment pressures evolve over time. A country’s level of “public debt exposure” refers to its outstanding PPG repayment obligations. All financial amounts in this section are reported in nominal USD.

Figure 1.10: Outstanding Chinese PPG Debt Stock (nominal USD)



Note: This data is drawn from AidData’s Chinese PPG Loan Performance Dataset, Version 2.0. For more information, please see the methodology.

Figure 1.10 shows Serbia’s outstanding Chinese PPG debt stock, which is the total amount of principal that has been disbursed and remains unpaid at the end of each year as well as any unpaid interest or fees. These estimates are based on loan-level data on disbursements and repayments, which are used to track how outstanding balances evolve over time.

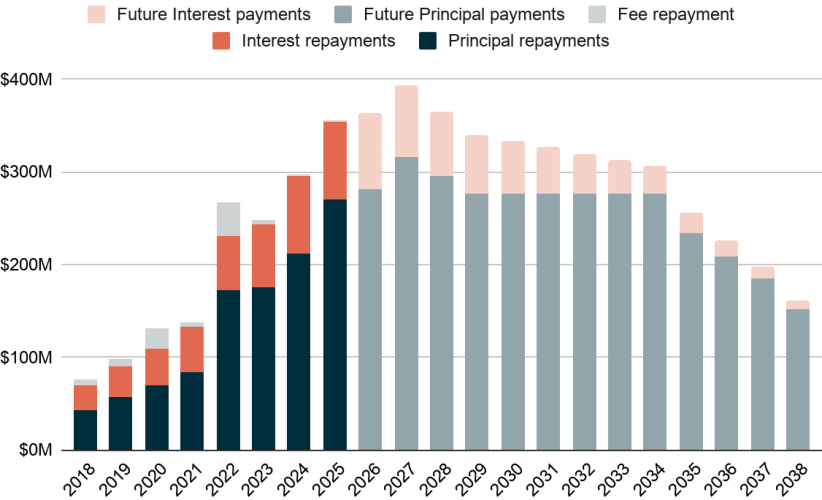
By the end of 2024, Serbia owed an estimated \$3.4 billion in outstanding PPG debt to official sector creditors in China. This was equivalent to about 12% of Serbia’s total PPG external debt stock to all external creditors, indicating that roughly one-eighth of Serbia’s external public debt was owed to Chinese creditors.¹⁰ The total PPG debt stock owed to China represented 3.8% of Serbia’s GDP in 2024.

⁹For more information on the IMF’s evaluation of Serbia’s economy, see <https://doi.org/10.5089/9798400278365.002>

¹⁰World Bank, International Debt Statistics.

Serbia’s outstanding debt to China is tied to 17 active loans. Of these, four loans remain in their original grace period and 13 loans are in their original repayment period. By contrast, three loans have been fully repaid or otherwise closed out by 2024. Based on existing loan commitments through 2023, Serbia is expected to continue paying down its debt to Chinese creditors until 2042.

Figure 1.11: Serbia’s principal and interest payments to Chinese creditors under PPG loans



Note: This data is drawn from AidData’s Chinese PPG Loan Performance Dataset, Version 2.0. For more information, please see the methodology.

Figure 1.11 shows Serbia’s principal and interest payments due to Chinese creditors. Specifically, it displays principal and interest payments 2018-2025 and future principal and interest payments from 2026-2038.

The estimated principal payments are calculated by adding all principal payments due each year. Future interest and principal payments are projected from loan terms.

Between 2018 and 2025, Serbia’s annual principal and interest payments increased steadily, from about \$70 million in 2018 to \$354 million in 2025. The increase was driven mainly by new principal repayments for loans exiting their grace period and entering their repayment period, raising the principal due from about \$42 million in 2018 to \$271 million in 2025. Key examples include two large China Eximbank preferential buyer’s credits: a \$624 million loan for Phase 2 of the Kostolac B Power Plant Project, which entered repayment in 2022, and a \$1 billion loan for the Novi Sad-Subotica-State Border section of the Hungarian-Serbian Railway Project, which entered repayment in 2024. Interest payments also increased over the same period, rising from \$28 million in 2018 to \$84 million in 2025. Beginning in 2026, Serbia is projected to continue making sizable repayments to Chinese creditors, peaking in 2027 with nearly \$400 million due in debt service against PPG debts to China that year.

Fee payments were unusually high in 2020 and 2022, totaling about \$58 million across the two years. These spikes appear to reflect loan-specific charges on a small number of large infrastructure projects like the Obrenovac-Novı Beograd Heating Pipeline which included a large insurance premium of nearly \$16 million.

What kind of project implementation challenges has China faced in Serbia?

Chinese-financed infrastructure projects in Serbia:

24

infrastructure projects supported by grants and loans from China

\$5.6 billion

in loan and grant commitments supporting infrastructure projects

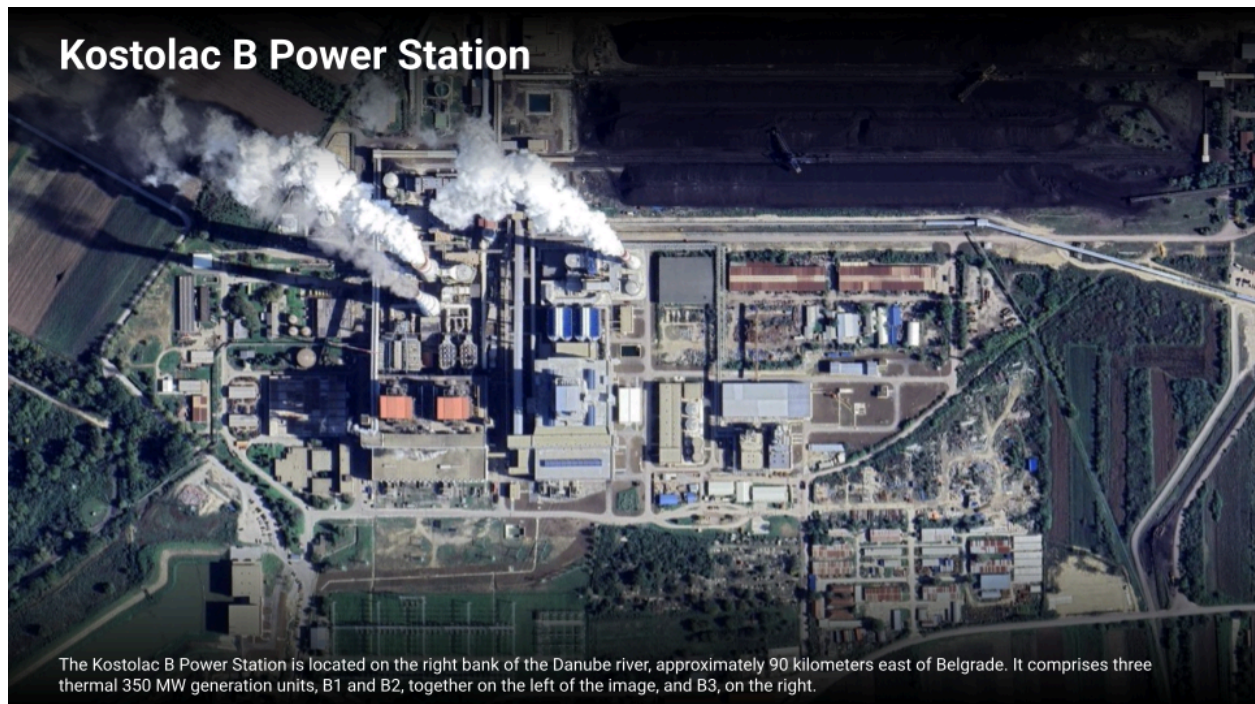
Examples of infrastructure implementation risks:

Environmental: increase in air or water pollution, biodiversity loss, deforestation, increased carbon footprint, or natural resource depletion.

Social: poor labor law compliance, human rights abuses, displacement of local residents, or archaeological or cultural heritage site degradation.

Governance: corruption, money laundering, lack of transparency, and non-competitive bidding processes.

From 2000 to 2023, infrastructure projects accounted for 64.5% of China's development finance portfolio in low- and middle-income countries. These infrastructure projects often face project implementation delays caused by environmental, social, and governance (ESG) risks, episodes of debt distress, or political instability in the recipient country. In Serbia, the Kostolac B Power Plant construction project exemplifies implementation delays from regulatory bodies and civil society as well as fraud within the recipient country.



The Kostolac B Power Plant facility comprises three thermal 350 MW generation units, B1, B2, and B3, commissioned in 1987, 1991, and 2024, respectively. It is located on the Danube river outside the town of Kostolac, approximately 90 kilometers east of Belgrade. It is adjacent to

the Drmno lignite mine, which supplies the plant with coal. The Kostolac B complex is located approximately four kilometers from the original thermal powerplant site, Kostolac A, which has two generation units, commissioned in 1967 and 1980. In 2024, Kostolac B produced a cumulative 4,359 GWh as a result of the B3 unit upgrade.

In December 2011, China Eximbank and the Serbian government signed a \$326 million preferential buyer's credit agreement for the first phase of the Kostolac B Power Plant construction project, which would reconstruct the two existing generation units, B1 and B2, and build a new desulfurization (de-SO_x) system. Upon completion of Phase 1 in 2017, the Kostolac B Power Plant was the first Serbian power station to adopt flue gas desulfurization, helping the country comply with the EU's emission standards. However, the site is scheduled to be decommissioned in 2028 as a result of a 2022 ruling by the High Court in Belgrade ordering the reduction of sulphur dioxide emissions at power plants run by Elektroprivreda Srbije (EPS), a Serbian state-owned power company, due to health risks.

China Eximbank provided another preferential buyer's credit (worth \$624 million) to the Serbian government for Phase 2 of the Kostolac B Power Plant construction project in December 2014. Phase 2 promised to construct an additional 350MW power generating unit, B3, and to expand the adjacent Drmno coal mine. Initially, the construction of the B3 unit was scheduled for completion by the end of 2021, but it faced multiple implementation delays. The first delay came in June 2016 when the Serbian Administrative Court ruled the Ministry of Agriculture and Environmental Protection's approval of the Phase 2 environmental impact assessment (EIA) was illegitimate. Then, in January 2017, a groundbreaking ceremony for the expansion of the coal mine was held. However, at this point, a new EIA for Phase 2 had not been completed for the coal mine expansion. It wasn't until February 2017 that a new EIA for Phase 2 was published for consultation, with details on the coal mine expansion notably absent. The EIA was still approved in September of that year, but was challenged by environmental activists in November for insufficient information and obfuscation. A formal Phase 2 groundbreaking was held in November 2017.

Then, in September 2018, a formal complaint was submitted to the Energy Community Treaty Secretariat by two international organizations for Serbia's failure to require an EIA for the Drmno mine expansion portion of Phase 2. Reports indicate that the local community's request to be relocated from the mine borders had not been accounted for and the expansion did not comply with the most recent European Union pollution standards, which would have been addressed in an EIA.

These issues led to construction progressing slower than anticipated, and in March 2021, Serbia's Deputy Prime Minister and Minister of Mining and Energy met with representatives of China Machinery Engineering Corporation (CMEC), one of the implementers, to discuss issues with the project, including slow progress and subpar equipment provided. The meeting concluded amicably but the project was not freed from delays and controversy. In February 2023, six people associated with the implementation of Phase 2 were arrested and accused of embezzling \$7.48 million from EPS. The contracted works and supervision services for B3 were rescheduled June 2023 and B3's commissioning was rescheduled for October 2023 due to these challenges with the project. In October 2024, the B3 unit was finally commissioned and put into operation nearly three years after the planned completion date.

How does Chinese financing to Serbia compare to other countries in Southeast Europe?

Between 2000 and 2023, Chinese official sector financiers directed 499 loans and grants to Southeast Europe worth \$17.5 billion. Figure 1.12 provides a cumulative view of China’s aid and credit portfolio in the region. Over 69% (\$12.1 billion) of China’s development financing to the region occurred between 2014 and 2023, the early and late BRI periods. The annual average financing committed during these years was \$1.2 billion, well above the pre-BRI annual average of \$384 million between 2000 and 2013.

Figure 1.12: Cumulative financial commitments from China to Southeast Europe, 2000-2023¹¹



Serbia received 43% (\$7.4 billion) of China’s financing to the region between 2000 and 2023, making it the largest recipient in Southeast Europe. Other top recipients include Greece, receiving 17% (\$3 billion) of China’s financing to the region, and Bosnia and Herzegovina (14% or \$2.4 billion). The least financed recipients in the region are Romania, receiving commitments worth \$673 million, Albania (\$118 million), Croatia (\$54 million), and Kosovo that received no Chinese financing. Virtually all (98%) of Chinese financing in this region was provided as loans rather than grants.

Transport is the top sector in Southeast Europe by a wide margin in terms of financial commitments from China, accounting for 50% of all Chinese financing in the region. Other priority sectors for China’s portfolio in the region include energy (25% of financing in the region) and industry, mining, construction (10%). Countries in which China’s portfolio favors the transport sector include Serbia (51% of China’s financing to the country), Greece (80%), North Macedonia (78%), and Montenegro (94%), while most other countries in the region receive more financing for the energy sector than the transport sector.

Infrastructure projects account for 68% of Chinese financing to Southeastern Europe. China’s portfolio in Serbia aligns with this priority, with 75% of financing in this country allocated for infrastructure projects. Big ticket infrastructure projects in the region include the Bar-Boljare Highway Project in Montenegro, the Stanari Thermal Power Plant in Bosnia and Herzegovina, the Kostolac B Power Plant Project in Serbia, the Kicevo-Ohrid Motorway Construction Project in North Macedonia, and the Piraeus Container Terminal Franchise Project in Greece.

¹¹Bulgaria, Croatia, Romania, and Greece are high income countries.

Appendix A: Public opinion and bilateral diplomatic visits between China and Serbia in the BRI era

Serbia holds slightly favorable views towards China. According to data captured by Gallup, the Serbian population held an average approval rate of 70% toward China and its leadership between 2007 and 2024.¹² Serbia’s approval rate is slightly higher than the global average, which was 59% during the same time period. Opinion toward China in Serbia was least favorable in 2014, with 62.1% approving of China’s leadership, due to the risks China’s close relationship with Serbia posed to Serbia’s EU membership talks. Since 2014, views have become more favorable than ever before, with a peak of 82% approval in 2018, although the COVID-19 pandemic caused a slight decrease in favorability in 2020.

Figure A.1: Serbian approval of Chinese leadership, 2006-2024¹³

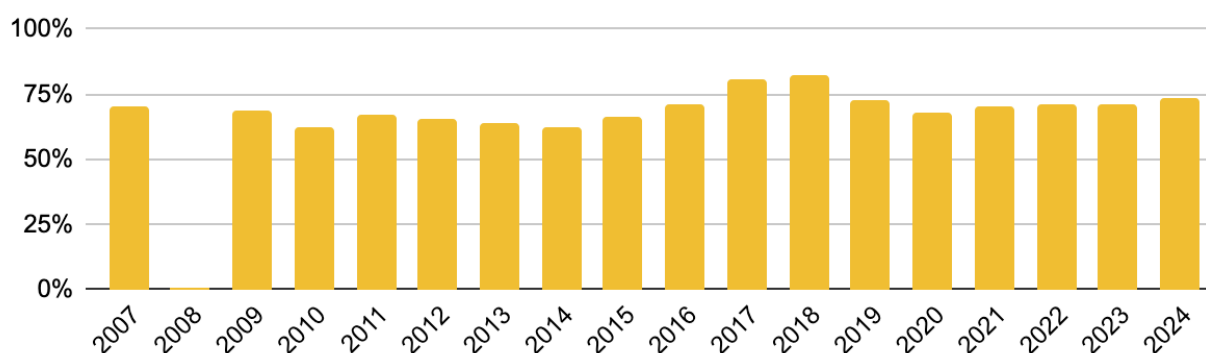


Figure A.2: Bilateral diplomatic visits between China and Serbia

2015 AUG	Serbian President Tomislav Nikolić visited Beijing and held diplomatic talks with President Xi Jinping.
2016 JUN	President Xi visited Serbia and met with Prime Minister Vučić, the first visit from a Chinese head of state in 32 years. Diplomatic relations were elevated to a comprehensive strategic partnership.
2018 SEP	New Serbian President Aleksandar Vučić visited Tianjin, China and met with President Xi ahead of the Summer Davos Forum annual meeting.
2023 OCT	President Vučić visited Beijing and met with President Xi. Eighteen cooperation agreements (including the Serbia-China Free Trade Agreement) were signed.
2024 MAY	President Xi visited Serbia for the first time since 2016 to meet with President Vučić and signed 28 cooperation agreements.

¹²This data comes from Gallup’s World Poll which started in 2005. Gallup conducts the survey in various frequencies on a country-by-country basis; therefore, the years we have data for vary and there are gaps pre-2006 and, in some cases, between 2006-2024. For Serbia, there is no Gallup data prior to 2007 and no data for 2008. For more information on the Gallup methodology see <https://www.gallup.com/178667/gallup-world-poll-work.aspx>

¹³The data for the graph and approval rate is based upon Gallup’s Rating World Leaders’ report and dataset.

Appendix B: Methodology & definitions

Capturing Chinese development finance methodology:

The insights in this profile are derived from AidData's China Global Loans and Grants 1.0 dataset. For more details regarding the methodology used to assemble the data, please refer to the Tracking Loans and Grants from China to Low-, Middle-, and High-Income Countries: An Application of AidData's TUFF 4.0 Methodology. All financial values reported in this profile represent USD Constant 2023 prices, unless otherwise stated.

Definitions of finance types:

- Aid: Includes any grant, in-kind donation, or concessional loan (i.e., loans provided at below-market rates and categorized as ODA in CLG 1.0).
- Non-concessional loans: Captures export credits and loans that are priced at or near market rates (i.e., non-concessional and semi-concessional debt categorized as OOF in CLG 1.0).
- Vague: Any official financial flows that could not be reliably categorized as "aid" or "non-concessional loans" because of insufficient information in the underlying source material.

Definitions of instrument types:

- Grant: The donation of money or an in-kind donation of goods from an official sector institution in China (e.g. donations of supplies or equipment, humanitarian aid or disaster relief, or financing for the construction of a government building, school, hospital, or sports stadium).
- Free-standing technical assistance: Skills training, instruction, consulting services, and information sharing by official sector entities and experts from China. Training provided by Chinese entities outside of China is classified as technical assistance.
- Scholarships/training in the donor country: Funding from an official sector institution in China that allows a citizen from the host country to study at a Chinese university or other educational institution. This includes training programs and activities that are sponsored by an official sector institution in China and held for host country citizens in China.
- Debt forgiveness: The total or partial cancellation of debt owed by a borrowing institution in the host country to a Chinese government or state-owned entity.

Development finance to Serbia from other donors

All data on development finance from other donors came from the Organisation for Economic Co-operation and Development's Development Assistance Committee (OECD DAC) Creditor Reporting System (CRS). The CRS is the OECD's aid activity database, which compiles activity-level statistics from all providers who report to the OECD. For the analysis in Figure 1.2, 'Aid' represents Official Development Assistance (ODA) grants and loans. Non-concessional loans represent the Other Official Flows (OOF) measure. However, the flows captured in CRS (which are project-level records) specifically exclude export credit flows (due to their potentially sensitive nature). Data on export credits is available in OECD's DAC2B database in aggregate form. DAC2B provides data on OOF loans and grants and gross export credits. However,

consistent and comprehensive data on export credits from one development partner to a specific country are not available. Gross export credits to a specific country are available at an aggregate level, such as G7 or all DAC Members.

Emergency rescue lending & rollover facilities:

Emergency rescue loans are loans from Chinese state-owned entities to government borrowing institutions in low-income and middle-income countries that are used for at least one of three purposes: (1) repaying existing debts, (2) financing general public expenditures, or (3) shoring up foreign exchange reserves. Such loans include borrowings via currency swap agreements, liquidity support facilities, foreign currency term financing facility agreements, deposit loans, commodity prepayment facilities, and so-called “sovereign loans”¹⁴.

Short-term emergency rescue loans represent an increasingly important part of China’s overseas portfolio of loans to LICs and MICs. Nearly all of these borrowings, which are typically used to refinance maturing debts, carry de jure maturities of one year or less (i.e., they are initially scheduled for repayment in 12 months or less). However, it is not unusual for financially-distressed LICs and MICs to receive short-term emergency rescue loans from the same Chinese creditor in a series of consecutive years. This relatively new feature of China’s overseas lending program raises an important question about how to accurately estimate the cumulative stock of official financial flows—or lending commitments—from China to the developing world. In countries that receive roll-over emergency rescue loans, this profile reports the full transaction amount (including short-term roll-over facilities) for Figure 1.1. All other visuals exclude these short-term rollover facilities.

Financial Distress:

This profile includes a measure of “financial distress,” defined as loans that show evidence of principal or interest arrears, default on repayment obligations, borrower bankruptcy, or the renegotiation of loan terms (including suspensions of principal or interest payments). The inclusion of restructured loans in this definition represents a methodological change; as a result, the share of cumulative loan commitments classified as distressed in this version of the profile may be higher than in previous versions.

Project implementation challenges methodology:

To better understand the implementation challenges within China’s overseas infrastructure portfolio, AidData developed a new coding framework to systematically identify and categorize environmental, social, and governance (ESG) problems associated with Chinese-financed infrastructure projects in low- and middle-income countries. Under this framework, AidData flags projects when there is credible evidence of a significant environmental, social, or governance issue arising before, during, or after the implementation of a Chinese-financed infrastructure project.

Common ESG challenges in infrastructure projects:

- Environmental: Negative effects on the environment due to building, rehabilitating, or maintaining a physical structure. These include an increase in air or water pollution, biodiversity loss, deforestation, increased carbon footprint, or natural resource depletion.

¹⁴Parks et al. (2023)

- Social: Negative effects on different groups of people due to the infrastructure project, such as employees, nearby residents, Indigenous populations, or community members. Such negative effects include poor labor law compliance, human rights abuses, displacement of local residents, or archaeological or cultural heritage site degradation.
- Governance: Negative effects related to the infrastructure project's financial, legal, and ethical management during the design and implementation of the project. These can include corruption, money laundering, lack of transparency, and non-competitive bidding processes that lead to higher project costs and/or poor project quality.

Loan Performance Methodology

AidData's Chinese PPG Loan Performance Dataset 2.0 is a loan-level dataset that tracks the disbursement, repayment, arrears, restructuring, and outstanding debt trajectories of public and publicly guaranteed (PPG) loans issued by Chinese state-owned creditors to low- and middle-income countries. Building off the detailed loan commitment records captured in the 3.1 version of AidData's Global Chinese Development Finance dataset, the 2.0 version of the Loan Performance dataset tracks 3,100 Chinese PPG loans issued to 124 borrowing countries between 2000-2022. The dataset synthesizes over 11,000 independently-sourced, loan-level performance observations drawn from public debt reports and repositories, stock exchange filings, bond prospectuses, and audited financial statements. These pieces of information are leveraged in conjunction with amortization schedule modeling techniques to create the best approximation of each loan's financial performance over time.

Each loan is represented through three complementary amortization models. The "planned model" constructs an amortization schedule based only on original commitment terms and assumes full and timely repayment without deviations. The "perfect compliance" model incorporates observed disbursements and time-varying interest rate benchmarks (for floating-rate instruments) while still assuming payments occur as scheduled. The "actual performance" model integrates observed disbursement and repayment behavior, time-stamped debt stock values, and credit events including arrears, missed payments, and restructuring agreements (e.g., DSSI-related deferrals) to reconstruct each loan's realized trajectory. Together, these models enable comparisons between the repayment burdens implied at signing and the repayment burdens realized over time, and they support consistent aggregation of debt service and debt stock across loans and countries.

The debt stock statistics in this profile are calculated from "actual performance" model outputs and are aggregated across all PPG loans for a given borrower country and calendar year. Figure 1.10 displays the country's outstanding Chinese PPG debt stock by year. This measure captures the estimated balance of loan amounts outstanding at the end of each calendar year across all Chinese PPG loans to the borrower. The measure combines observed debt stock data with modeled amortization schedules and includes both remaining principal and any unpaid interest charges. Figure 1.11 shows the country's annual debt service payments on Chinese PPG loans, including both principal and interest payments. These variables include normal debt service as well as altered payments associated with debt service suspensions and restructuring agreements.

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The insights in this profile are primarily derived from the 1.0 version of AidData's China's Global Loans and Grants dataset and the 2.0 version of AidData's Chinese PPG Loan Performance Dataset, although it also draws upon ancillary data from other sources. CLG-Global 1.0 is a uniquely comprehensive and granular dataset that captures 33,580 projects across 217 low-, middle-, and high-income countries supported by loans and grants from official sector institutions in China worth \$2.2 trillion. It tracks projects over 24 commitment years (2000-2023) and provides details on the timing of project implementation over a 26-year period (2000-2025). An accompanying report, [Chasing China: Learning to Play by Beijing's Global Lending Rules](#), analyzes the dataset and provides myth-busting evidence about the changing nature, scale, and scope of China's overseas finance program.

For the subset of grant- and loan-financed projects and activities in the dataset that have physical footprints or involve specific locations, AidData has extracted point, polygon, and line vector data via OpenStreetMap URLs and produced a corresponding set of GeoJSON files and geographic precision codes. The GCDF 3.0 geospatial data and precision codes are provided in [AidData's Geospatial Global Chinese Development Finance Dataset, Version 3.0](#) (Goodman et al, 2024).

For any questions or feedback on this profile, please email china@aiddata.org.



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