Financial Sanctions and the Global Payments Network*

Gregor Matvos† Brent Neiman‡

February 2026

Abstract

Financial sanctions targeting banks are widely viewed as powerful tools of economic statecraft. This is particularly true for sanctions imposed by the United States, in part reflecting the central role of the U.S. dollar in global payments. Yet there is limited systematic evidence on how financial sanctions affect access to the global payments system. We fill this gap by combining data on the network of correspondent banking relationships—a system that facilitates cross-border payments by linking banks across currencies and countries—with U.S., EU, and UK sanctions lists since 2021, a period of rapid growth in the designation of financial institutions. Comparing sanctioned institutions to unsanctioned peers in the same country, we find that sanctions substantially reduce access to the global payments network by severing key correspondent relationships, particularly those that provide the most direct access to currencies such as the U.S. dollar. However, sanctions do not eliminate connectivity: sanctioned institutions often retain indirect access by routing payments through longer and more fragile chains of intermediaries. Further, at the country level, sanctions induce a reconfiguration of payment networks. In countries where sanctions expanded sharply, such as Belarus, Kyrgyzstan, Myanmar, and Russia, unsanctioned banks developed or expanded alternative correspondent relationships, especially in Chinese yuan. Outside of these heavily-sanctioned economies, on average, the decrease in dollar and increase in yuan correspondent shares are modest.

JEL-Codes: F3, F5, G2

Keywords: Sanctions, Cross-Border Payments, Correspondent Banking Relationships

*We thank Ben Fraser and Jade Peng for excellent research assistance.

†Northwestern University, Kellogg School of Business, and NBER; gregor.matvos@kellogg.northwestern.edu.

‡University of Chicago, Booth School of Business, NBER, and CEPR; brent.neiman@chicagobooth.edu.

1 Introduction

The use of financial sanctions has surged in recent decades. In 2000, the U.S. Treasury's primary sanctions list—the "Specially Designated Nationals" (SDN) list—contained fewer than 1,000 entries; today, it includes nearly 20,000 individuals, vessels, and entities, including a growing number of banks and other financial institutions. Financial sanctions—particularly those imposed by the United States—are widely viewed as a powerful tool of economic statecraft, in part reflecting the central role of the U.S. dollar in global payments. Yet there is limited systematic evidence on how such sanctions affect banks' access to cross-border payments and the global financial system.

In this paper, we study how financial sanctions reshape banks' access to the global payments network, focusing on the correspondent relationships that allow financial institutions to make or receive payments in various currencies and countries. We quantify how sanctions affect both targeted and untargeted institutions and demonstrate how disruptions can propagate from individual banks to reshape patterns of currency use in the broader financial system.

Consider, for example, a Belarusian fertilizer producer that exports to a customer in Azerbaijan and invoices for payment in U.S. dollars. If the exporter's bank in Belarus (the "respondent") maintains a correspondent relationship and a dollar account with a large U.S. bank (the "correspondent"), the transaction is straightforward. The customer's bank would route payment through the U.S. correspondent and the payment would settle on the Federal Reserve's balance sheet, making the Belarusian bank's dollar claim final and free of counterparty risk. When the Azerbaijani buyer's payment arrives, the U.S. bank credits the Belarusian bank's account, which then passes funds to the exporter. Transfers like this, via the correspondent banking network, form the backbone of global cross-border payments in all major currencies.

Next, consider how this process changes under sanctions. If the Belarusian bank were sanctioned by the United States, its U.S. correspondent would likely sever their relationship.[1] As a result, the Belarusian exporter may need to switch to a different local bank, invoice in another currency with payment facilitated by other correspondents, or countenance their bank routing dollar payments through more indirect chains of intermediaries. Each option is likely more costly and less reliable than the original direct access to the U.S. correspondent.

Finally, consider how the environment changes when such disruptions affect many banks within a country. Unsanctioned institutions, worried about future sanctions or responding to shifts in demand from customers, may also adjust their correspondent relationships to maintain or expand access to payments in currencies other than the dollar. As a result, the effects of sanctions can extend beyond

[1] Further, the cut in ties need not be limited to U.S. correspondents if the designation includes secondary sanctions, whereby banks in any jurisdictions can themselves be designated if they transact with the originally sanctioned institution. For example, in November 2024, Gazprombank and six of its foreign subsidiaries were added to the SDN list as part of U.S. sanctions related to Russia's invasion of Ukraine. Based on the specific authority invoked, non-U.S. banks can be designated if they transact with Gazprombank.

individual banks and reshape how an economy connects to the global payments network.

We explore these issues using data on correspondent banking relationships and sanctions exposure from LexisNexis Risk Solutions (LNRS), a commercial provider of licensed datasets collected from external sources on global banking relationships and sanctions data. These data are licensed by financial institutions as inputs into their own payments-routing analyses and sanctions-screening processes. They allow us to directly observe how banks are connected through correspondent relationships across currencies and countries and to track how those relationships change over time.

Sanctions on financial institutions increased sharply between 2021 and 2025, with the United States, European Union, and United Kingdom often designating the same banks, albeit with staggered timing. Most of this increase reflects sanctions on Russian banks, but several other countries—including Belarus, Kyrgyzstan, and Myanmar—also experienced substantial increases in the share of their financial sectors under sanction. Importantly, even in these heavily sanctioned economies, not all banks are designated, leaving a mix of sanctioned and unsanctioned institutions. We exploit this variation using a difference-in-differences approach that compares changes in the connectivity to the global payment system of sanctioned and unsanctioned banks within the same country. This allows us to control for common shocks to the domestic economy and financial system and isolate the impact of sanctions on correspondent relationships.

We document three main findings. First, at the bank level, sanctions substantially reduce access to the global payments network by severing or degrading correspondent relationships across currencies and jurisdictions. These effects are broad-based: sanctioned banks lose not only correspondents in currency-issuing countries—relationships that provide the most direct access to payments in those currencies through central bank accounts—but also indirect access through correspondents in third countries. For example, banks sanctioned by the United States lose dollar clearing arrangements with U.S. banks as well as dollar clearing arrangements with European and Asian banks. The contraction in relationships is observed across major currencies, including the dollar, euro, pound, and yuan.

Second, despite these large reductions, sanctioned institutions often retain partial and indirect access to the global payments system. Rather than eliminating connectivity altogether, sanctions may shift banks away from direct and reliable relationships toward longer and more fragile chains of intermediaries—for example, routing a dollar payment through a sequence of banks in third countries rather than clearing directly through a U.S. correspondent, or shifting to correspondent relationships in currencies that feature less correspondent connections to other countries. This distinction between direct and indirect access is central to understanding how sanctions operate in practice: the network structure of correspondent banking allows payments to be rerouted even if that involves increased costs, delays, and counterparty risk.

Third, sanctions can change the behavior of unsanctioned banks and, at the country level, induce a reconfiguration of payment networks. During 2021-2025, countries with large increases in sanc-

tion such as Belarus, Kyrgyzstan, Myanmar, and Russia re-oriented their connectivity toward yuan-denominated correspondent relationships. In large part due to the behavior of their unsanctioned banks, the share of yuan correspondents in those countries rose by 2 to 10 percentage points, with increased connectivity to Chinese banks and to China's CIPS payment system.

In the small set of heavily sanctioned countries, we document clear substitution away from Western correspondents and toward alternative clearing arrangements. However, we do not observe a strong global shift away from dollar-based correspondent relationships. Across the universe of emerging and developing economies, changes in currency composition are modest, with the dollar share declining and the yuan share increasing by less than 1 percentage point on average.

Taken together, these results show that financial sanctions operate by degrading access to the global payments network rather than eliminating it altogether. Sanctioned banks lose the most direct and reliable correspondent relationships—particularly those that provide immediate access to payments in major currencies—but often retain more limited access through longer and more complex chains of intermediaries. At the same time, unsanctioned banks within affected countries adjust their own correspondent relationships, partially re-routing payment activity through alternative institutions and currencies. These patterns highlight the central role of correspondent banking networks in shaping how disruptions propagate: rather than breaking connections entirely, sanctions add friction and reconfigure the paths through which payments are routed.

2 Literature on Sanctions and Cross-border Financial Linkages

A limited set of papers, many from the policy community, emphasize the importance of correspondent banking relationships for the ability of countries to efficiently import, export, and transact in the global economy. These papers, including Erbenova, Liu, Kyriakos-Saad, Mejia, Gasha, Mathias, Norat, Fernando and Almeida (2016), Mundial (2015), and Grolleman and Jutrsa (2017), discuss the possibility that sanctions, as well as tighter anti-money laundering (AML) and countering the financing of terrorism (CFT) rules, may lead to the erosion of correspondent banking relationships and a less stable and efficient global system for cross-border payments. Sure enough, Rice, von Peter and Boar (2020) documents a broad-based 20 percent decline in the number of global correspondent banking relationships during 2011-2018.

Cipriani, Goldberg and La Spada (2023) offers a history of the use of financial sanctions, dating back at least to the 1950s, when the United States made it illegal for U.S. nationals to make any financial transaction involving North Korea. It notes the importance of the correspondent banking system for making cross-border payments and discusses how sanctions have made it illegal for the key messaging services provider on the system, the Society for Worldwide Interbank Financial Telecommunication (SWIFT), to work with designated banks. Robinson, Dörry and Derudder (2023) also provides

background on how financial sanctions can operate through SWIFT and correspondent banking.

Fracassi, Lee and Roukny (2025) uses the staggered timing of Financial Action Task Force (FATF) mutual evaluations to assess the causal implications of AML standards on aggregate outcomes such as trade and FDI, which they speculate reflects weaker correspondent banking relationships among other factors. Similarly, Collin, Cook and Soramaki (2016) looks at the impact of countries being added to the FATF's high risk grey list on the volume of payment messages sent and received. Borchert, De Haas, Kirschenmann and Schultz (2024) zooms in on several cases where correspondent banking relationship links are broken due to AML regulation and associates those broken links with reduced exports from the banks' customers.

Our paper adds to this body of work by offering the first complete global view of the correspondent banking network and merging it with high frequency data on the enactment of sanctions. Our data span 2021-2026, a period with rapid growth of financial sanctions, and we are able to study changes in correspondent banking relationships immediately before and after designations are made.

More generally, our work relates to cross-border payments, the role of correspondent banks, and the prospect for innovation from fintechs and others. Myles (2025) considers these issues in the context of the history of correspondent banking relationships and their evolution from 1870 to 2000. Perez-Saiz, Zhang and Iyer (2023) and Cerutti, Firat and Hengge (2025) use data from SWIFT to size the total gross value of cross-border payments and to characterize currency usage in the system. Chung (2025) incorporates correspondent banks into a Melitz (2003) trade model to study the welfare implications of alternative payment technologies, like Central Bank Digital Currencies (CBDCs).

Finally, our paper relates to a burgeoning literature on geoeconomics, which studies how countries can strategically use leverage from their economic and financial linkages to achieve economic or non-economic goals. Classic contributions include Hirschman (1958) and Hirschman (1980), while influential recent work has been led by Farrell and Newman (2019), Clayton, Maggiori and Schreger (2023), and Clayton, Maggiori and Schreger (2024). Mohr and Trebesch (2025) offers a useful review.

3 Correspondent Banks, Central Banks, and the Payments Network

Cross-border payments differ fundamentally from domestic payments because they lack a single central bank that provides universal access to settlement in a given currency. In domestic systems, large banks settle payments by transferring balances between their accounts held at the central bank, ensuring speed and finality while eliminating counterparty risk. For cross-border payments, including those involving foreign currencies, no single central bank covers both sides of the transaction. Instead, banks must hold accounts with other banks—correspondents—that provide access to settlement in the relevant foreign currency.

To see how this works, consider a bank located outside of the United States that wants to receive

a payment in U.S. dollars. To do so, it must maintain a *dollar* account with a correspondent that can credit it. If the bank making the payment also holds a *dollar* account with the same correspondent, the transaction can be completed within a single institution by debiting one account and crediting another. However, if the sending and receiving banks do not share a common correspondent for U.S. dollar transactions, the payment must be routed through a longer, more fragile chain of correspondent institutions. For example, the receiving bank may hold a dollar account with a regional correspondent, while the sending bank uses a different dollar correspondent, requiring the payment to pass through additional intermediaries that connect the two. In this sense, a bank's ability to receive dollar payments depends on how it connects to this network of relationships.

These chains of correspondent relationships introduce frictions. Payments that pass through multiple intermediaries require a sequence of debits and credits across different institutions, potentially located in different countries and time zones. This increases the scope for delays, higher costs and fees, counterparty risk, and disruptions if any intermediary errs or fails to process the transaction. More fundamentally, a bank's ability to receive funds through a correspondent depends on the solvency and willingness of that institution to honor its obligations, the legal enforceability of those claims, and the correspondent's ability to convert its accounting claims into actual money on demand.

Central banks occupy structurally unique positions in the payment network by mitigating these frictions. For example, many U.S. banks can settle dollar payments with one another by simply transfering balances held at the U.S. Federal Reserve—similar to how transfers work using correspondent accounts, but without the need for intermediaries and with immediate settlement finality.[2] Because all such banks are connected to the same settlement institution, they can transact directly with one another without a direct relationship. Central bank settlement thus collapses chains of risky claims between intermediaries, dramatically shortens the paths through which payments must travel, and increases confidence that claims can be converted to actual currency. As such, direct correspondents—those located in the country that issues the currency and connected to the central bank or payment system—offer improved connectivity to the cross-border payments network compared to indirect correspondents that are located in other countries.

A key contribution of our analysis is to document empirically how sanctions disrupt or sever the links through which banks access the global correspondent banking network and key settlement systems. Sanctioned banks, and unsanctioned banks in heavily sanctioned countries, often lose access to direct correspondents in certain currencies and must instead rely on longer, indirect, and more fragile chains of intermediaries. Sanctions can therefore increase the costs, risks, and complexity of executing cross-border payments, even if access is not eliminated entirely.

[2] In practice, U.S. dollar payments between banks with access to the Federal Reserve are processed through systems such as Fedwire or CHIPS, which facilitate the transfer of central bank balances and interbank claims. The same basic setup applies to other major currencies, including the euro, the British pound, and the Chinese yuan, which settle through the TARGET2, CHAPS, and CIPS systems, respectively.

4 Commercial Data on Banks Around the World

The primary input into our empirical analysis is data licensed from LNRS, a commercial data services provider. LNRS offers technologies and analytics tools to help organizations manage sanctions risk and improve the efficiency of cross-border payments, among other core business concerns of global banks and other financial institutions. LNRS offers multiple products, but the key database used in our analysis is their "Global Payments File (GPF) Plus". The GPF provides a broad range of information on all included banks, including contact information and measures of size. Most importantly for our purposes, the GPF collects each bank's "standard settlement instructions" (SSIs), which is a list that contains, for each currency the bank can receive, the identity and key details (such as a SWIFT or "BIC" code) of the correspondent bank(s) through which it can receive a payment in that currency. LNRS also provides sanctions information collected from official government sources, which institutions incorporate into their own sanctions-screening systems, inluding information on authorities of the United States, the United Kingdom, and the European Union.

Starting with data from October 2025, we study monthly updates of the GPF, augmented by historical snapshots of the data from September 2021, September 2022, September 2023, and September 2024.[3] Given changes in sanctions status or correspondent banking relationships are highly persistent, little is lost for our purposes from only having annual updates in the earlier years of our data.

In aggregate, the data includes about 70,000 financial institutions.[4] If a bank has a presence in multiple countries, each will count as a distinct institution. For example, Barclays Bank PLC has its global headquarters in London, which would be treated under this definition as a different entity from its Americas headquarters, which is in New York. Within each country, however, all branches or offices of the same institution share an identifier. The total number of locations in the data, therefore, vastly exceed 70,000. This paper focuses on sanctions, which are vastly more common in emerging market and developing economies (EMDEs) – countries classified by the World Bank as upper-middle, lower-middle, or low income – than in advanced economies. As such, to allow for more useful comparisons of sanctioned and non-sanctioned banks, we restrict the sample to the roughly 17,000 financial institutions located in EMDEs (though still capture their linkages to correspondents in advanced economies).[5]

Figure 1 shows the distribution in our dataset of EMDE financial institutions by LNRS-assigned type.[6] The largest category is "Depository Financial Institutions", which accounts for nearly 45 percent of the entries in the overall dataset. This broad classification includes non-bank entities such as

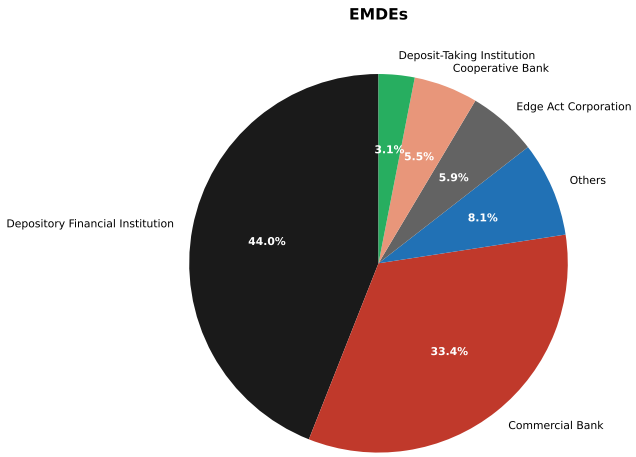
[3]Historically, this information was printed in physical volumes called the "Banker's Almanac." See the GloCoBank Project at Oxford University, which studies correspondent banking relationships across the 20th century.

[4]We use the institution identifier generated by LNRS. For certain datasets, individualization of data may benefit from LNRS-generated internal reference identifiers that help distinguish records which might otherwise appear confusingly similar. These identifiers are used solely for dataset indexing and retrieval. Institutional identity itself is defined by the legal and regulatory attributes of the institution, not by LNRS."

[5]The Appendix offers some summary statistics for U.S. banks in the data.

[6]We pool all monthly snapshots but only count each unique institution once. In rare cases where an institution's type classification changes, we use the first instance.

Figure 1: Distribution of Financial Institution Types in EMDEs



corporate treasuries (with SWIFT codes), securities broker-dealers, investment managers, insurance companies, and fintech firms. "Commercial Banks" account for the next largest share, almost 35 percent. "Deposit-taking institutions", "Cooperative Banks", and "Edge Act Corporations" account for most of the remainder of the data.[7]

5 Which Institutions are Sanctioned?

The LNRS data provides information on which financial institutions are under sanctions from the United States, European Union, or United Kingdom. LNRS' reporting is based on each jurisdiction's official sanctions list but also includes proprietary additions to capture entities subject to sanctions-related directives or restrictions that are not formally listed. In this section, we describe the reach, focus, and timing with which financial sanctions were deployed by authorities in these three regimes.

To facilitate our difference-in-differences analyses in the next section, we restrict our data to a subsample of five somewhat evenly-spaced months: September 2021, September 2022, September 2023, September 2024, and November 2025. We chose November 2025, rather than October 2025, because we wish to capture the large wave of sanctions that were imposed in that month. Relatively few sanctions were imposed in the subsequent months of data.

Of the 17,344 EMDE financial institutions in the data in November 2025, LNRS reports that 284 (1.6 percent) are under a sanction from the United States, United Kingdom, or European Union. Table 1 shows that sanctions have been applied to a broad set of financial institution types. Of these 284 sanctioned institutions, 193 are commercial banks, but sanctioned entities also include depository

[7]Edge Act Corporations are entities chartered by the U.S. Federal Reserve to engage in international banking and trade finance. Since the analysis is restricted to institutions located in EMDEs, these are the foreign affiliates of the U.S. entities.

financial institutions, government banks, development banks, and investment banks, among others. Broadly, the composition of the three authorities' sanctions across institution types is similar.

Table 1: Sanctions by Financial Institution Type

Type	Total	OFAC		EU		HMT		Any	
		N	%	N	%	N	%	N	%
Commercial Bank	5,797	169	2.9	102	1.8	82	1.4	193	3.3
Depository Financial Institution	7,632	30	0.4	14	0.2	12	0.2	35	0.5
Government Bank	89	11	12.4	6	6.7	7	7.9	13	14.6
Other	1,119	10	0.9	6	0.5	7	0.6	12	1.1
Development Bank	166	6	3.6	4	2.4	4	2.4	6	3.6
Central Bank	97	5	5.2	3	3.1	3	3.1	5	5.2
Savings Bank	54	4	7.4	3	5.6	3	5.6	4	7.4
Private Bank	140	4	2.9	1	0.7	1	0.7	4	2.9
Investment Bank	125	4	3.2	3	2.4	3	2.4	4	3.2
Cooperative Bank	950	2	0.2	2	0.2	2	0.2	2	0.2
Industrial Bank	6	2	33.3	2	33.3	2	33.3	2	33.3
Financial Service Company	368	2	0.5	2	0.5	2	0.5	2	0.5
Agricultural Bank	10	1	10.0	0	0.0	0	0.0	1	10.0
Holding Company	38	1	2.6	0	0.0	0	0.0	1	2.6
Types without sanctions	753	0	0.0	0	0.0	0	0.0	0	0.0
Total	17,344	251	1.4	148	0.9	128	0.7	284	1.6

5.1 Growth in Sanctions

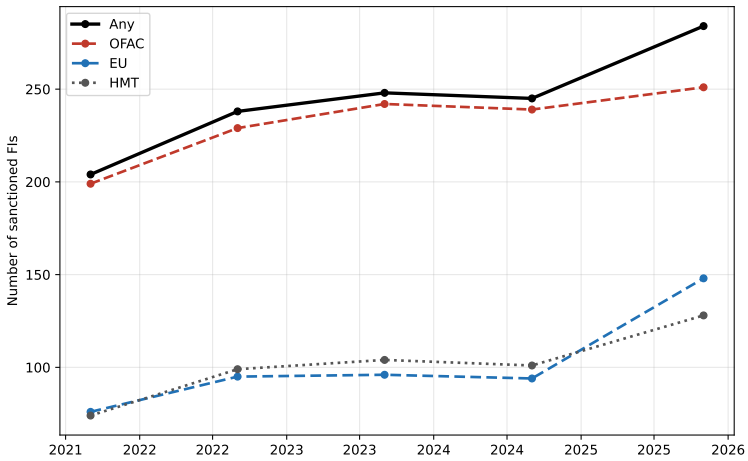
Sanctioning activity has grown rapidly since 2021, as shown in the solid black line in Figure 2. The number of EMDE financial institutions under sanctions from any of the three jurisdictions grew by almost 40 percent from 204 in September 2021 to 284 in November 2025. The United States, through its Treasury's Office of Foreign Assets Control (OFAC), has imposed the largest number of sanctions over this period: OFAC sanctions applied to 199 EMDE financial institutions in September 2021 and grew to 251 by November 2025. The European Union nearly doubled its EMDE sanctions during the same period, from 76 to 148. EMDE financial institutions targetted by the United Kingdom, through His Majesty's Treasury (HMT), similarly grew from 74 to 128.[8]

Little of this growth reflects entry or exit of financial institutions: between September 2022 and November 2025, only 4 sanctioned banks entered the data and only 19 exited. The growth instead reflects new sanctions imposed on entities already in the data.

The timing of new sanctions differs somewhat across the three authorities, but the three bodies often designate the same banks. Table 2 shows that OFAC sanctioned 32 entities by September 2022 that were not sanctioned one year earlier, added 18 more by September 2023, slowed over the subsequent 12 months, and then added 16 more between September 2024 and November 2025. The EU and HMT similarly added entities in large waves, with more designations late in the sample: 57 and 30 new sanctions, respectively, after September 2024, compared to smaller numbers from OFAC over the same

[8]For the time-series growth in sanctions applied world-wide, not just in EMDEs, see Appendix Figure A3. EMDEs account for roughly 80 percent of global financial sanctions, and a larger share of newly imposed financial sanctions, in our data.

Figure 2: Banks Under Sanctions, by Authority, 2021-2025



period. Only one EMDE financial institution had sanctions completely removed during the data.

Table 2: Financial Institutions Under Sanctions, by Authority

	September 2021	September 2022	September 2023	September 2024	November 2025
Sanctioned OFAC	199	229	242	239	251
Sanctioned EU	76	95	96	94	148
Sanctioned HMT	74	99	104	101	128
Sanctioned (Any)	204	238	248	245	284
N→Y OFAC	—	32	18	2	16
N→Y EU	—	22	4	0	57
N→Y HMT	—	29	7	0	30
N→Y (Any)	—	36	15	2	43
Y→N OFAC	—	0	0	0	1
Y→N EU	—	0	0	0	1
Y→N HMT	—	1	0	0	1
Y→N (Any)	—	0	0	0	1

Despite differences in timing, overlap across authorities is high. As shown in Table 3, nearly all sanctioned banks in 2021, and over 80 percent in 2025, were targeted either by OFAC alone or by all three bodies. Less than 10 percent of sanctioned banks in 2025 were designated by either the EU alone or HMT alone. Our preferred difference-in-differences approach therefore focuses on the imposition of sanctions from "any" one of the three authorities.

Table 3: Sanctions Overlap by Authority

	September 2021	September 2022	September 2023	September 2024	November 2025
OFAC + EU + HMT	71	86	88	86	109
OFAC + EU	0	2	3	3	14
OFAC + HMT	0	7	12	11	6
EU + HMT	3	4	3	3	5
OFAC only	128	134	139	139	122
EU only	2	3	2	2	20
HMT only	0	2	1	1	8
Total	204	238	248	245	284

5.2 Which Countries Have Sanctioned Financial Institutions?

In 2021, sanctioned financial institutions were concentrated in a small number of countries, largely reflecting longstanding U.S. sanctions programs. Iran (42 sanctioned entities, 100% of their total), Russia (41, 3.5%), Syria (22, 100%), North Korea (20, 100%), Ukraine (12, 4.2%), Venezuela (10, 11.9%), Cuba (10, 100%), and Belarus (9, 24.3%) account for the bulk. These programs have diverse origins — including Russia's 2014 annexation of Crimea, North Korea's missile program, and longstanding policies toward Cuba and Venezuela — but share the common feature of predating Russia's 2022 invasion of Ukraine.

Table 4 lists sanctioned and total financial institutions for all EMDE countries with at least one sanctioned institution in 2021 or 2025. Sanctions are not limited to these heavily-sanctioned countries: financial institutions are also sanctioned across Africa (e.g. Angola and Sudan), Latin America (e.g. Bolivia and Uruguay), the Middle East (e.g. Egypt and Saudi Arabia), and Europe (e.g. Croatia and Serbia). Financial institutions have also been designated in high-income countries such as France and Japan, though these are excluded from Table 4 since our analysis focuses on EMDEs.

The increase in sanctioned financial institutions between 2021 and 2025 largely reflects sanctions imposed in response to Russia's invasion of Ukraine and is particularly notable in Russia, Belarus, Kyrgyzstan, and Myanmar. Russia saw more than a doubling of sanctioned institutions, from 41 to 100 — an increase equal to about 6 percent of its financial sector. The other three countries have smaller financial sectors, so the absolute increases are modest, but comparable in percentage terms: Belarus added 4 newly sanctioned institutions, raising the share under sanctions by 13 percentage points to 37 percent; Kyrgyzstan went from no sanctioned banks to three, comprising 10 percent of its institutions; and Myanmar added three sanctioned entities, equal to about 5 percent of its total.

Below, we study how these newly imposed sanctions affect connectivity to the correspondent banking network—for the sanctioned banks and for heavily-sanctioned economies as a whole—in traditional global currencies like the dollar as well as in emerging currencies such as the yuan.

6 Sanctions and the Correspondent Banking Relationships

The previous section documented nearly 100 new financial sanctions designations between 2021 and 2025, concentrated in a small number of countries and largely coordinated across authorities. This section estimates how these designations reshape individual banks' connections to the global payments network, examining both sides of the correspondent banking relationship: a bank's ability to receive cross-border payments through correspondents (its role as a respondent) and its ability to intermediate payments on behalf of other banks (its role as a correspondent).

Returning to the example in Section 3, suppose a bank is sanctioned by OFAC. It would experience a reduction or elimination of direct connections to U.S. banks for dollar clearing. But the severity of

Table 4: Sanctions by Country: All Sanctioned EMDEs

	September 2021			November 2025		
Country	Total	Sanct.	%	Total	Sanct.	%
Russia	1,220	41	3.4	1,077	100	9.3
Iran	42	42	100.0	44	40	90.9
Syria	22	22	100.0	23	22	95.7
North Korea	20	20	100.0	20	20	100.0
Belarus	37	9	24.3	35	13	37.1
Ukraine	289	12	4.2	290	13	4.5
Cuba	10	10	100.0	11	11	100.0
Venezuela	84	10	11.9	83	10	12.0
China	3,107	3	0.1	4,162	7	0.2
Iraq	93	5	5.4	95	5	5.3
Myanmar	58	2	3.4	60	5	8.3
Tajikistan	64	2	3.1	68	4	5.9
Kyrgyzstan	27	0	0.0	28	3	10.7
Lebanon	100	4	4.0	98	3	3.1
Georgia	99	1	1.0	107	2	1.9
Afghanistan	20	1	5.0	17	2	11.8
Yemen	23	0	0.0	36	2	5.6
Libya	30	2	6.7	33	2	6.1
India	2,124	2	0.1	2,217	2	0.1
Cambodia	73	0	0.0	83	2	2.4
Azerbaijan	60	2	3.3	58	2	3.4
Angola	45	1	2.2	45	2	4.4
Armenia	24	2	8.3	26	2	7.7
Kazakhstan	65	3	4.6	126	2	1.6
Egypt	96	1	1.0	97	1	1.0
Bolivia	100	1	1.0	97	1	1.0
Malaysia	340	1	0.3	364	1	0.3
Peru	73	1	1.4	79	1	1.3
Serbia	54	2	3.7	58	1	1.7
Sudan	47	0	0.0	45	1	2.2
Turkey	221	1	0.5	250	1	0.4
Viet Nam	169	1	0.6	483	1	0.2
Total (all EMDEs)	15,151	204	1.3	17,344	284	1.6

this disruption to its economic activity depends on several factors. Does the bank have access to non-U.S. dollar correspondents? Does it clear payments in currencies other than the dollar? Are sanctions imposed unilaterally by OFAC alone, or coordinated across OFAC, the EU, and HMT? And the bank may adapt — redirecting its remaining correspondent relationships toward banks in non-sanctioning jurisdictions, such as Chinese banks clearing yuan or Russian banks clearing rubles. Whether the broader domestic financial sector is also under sanctions — as in Iran — shapes these options further, an issue we return to when we study the implications of sanctions at the country level, in Section 7.

Our difference-in-differences estimates are designed to isolate each of these margins. Section 6.1 studies how sanctioned respondents lose access to correspondents, distinguishing domestic, third-country ("indirect"), and currency-issuing jurisdiction ("direct") relationships. Section 6.2 asks whether sanctioned correspondents in turn lose respondents, both domestic and abroad. In both cases, we examine whether sanctioned institutions shift their remaining relationships toward Chinese banks in yuan and Russian banks in rubles.

6.1 Financial Institutions as Respondents

Respondent banks use correspondent banking relationships for sending and receiving cross-border foreign currency payments. Because most financial institutions don't need such a service, at least not directly, most institutions in the data do not report any correspondent relationships or SSIs. Many institutions in our data are credit unions or savings & loans banks that may operate exclusively within their domestic clearing systems. Smaller regional financial institutions might have a domestic clearing provider, but may not list it as a formal correspondent or publish the relevant SSIs. About 85 percent of unsanctioned financial institutions and about 70 percent of sanctioned financial institutions never list any domestic or foreign correspondents for any currency at any time, though both of these numbers are lower (closer to 65 percent) for commercial financial institutions, the most sanctioned financial institution type. Since there is no scope for such financial institutions to reduce their correspondents in response to sanctions (the number cannot drop lower than 0), our baseline analyses exclude this set of financial institutions.

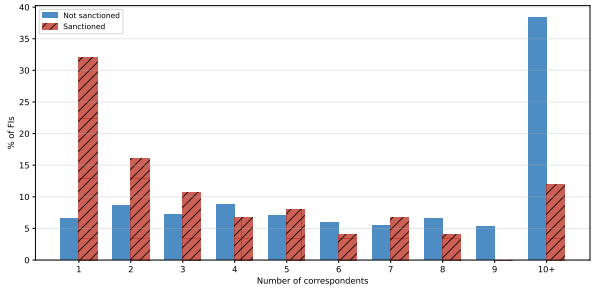
The distribution of correspondent relationships is significantly skewed. For any given currency, most banks have no more than a few correspondents, while a small set of banks have a large number of correspondents. Figure 3a plots the distribution of each bank's listed number of correspondents in November 2025.[9] Among unsanctioned respondents, about 60 percent have 1 to 9 correspondent relationships. The other 40 percent of respondents have at least ten correspondents. Sanctioned respondents display a similar distribution, albeit somewhat less concentrated in the 10+ category. In other words, it is far less common for sanctioned banks to be extremely well connected.

Sanctioned banks tend to have fewer correspondent relationships specifically in the currency of

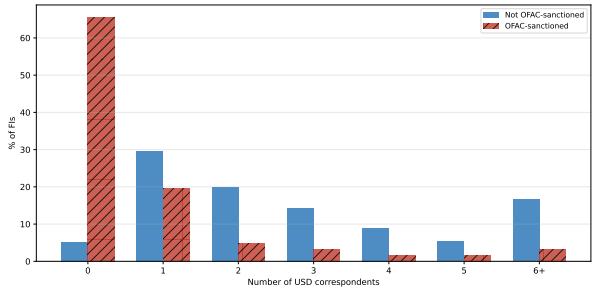
[9]The histograms in Figure 3 only include respondents with at least one listed correspondent in November 2025.

Figure 3: Distribution of Number of Correspondents, November 2025

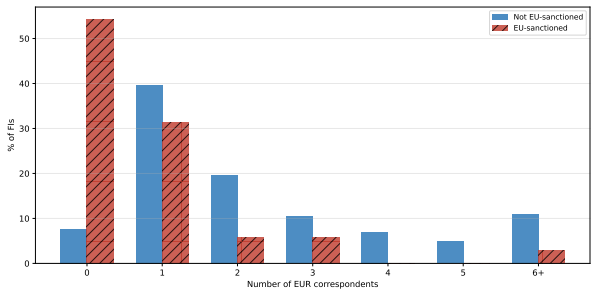
(a) Any Sanction, All CBRs



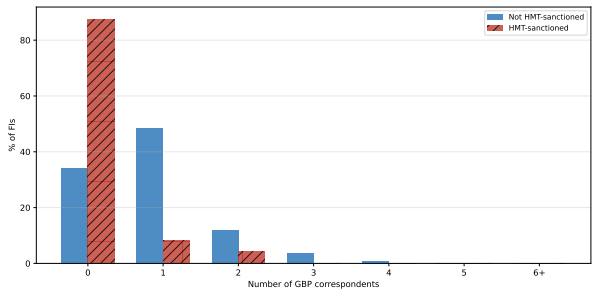
(b) OFAC Sanctions, USD CBRs



(c) EU Sanction, EUR CBRs



(d) HMT Sanctions, GBP CBRs



the sanctioning authority. Figure 3b shows the distribution of dollar correspondents. Consistent with the dollar's role as the dominant currency for international payments, only about 5 percent of non-sanctioned banks have no USD correspondent in 2025. However, almost 65 percent of OFAC-sanctioned financial institutions have no USD correspondents in 2025.[10] Banks sanctioned by the EU and HMT display similar patterns with respect to correspondent banking relationships in EUR and GBP, as shown in Figures 3c and 3d.

To understand how financial institutions alter their correspondent banking relationship network after sanctions, we use a difference-in-differences framework. We compare changes in the correspondent relationships of a bank before and after sanctions with changes of banks in the same country that are never sanctioned. We separately study correspondents in the major currencies and distinguish between domestic relationships, direct correspondents (U.S. dollar correspondents, say), and indirect corespondents (dollar correspondents in Europe, say).

Before introducing our difference-in-differences framework, we report in Table 5 some basic summary statistics that compare the connectivity of the set of financial institutions that are never under sanctions in the data ("Never"), those that at some point are sanctioned in the data, both before ("Pre") and after ("Post") their sanctioning, and those that are always under sanction in our data ("Always"). We do this separately for OFAC, EU, and HMT sanctions.

[10] Perhaps surprising, it is not uncommon for even OFAC-sanctioned financial institutions to have USD correspondents. Many of these are USD correspondents based outside of the United States.

Table 5: Correspondent Access of Sanctioned FIs: Summary Statistics

	OFAC				EU				HMT			
	Never	Pre	Post	Always	Never	Pre	Post	Always	Never	Pre	Post	Always
N (FIs)	2,523	51	51	62	2,563	45	45	28	2,577	33	33	26
% USD in US	67.8	47.7	16.3	25.7	66.9	43.9	14.6	47.3	66.7	54.1	19.8	49.2
% USD third-country	41.8	48.6	9.9	15.5	41.5	30.9	4.5	17.1	41.4	41.0	4.4	15.3
% USD domestic	13.5	31.8	5.0	7.8	13.4	21.1	10.1	14.7	13.4	34.4	8.8	13.6
% EUR in Eurozone	72.9	61.7	10.6	52.0	72.6	49.6	6.7	43.4	72.4	65.6	6.6	43.2
% EUR third-country	29.6	28.0	11.3	29.4	29.8	19.5	10.1	14.7	29.8	21.3	5.5	12.7
% EUR domestic	10.1	26.2	5.0	7.8	10.0	19.5	9.0	14.0	10.1	13.1	7.7	12.7
% GBP in UK	42.4	29.0	5.7	22.0	42.1	14.6	6.7	18.6	41.9	32.8	3.3	20.3
% GBP third-country	20.5	32.7	3.5	11.1	20.4	16.3	1.1	15.5	20.3	29.5	1.1	14.4
% GBP domestic	5.8	11.2	0.0	0.3	5.7	11.4	1.1	0.0	5.8	8.2	0.0	0.0
% CNY in China	16.7	35.5	12.8	24.0	16.8	31.7	13.5	17.1	16.9	41.0	11.0	16.9
% RUB in Russia	9.0	23.4	18.4	32.1	9.1	28.5	24.7	47.3	9.2	42.6	23.1	44.1
Mean # currencies	7.00	7.76	1.80	3.95	6.95	5.81	1.66	4.50	6.94	8.07	1.51	4.36
Mean # foreign countries	6.00	4.99	1.13	3.66	5.97	3.33	0.94	3.02	5.95	5.00	0.99	3.02

Prior to sanctions, sanctioned and never-sanctioned banks appear broadly similar in the overall breadth of their payment networks. On average, banks that were eventually sanctioned by OFAC could clear payments in nearly as many currencies as banks that were never sanctioned (7.00 versus 7.76). They also maintained correspondents in a comparable number of foreign countries (6.00 versus 4.99). In terms of overall connectivity, eventually sanctioned banks therefore do not appear substantially less integrated into the global payments system.

Despite this similarity in network breadth, the structure of their correspondent relationships differs in important ways. Our sample includes 51 institutions that transition from unsanctioned to sanctioned status and 2,523 entities in EMDE countries that are never sanctioned by OFAC. Even before sanctions are imposed, banks that are later sanctioned are less embedded in the U.S. financial system and are more likely to clear U.S. dollars indirectly. Fewer than half (47.7 percent) maintain a U.S. dollar correspondent located in the United States, compared with more than two-thirds (67.8 percent) of never-sanctioned institutions, and the vast majority (80.4 percent) have dollar clearers located outside the United States, whether domestic or third-country, compared with only half (55.3 percent) of never-sanctioned institutions. Banks that will eventually be sanctioned by OFAC are also significantly more likely to maintain yuan correspondents in China (35.5 versus 16.7 percent) and ruble correspondents in Russia (23.4 versus 9.0 percent). Overall, banks that are eventually sanctioned rely more heavily on non-U.S. payment networks.

Connectivity declines sharply once sanctions are imposed. For banks that transition from unsanctioned to sanctioned status, the average number of currencies in which they can send or receive payments falls from 7.76 before designation to 1.80 afterward. The number of countries in which they maintain correspondents declines similarly, from 4.99 to 1.13. Table 5 also reports these statistics for institutions that are sanctioned throughout the sample ("Always"). For many measures, these banks exhibit levels of connectivity that lie between those of transitioning banks before sanctions ("Pre") and after sanctions ("Post"). In other words, always-sanctioned institutions remain connected to global payment networks, but at substantially lower levels than banks that have not yet been designated. The final columns of Table 5 show that the same qualitative patterns hold for sanctions imposed by the

European Union (EU) and the UK Treasury (HMT).

The contraction in connectivity is reflected in the currency clearing relationships through which banks access major payment systems. The share of sanctioned banks with U.S. dollar correspondents located in the United States falls from 47.7 percent before designation to 16.3 percent afterward. Declines are even larger for dollar correspondents located outside the United States. Euro and pound sterling correspondents—the currencies of the sanctioning authorities—exhibit similarly sharp contractions. By contrast, declines are smaller for ruble and yuan correspondents: ruble correspondents fall from 23.4 percent to 18.4 percent, while yuan correspondents decline from 35.5 percent to 12.8 percent.

The preceding comparisons suggest that sanctions operate by sharply restricting banks' access to the global correspondent banking network. However, these comparisons may also reflect underlying differences in country and institutional characteristics rather than sanctions alone. Newly sanctioned institutions, for example, are far more likely to be located in Russia or Belarus than in countries such as Argentina or Thailand, and may interact with the global correspondent banking network differently for reasons beyond their exposure to sanctions. Similarly, financial institutions that are always sanctioned in our data are disproportionately located in Iran, Cuba, Syria, or North Korea—countries whose economic connections to the global financial system differ substantially from those of most other EMDEs for reasons that only partly reflect financial sanctions.

To address these concerns, we implement a matched difference-in-differences framework that compares connectivity outcomes for sanctioned banks with those of otherwise similar, non-sanctioned banks in the same country and of the same institutional type. By comparing the change in outcomes for sanctioned institutions before and after designation to the contemporaneous change for the matched control group, we better isolate the incremental effects of sanctions. After all, if the primary drivers of shifts in correspondent relationships are broader country-level shocks—such as changing bilateral trade patterns or shifts in aggregate financial flows—then we would expect to observe similar changes for all banks in the country.

More formally, let $\mathcal{S}$ denote the set of financial institutions that transition from unsanctioned to sanctioned during the sample, and let τ_i denote the date at which we first observe financial institution $i \in \mathcal{S}$ with a sanctions flag. For each sanctioned financial institution i, we only use data from $\tau_i - 1$ and τ_i. For each sanctioned financial institution i located in country n_i and classified as institution type k_i, we create a matched control group $\mathcal{C}_i$ from all financial institutions j in that same country n_i and with institution type k_i that are never sanctioned at any of the five dates in our sample.[11] In this analysis, we only use institutions that have at least one correspondent (in any currency) at date $\tau_i - 1$.[12]

[11] If there are no matches on country and institution type, we simply include all never-sanctioned financial institutions in country n_i.

[12] Of the 68 financial institutions that transition from unsanctioned to sanctioned under OFAC, 21 had no correspondents at $\tau_i - 1$ and are excluded. The shares are larger for EU and HMT sanctions, where we exclude nearly two-thirds of the newly sanctioned financial institutions.

We study date t outcomes $Y_{\cdot,t}^{(m)}$, where m varies to index different measures of connectivity, like the count of correspondents clearing a particular currency and located in a particular country. The financial institution-level difference-in-differences on outcome m for sanctioned financial institution i is:

$$\text{DiD}_i^{(m)} = \underbrace{\left(Y_{i,\tau_i}^{(m)} - Y_{i,\tau_i-1}^{(m)}\right)}_{\text{sanctioned financial institution's change}} - \underbrace{\left(\bar{Y}_{\mathcal{C}_i,\tau_i}^{(m)} - \bar{Y}_{\mathcal{C}_i,\tau_i-1}^{(m)}\right)}_{\text{matched controls' average change}}, \tag{1}$$

where the average outcome m for sanctioned financial institution i's control group $\mathcal{C}_i$ at date t is:

$$\bar{Y}_{\mathcal{C}_i,t}^{(m)} \equiv \frac{1}{|\mathcal{C}_i|} \sum_{j \in \mathcal{C}_i} Y_{j,t}^{(m)}. \tag{2}$$

We then report the simple average effect across all sanctioned financial institutions:

$$\beta^{(m)} = \frac{1}{|\mathcal{S}|} \sum_{i \in \mathcal{S}} \text{DiD}_i^{(m)}, \tag{3}$$

where N is the number of sanctioned financial institutions contributing to the estimate.[13] We use this difference-in-differences framework both to capture changes in the count of correspondents, as described above, but also to capture percentage changes in correspondents, where we instead calculate the key values in equation (1) in percentage change form, i.e. $\left(Y_{\cdot,t}^{(m)} - Y_{\cdot,t-1}^{(m)}\right) / Y_{\cdot,t-1}^{(m)}$.

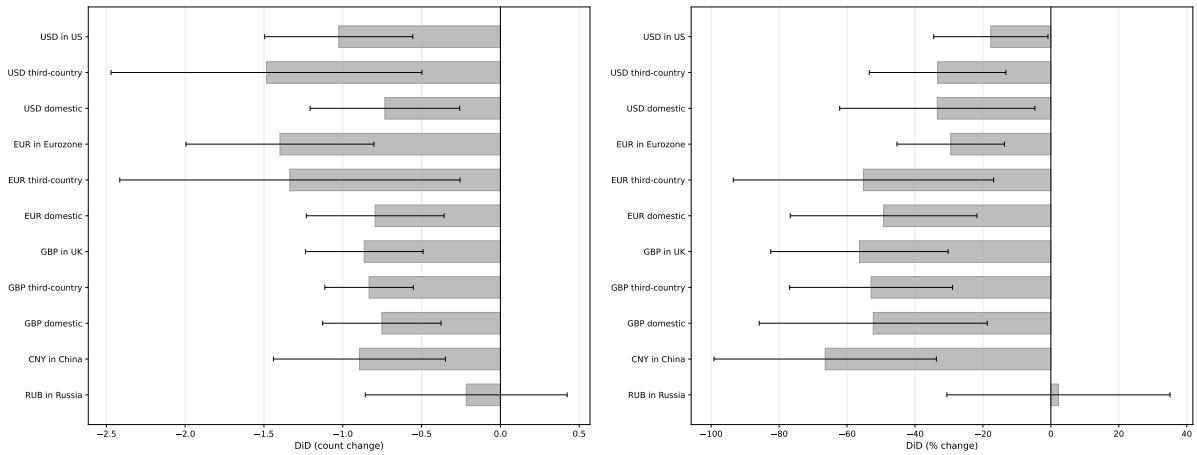
Sanctions lead to economically large and statistically significant declines in correspondent banking relationships across most currencies. Figure 4a shows that, in levels, sanctions reduce the number of correspondents by at least 0.75 in all cases except the ruble, with the largest declines—between 1 and 1.5 correspondents—occurring for U.S. dollar clearers (both in the United States and in third countries) and for euro clearers (in the Eurozone and in third countries). By contrast, the decline in ruble correspondents is small (0.20) and statistically insignificant.

Expressed in percentage terms, the decline in correspondent relationships is large, ranging from roughly 20 to 50 percent across currencies. Figure 4b shows that these effects remain statistically significant across most currencies. These estimates place greater weight on the complete loss of correspondents, such as a transition from one to zero, than on any other reduction in access to payment networks. Differences across currencies reflect variation in baseline network size: dollar correspondents exhibit smaller percentage declines given their larger initial levels, while yuan correspondents show larger percentage reductions. As in the levels specification, there is no statistically significant change in ruble correspondents.

[13] We compute standard errors treating each sanctioned financial institution's DiD as an independent draw. We suppress estimates based on fewer than 5 sanctioned financial institutions. Note that each sanctioned financial institution receives equal weight, regardless of the size of its control group $|\mathcal{C}_i|$. Because our control group consists exclusively of never-sanctioned financial institutions and each sanctioned financial institution's difference-in-differences is computed independently at its own transition date, our estimator avoids the staggered-treatment biases that can arise in traditional two-way fixed effects regressions when already-sanctioned units serve as controls for later-sanctioned units, as discussed in Goodman-Bacon (2021), Callaway and Sant'Anna (2021), and Sun and Abraham (2021).

Figure 4: Reduction in Correspondents After Being Sanctioned

(a) Change in Number of Correspondents **(b)** Percent Change in Number of Correspondents



Taken together, these results indicate that sanctions reduce correspondent banking relationships across a broad set of currencies relative to similar financial institutions operating in the same country. The effects are strongest for currencies associated with sanctioning jurisdictions, consistent with sanctions operating through the withdrawal of access to major payment infrastructures. Ruble correspondents in Russia are the primary exception, likely reflecting the fact that recent sanctions imposed by the United States, Europe, and the United Kingdom were directed at Russia itself and more directly disrupt financial linkages with Western institutions.

Table 6: Estimated Reduction in Number of Correspondents due to Sanctions

	OFAC			EU			HMT		
Outcome	DiD	SE	N	DiD	SE	N	DiD	SE	N
USD in US	-1.184	0.268	29	-1.367	0.348	21	-1.271	0.305	23
USD third-country	-2.054	0.545	21	-0.284	0.390	11	-0.687	0.317	12
USD domestic	-0.830	0.289	13	-0.016	0.244	7	-0.106	0.243	8
EUR in Eurozone	-1.626	0.316	32	-1.815	0.470	21	-1.656	0.411	25
EUR third-country	-1.761	0.612	12	0.051	0.400	6	-0.682	0.640	5
EUR domestic	-1.006	0.219	8	-0.300	0.220	5	—	—	<5
GBP in UK	-0.986	0.227	13	-0.964	0.334	9	-1.047	0.229	12
GBP third-country	-0.813	0.159	13	-0.852	0.256	7	-0.849	0.204	9
GBP domestic	—	—	<5	—	—	<5	—	—	<5
CNY in China	-1.268	0.273	17	-0.568	0.290	13	-0.633	0.193	12
RUB in Russia	-0.436	0.473	12	-0.153	0.172	16	-0.017	0.243	15

Ideally, one could separately identify the effects of OFAC, EU, and HMT sanctions, including differences across the dollar, euro, and pound. In practice, however, these sanctions are often imposed on the same institutions at similar points in time, as shown in Table 3. While Tables 6 and 7 report estimates separately by sanctioning authority, we caution against interpreting differences across these specifications. Instead, the results consistently point to broad-based declines in correspondent

relationships following sanctions, with ruble correspondents again as the sole exception.[14]

Table 7: Estimated Percentage Reduction in Correspondents due to Sanctions

	OFAC			EU			HMT		
Outcome	DiD	SE	N	DiD	SE	N	DiD	SE	N
USD in US	-22.612	9.203	29	-28.553	11.444	20	-21.099	10.097	23
USD third-country	-50.263	10.009	20	-29.273	18.275	10	-32.493	15.089	11
USD domestic	-35.538	17.679	13	5.432	24.977	7	-0.648	24.541	8
EUR in Eurozone	-40.224	6.558	32	-38.415	9.271	21	-31.310	10.127	25
EUR third-country	-75.568	17.363	12	-6.334	36.805	6	-24.983	42.252	5
EUR domestic	-65.224	11.404	8	-19.076	22.518	5	—	—	<5
GBP in UK	-63.401	15.158	13	-45.135	17.382	9	-61.689	12.565	12
GBP third-country	-50.252	13.571	13	-44.122	21.248	7	-45.260	17.093	9
GBP domestic	—	—	<5	—	—	<5	—	—	<5
CNY in China	-99.113	18.091	17	-50.316	18.176	13	-61.646	18.353	12
RUB in Russia	-5.953	23.691	12	0.331	11.228	16	4.277	19.363	15

6.2 Financial Institutions as Correspondents

Section 6.1 examined how sanctions affect a respondent's access to correspondents; here, we flip the relationship and study how sanctions affect a bank's ability to function as a payment intermediary for other banks. If sanctioned correspondents lose respondents, sanctions generate broader spillovers, degrading not only the targeted institution's own payment access but also the cross-border clearing capacity of the banks that rely on it.

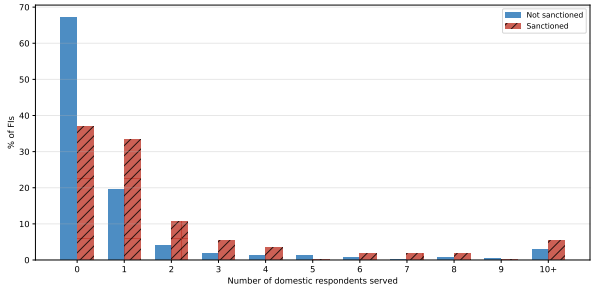
Only a small share of financial institutions operate as correspondents to other institutions. We therefore focus on the roughly 1,300 EMDE institutions (about 8 percent of the total) that report at least one respondent in some currency in November 2025. Figures 5a and 5b show the distributions of the number of respondents they serve, separately for domestic respondents (located in the same country) and cross-border respondents (located abroad). Among unsanctioned institutions that serve as correspondents, about 85 percent serve at least one cross-border respondent, while roughly one-third serve at least one domestic respondent, with around 20 percent serving both. The distributions are highly skewed: most correspondents serve only a small number of respondents. A small group, however, serves very large client networks, some with more than 100 domestic respondents and others with more than 1,000 cross-border respondents.

Sanctioned and unsanctioned institutions have broadly similar respondent-network distributions, as shown in Figures 5a and 5b. Sanctions do not appear to be disproportionately targeted at correspondent banks that serve especially large numbers of respondents. Figures 5c and 5d show similar patterns among the roughly 30 percent of correspondent institutions that clear U.S. dollars, with similarly skewed client distributions. The distribution for OFAC-sanctioned institutions closely resembles that for unsanctioned institutions, though it is somewhat more concentrated among banks that clear dollars for domestic respondents. Overall, these patterns suggest that sanctions are not systematically

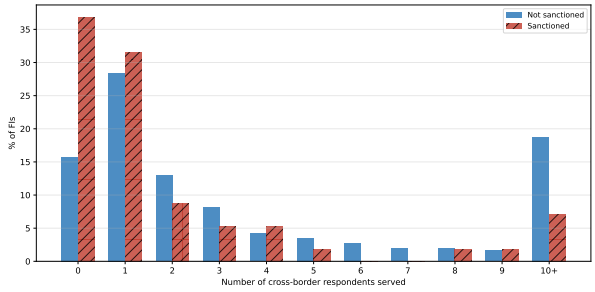
[14] Estimates based on fewer than 5 sanctioned financial institutions are suppressed due to insufficient statistical power.

Figure 5: Distribution of Number of Respondents, November 2025

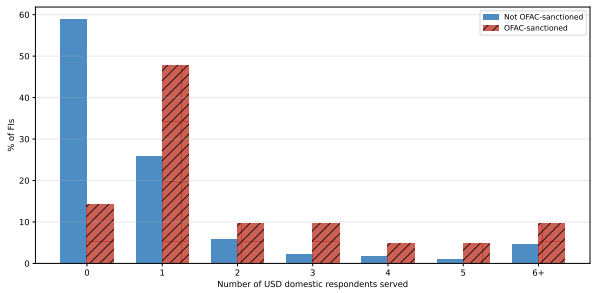
(a) Any Sanction, Domestic Respondents



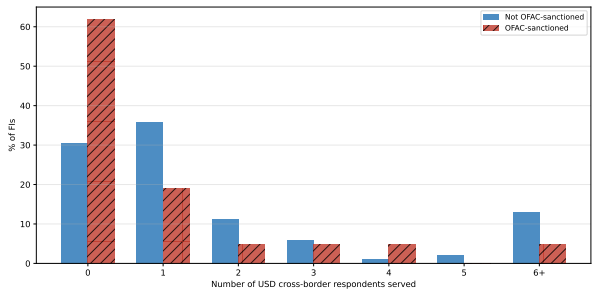
(b) Any Sanctions, Cross-border Respondents



(c) OFAC Sanctions, Dom. USD Respondents



(d) OFAC Sanctions, CB. USD Respondents



directed toward the largest or most globally connected correspondent banks.[15]

We now ask whether sanctioned financial institutions that act as correspondents lose respondents, using the same two-step approach as in Section 6.1: unconditional summary statistics followed by a matched difference-in-differences. Table 8 restricts the sample to financial institutions that have ever served as a correspondent and reports, for each sanctioning authority, the share and scale of their correspondent activity, separating institutions that are never sanctioned from those that transition to sanctioned status.

Table 8: Respondent Access of Sanctioned FIs: Summary Statistics

	OFAC				EU				HMT			
	Never	Pre	Post	Always	Never	Pre	Post	Always	Never	Pre	Post	Always
N (FIs)	1,454	31	31	43	1,476	28	28	24	1,482	24	24	22
% serving USD respondents (XB)	18.5	29.5	19.6	17.6	18.4	20.3	21.7	28.4	18.4	21.7	22.7	29.5
% serving USD respondents (dom.)	11.7	45.9	51.1	14.7	11.9	30.4	38.3	30.2	11.9	37.0	45.5	26.7
% serving EUR respondents (XB)	13.4	27.9	19.6	28.4	13.6	20.3	20.0	34.5	13.6	19.6	21.2	34.3
% serving EUR respondents (dom.)	8.2	41.0	46.7	15.2	8.4	26.1	38.3	31.0	8.4	30.4	45.5	27.6
% serving GBP respondents (XB)	4.4	8.2	8.7	4.4	4.4	4.3	8.3	6.0	4.4	10.9	7.6	6.7
% serving GBP respondents (dom.)	3.5	16.4	14.1	5.9	3.6	15.9	13.3	9.5	3.6	15.2	15.2	10.5
% serving CNY respondents (XB)	6.5	3.3	10.9	10.3	6.4	10.1	10.0	13.8	6.4	6.5	10.6	15.2
% serving CNY respondents (dom.)	4.7	34.4	35.9	6.4	4.9	21.7	28.3	11.2	4.9	34.8	36.4	8.6
% serving RUB respondents (XB)	4.5	55.7	43.5	24.0	4.7	40.6	58.3	30.2	4.7	50.0	62.1	33.3
% serving RUB respondents (dom.)	3.0	21.3	16.3	13.7	2.9	20.3	25.0	22.4	3.0	21.7	31.8	19.0
Mean # domestic respondents	0.96	3.57	2.61	2.62	0.97	2.70	5.32	2.70	0.96	4.80	5.30	2.72
Mean # respondent countries	3.74	3.38	1.98	2.32	3.70	2.62	2.52	3.61	3.69	2.67	2.91	3.83

Under OFAC sanctions, 31 institutions serve as correspondents to at least one respondent and

[15]The number of financial institutions serving as euro correspondents is somewhat smaller than the number that clear dollars, while pound correspondents account for a very small share. We therefore do not report equivalent plots for the euro and British pound, although the distributions of respondents served, and comparisons between sanctioned and unsanctioned entities, look qualitatively similar to those for U.S. dollar correspondents.

transition from unsanctioned to sanctioned in our data. Compared to financial institutions that are never sanctioned by OFAC, the most striking difference is in their domestic correspondent activity. For the dollar, euro, pound, and yuan, more than twice the share of eventually-sanctioned institutions serve as correspondents to domestic respondents, and the mean number of domestic respondents is substantially higher. By contrast, differences are more muted for cross-border respondents, and eventually-sanctioned institutions do not serve respondents in a higher number of countries.

Surprisingly, comparing "Pre" and "Post", the share of sanctioned financial institutions that serve domestic respondents in all these currencies is stable or even increases. Sanctions against correspondent financial institutions do not appear to inhibit domestic connectivity to other local financial institutions, even in foreign currency. While OFAC sanctions appear to reduce service of cross-border respondents in dollars and euros, there are minimal declines, if any, in service of cross-border respondents "Pre" and "Post" the EU and HMT sanctions.

The ruble is somewhat different, almost certainly because most sanctioned institutions in this table are located in Russia. Sanctioned institutions are far more likely to serve ruble respondents, both domestically and abroad, and their connectivity appears stable or increasing from pre- to post-designation. "Always" sanctioned institutions, in the final columns of Table 8, are harder to characterize but generally exhibit less connectivity to respondents than the other groups.

The summary statistics above mix institutions across countries and time periods. A Belarusian correspondent that lost respondents in 2023 may be doing so because of the broad financial disruption hitting Belarus that year, not because it was newly designated — a never-sanctioned Belarusian bank might face the same financial disruption. To isolate the incremental effect of designation, we apply the matched difference-in-differences estimator from Section 6.1, comparing each sanctioned correspondent's change in respondents to the contemporaneous change for never-sanctioned peers in the same country and institution type. The only modification to equation (1) is that $Y_{i,t}^{(m)}$ now counts financial institution i's respondents rather than its correspondents.

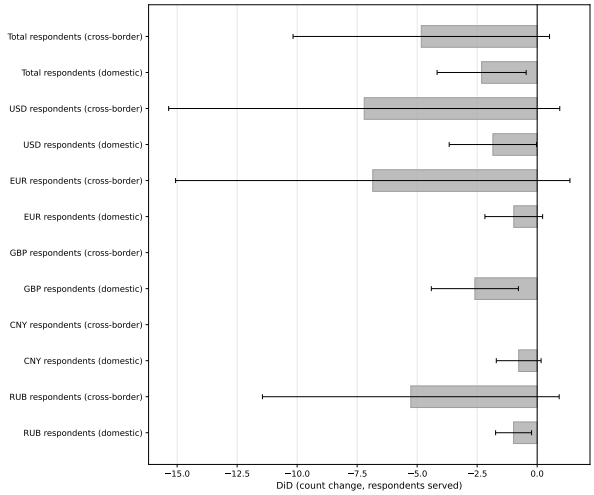
Sanctioned correspondents appear to lose respondents, but the evidence is statistically weak. Figures 6a and 6b plot $\beta^{(m)}$ in levels and percentage changes; Tables 9 and 10 show the same pattern authority by authority. Most coefficients are negative but not statistically distinguishable from zero, reflecting the small number of sanctioned institutions that operate as correspondents. The reduction in domestic ruble respondents is one exception, significant under both specifications.

7 Connection to the Payment System at the Country Level

In Section 6.1, we show that sanctioned financial institutions typically lose some, if not all, ability to clear payments in major currencies. This loss operates through the breakdown of correspondent banking relationships with financial institutions in the currencies and jurisdictions of the sanctioning

Figure 6: Reduction in Respondents After Being Sanctioned

(a) Change in Number of Respondents



(b) Percent Change in Number of Respondents

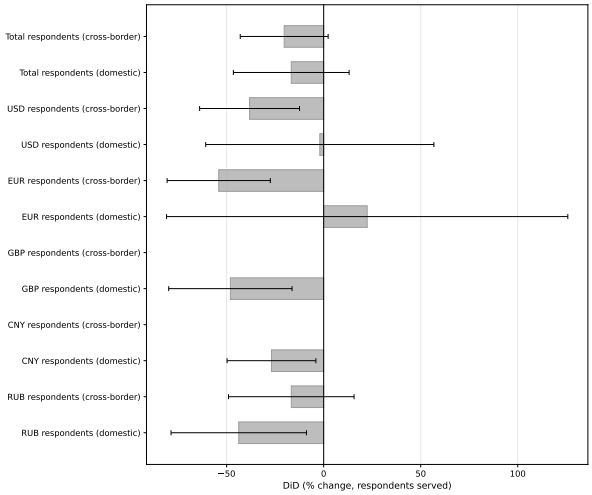


Table 9: Estimated Reduction in Number of Respondents due to Sanctions

	OFAC			EU			HMT		
Outcome	DiD	SE	N	DiD	SE	N	DiD	SE	N
Total respondents (cross-border)	-10.288	5.367	23	-7.837	5.352	22	-3.829	2.898	20
Total respondents (domestic)	-2.558	1.017	21	-2.493	1.361	12	-3.779	1.489	14
USD respondents (cross-border)	-8.646	4.895	10	-4.489	2.950	8	-4.519	2.957	8
USD respondents (domestic)	-2.095	0.958	17	-1.782	1.699	8	-2.715	1.460	11
EUR respondents (cross-border)	-6.859	4.191	10	-2.781	1.910	8	-3.233	2.141	7
EUR respondents (domestic)	-1.177	0.652	14	-0.312	1.060	8	-1.129	0.888	10
GBP respondents (cross-border)	—	—	<5	—	—	<5	—	—	<5
GBP respondents (domestic)	-3.152	1.170	6	-2.734	1.456	5	-3.545	1.289	5
CNY respondents (cross-border)	—	—	<5	—	—	<5	—	—	<5
CNY respondents (domestic)	-0.821	0.516	12	-0.222	0.251	8	-1.077	0.677	9
RUB respondents (cross-border)	-11.606	6.106	19	-9.885	7.039	16	-3.704	3.125	16
RUB respondents (domestic)	-0.974	0.384	8	-1.437	0.767	6	-1.221	0.683	7

Table 10: Estimated Percentage Reduction in Respondents due to Sanctions

	OFAC			EU			HMT		
Outcome	DiD	SE	N	DiD	SE	N	DiD	SE	N
Total respondents (cross-border)	-30.125	11.698	23	-23.821	10.882	22	-27.818	13.111	20
Total respondents (domestic)	-22.265	16.652	21	-9.639	24.930	12	-6.011	22.381	14
USD respondents (cross-border)	-51.723	9.954	10	-10.613	12.681	8	-22.109	12.802	8
USD respondents (domestic)	0.300	31.706	17	33.208	66.625	8	13.198	49.577	11
EUR respondents (cross-border)	-50.807	10.921	10	-14.892	12.116	7	-20.663	12.791	7
EUR respondents (domestic)	25.450	57.512	11	63.093	78.864	8	32.882	64.398	10
GBP respondents (cross-border)	—	—	<5	—	—	<5	—	—	<5
GBP respondents (domestic)	-54.074	21.627	6	-33.854	19.360	5	-47.556	10.149	5
CNY respondents (cross-border)	—	—	<5	—	—	<5	—	—	<5
CNY respondents (domestic)	-31.108	12.290	12	-22.480	16.470	8	-37.769	15.919	9
RUB respondents (cross-border)	-32.629	15.007	19	-21.124	14.870	16	-17.552	17.160	16
RUB respondents (domestic)	-41.964	18.503	8	-13.566	20.674	6	-8.476	16.342	7

authorities. Sanctioned institutions also lose correspondents in other countries and currencies. In addition, we find weaker, but suggestive, evidence that sanctions impair their ability to provide foreign currency payment services to other financial institutions.

However, in many heavily sanctioned economies, the majority of financial institutions still remain unsanctioned. At the country level, such a mix of sanctioned and unsanctioned banks may result in three possible outcomes. First, non-sanctioned financial institutions may develop relationships to replace those severed with sanctioned banks, preserving aggregate access to western currency clearing, especially the U.S. dollar. Second, access to these currencies may decline if such expansion is insufficient. Third, cross-border payment activity may shift toward alternative currencies and jurisdictions, such as the Chinese yuan.

In this section, we examine how non-sanctioned financial institutions adjust their correspondent relationships following sanctions on their peers, focusing on countries with large sanction shocks—Belarus, Kyrgyzstan, Russia, and Myanmar—where at least three institutions were newly sanctioned during 2021–2025 and where the share of financial institutions that were under sanctions increased by at least 5 percentage points.[16]

7.1 Belarus

We begin with Belarus where, as shown in Table 4, the share of sanctioned financial institutions increased from 24 percent in 2021 to 37 percent in 2025. To assess its connectivity with the payments network at the country level, Table 11 reports the full set of cross-border correspondent banking relationships of Belarusian financial institutions across partner countries in the dollar, euro, pound, ruble, and yuan at the beginning and end of the sample.

For each currency and foreign country, the table separately reports the number of correspondent relationships involving Belarussian banks. For example, the second row of the left panel shows that in 2021, Belarus has 11 correspondent banking relationships in Austria involving 11 total Belarussian financial institutions and 1 Austrian correspondent bank. Rows in red capture countries whose banks severed all correspondent relationships between 2021-2025, as is the case for Austria, where all 11 relationships are severed by 2025. Rows in black represent countries where at least some linkages persist over the full period. Rows in blue highlight countries whose banks first serve as Belarussian correspondents in 2022 or later, as is the case for China.

The table reveals two key patterns. First, there is a sharp contraction in Belarus's access to Western currency clearing. Access to dollar, euro, and pound clearing declines dramatically. Belarusian financial institutions maintained 139 correspondent relationships across these three currencies (61, 60, and 18, respectively) in 2021, compared with only 19 in 2025. Where connectivity persists, it becomes

[16]The only two other countries with an increase greater than 5 percentage points in the share of financial institutions under sanction were Afghanistan and Yemen, but they had only one and two newly sanctioned financial institutions, respectively.

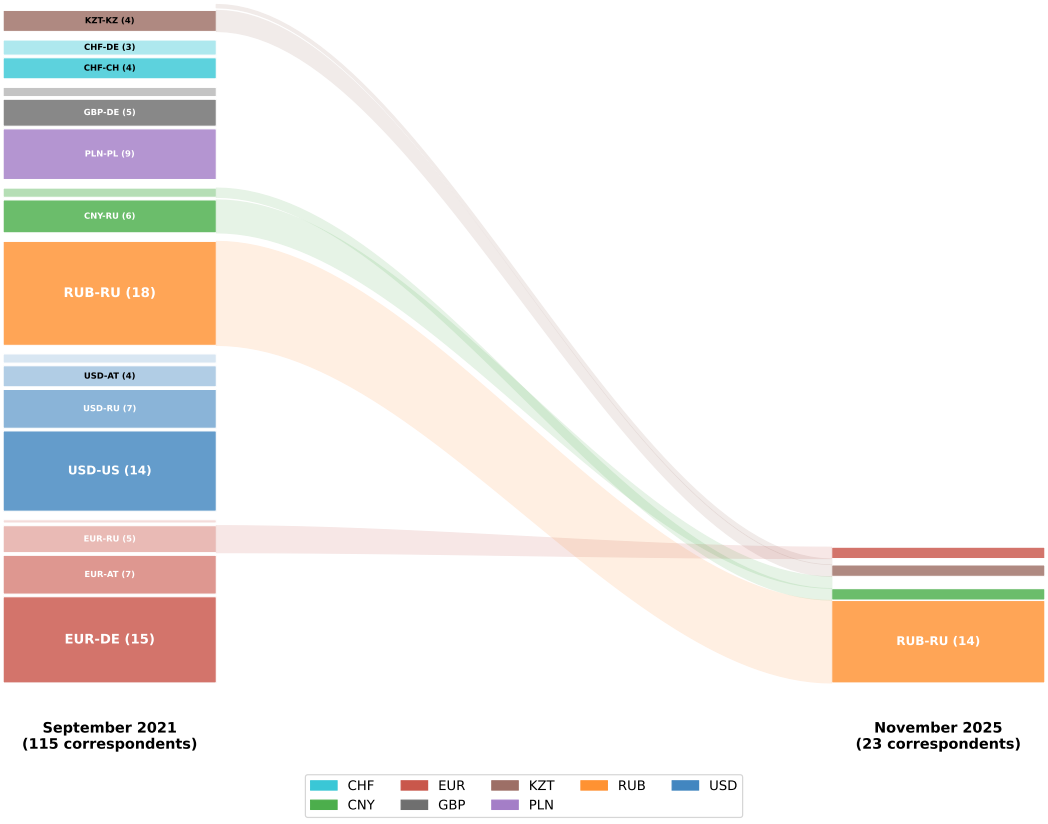
Table 11: Cross-Border Correspondents: Belarus (BY)

Currency	Destination	September 2021 Corrs.	BY FIs	CBs	November 2025 Corrs.	BY FIs	CBs
USD	**TOTAL**	**61**	**25**	**13**	**4**	**3**	**3**
	AT	11	11	1	0	0	0
	CN	0	0	0	1	1	1
	DE	3	3	1	0	0	0
	GE	2	2	1	0	0	0
	KZ	1	1	1	3	2	2
	LB	1	1	1	0	0	0
	RU	24	15	5	0	0	0
	US	19	13	3	0	0	0
EUR	**TOTAL**	**60**	**25**	**13**	**15**	**7**	**9**
	AT	15	15	1	2	2	1
	BE	1	1	1	0	0	0
	DE	27	20	4	0	0	0
	GE	0	0	0	1	1	1
	KZ	1	1	1	2	2	1
	LB	1	1	1	0	0	0
	PL	2	2	1	5	5	1
	RS	0	0	0	2	1	2
	RU	13	8	4	2	1	2
	UZ	0	0	0	1	1	1
GBP	**TOTAL**	**18**	**18**	**8**	**0**	**0**	**0**
	DE	6	6	2	0	0	0
	GB	4	4	3	0	0	0
	GE	1	1	1	0	0	0
	RU	7	7	2	0	0	0
RUB	**TOTAL**	**47**	**25**	**11**	**23**	**13**	**10**
	KZ	1	1	1	1	1	1
	RU	46	25	10	22	13	9
CNY	**TOTAL**	**15**	**13**	**9**	**13**	**11**	**8**
	CN	3	3	2	9	8	5
	DE	1	1	1	0	0	0
	GE	0	0	0	1	1	1
	KZ	0	0	0	1	1	1
	RU	11	10	6	2	2	1

highly concentrated. For example, dollar clearing in 2021 was provided to 25 Belarusian financial institutions by 13 foreign correspondents; by 2025, only three Belarusian institutions retained dollar correspondents, connected to two institutions in Kazakhstan and one in China. In other words, Belarusian banks clear payments through a smaller set of intermediary financial institutions, increasing reliance on a limited number of indirect nodes in the correspondent network.

Second, there is a reconfiguration of remaining connections toward a smaller set of intermediaries and alternative currencies. Belarusian financial institutions reorient part of their external connectivity toward the Chinese yuan clearing via correspondents in China. While the total number of yuan correspondent relationships declines modestly from 15 to 13, this masks a reallocation away from Russian intermediaries and toward Chinese institutions. Yuan clearing with Chinese correspondents expands from three to nine relationships, with the number of Belarusian and Chinese institutions involved rising from three to eight and from two to five, respectively. New clearing relationships in both dollars and euros also emerge through third countries such as Georgia and Kazakhstan, indicating a shift toward more indirect clearing channels.

Figure 7: Evolution of Belarus' CBRs, Sanctioned Financial Institutions, 2021-2025

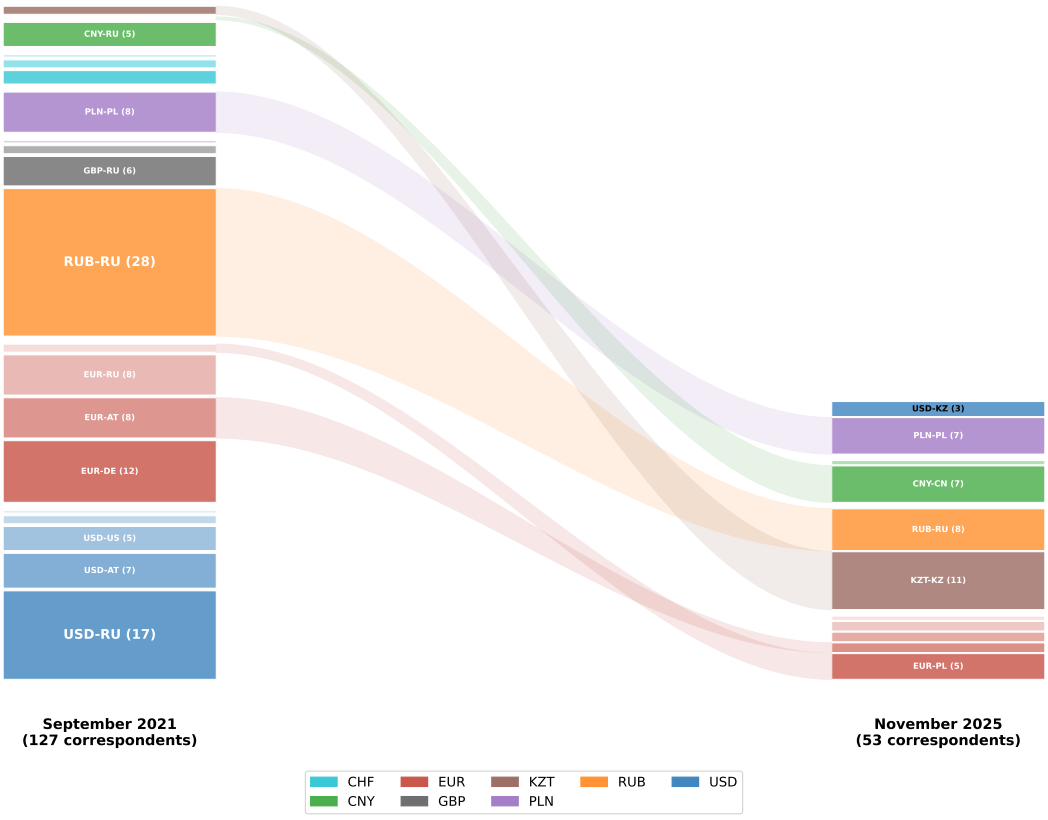


To disentangle these aggregate changes, we separately examine sanctioned and non-sanctioned financial institutions. We find that the contraction in Belarus's external connectivity reflects both the

collapse of correspondent banking relationships among sanctioned institutions and a broade decline in Western currency clearing across non-sanctioned institutions. At the same time, non-sanctioned financial institutions reconfigure their networks, including through expanded yuan clearing with Chinese financial institutions and new connections via third countries.

Figure 7 shows a near-complete collapse in sanctioned institutions' access to major currency clearing, particularly through correspondents located in the jurisdictions of those currencies. In 2021, these institutions cleared dollars through U.S. financial institutions, euros through Eurozone financial institutions, and zloty through Polish financial institutions—providing direct access to the core payment systems for these currencies. By 2025, these links are almost entirely eliminated. The total number of cross-border correspondents falls from 115 to 23, and all 28 dollar, 24 euro (excluding Russia), 9 zloty, 8 pound, and 8 Swiss franc correspondent relationships disappear. The remaining connections are concentrated in a much narrower set of currencies and jurisdictions, primarily ruble correspondents in Russia, with limited residual links in yuan, euro, and regional currencies through Russia, China, and Kazakhstan.

Figure 8: Evolution of Belarus' CBRs, Unsanctioned Financial Institutions, 2021-2025



By contrast, Figure 8 shows that non-sanctioned financial institutions also experience a decline in their access to Western currency clearing, but adjust by reconfiguring their correspondent networks.

Dollar, pound, and Swiss franc clearing largely disappear among these institutions as well, with only limited residual connections through China and Kazakhstan. Euro clearing proves more resilient, continuing through existing partners such as Austria and Poland and through newly established links to Georgia, Kazakhstan, Serbia, and Uzbekistan. Most prominently, though, yuan clearing expands significantly, increasing from a single correspondent relationship in 2021 to nine in 2025, mostly involving Chinese financial institutions.

7.2 Kyrgyzstan and Russia

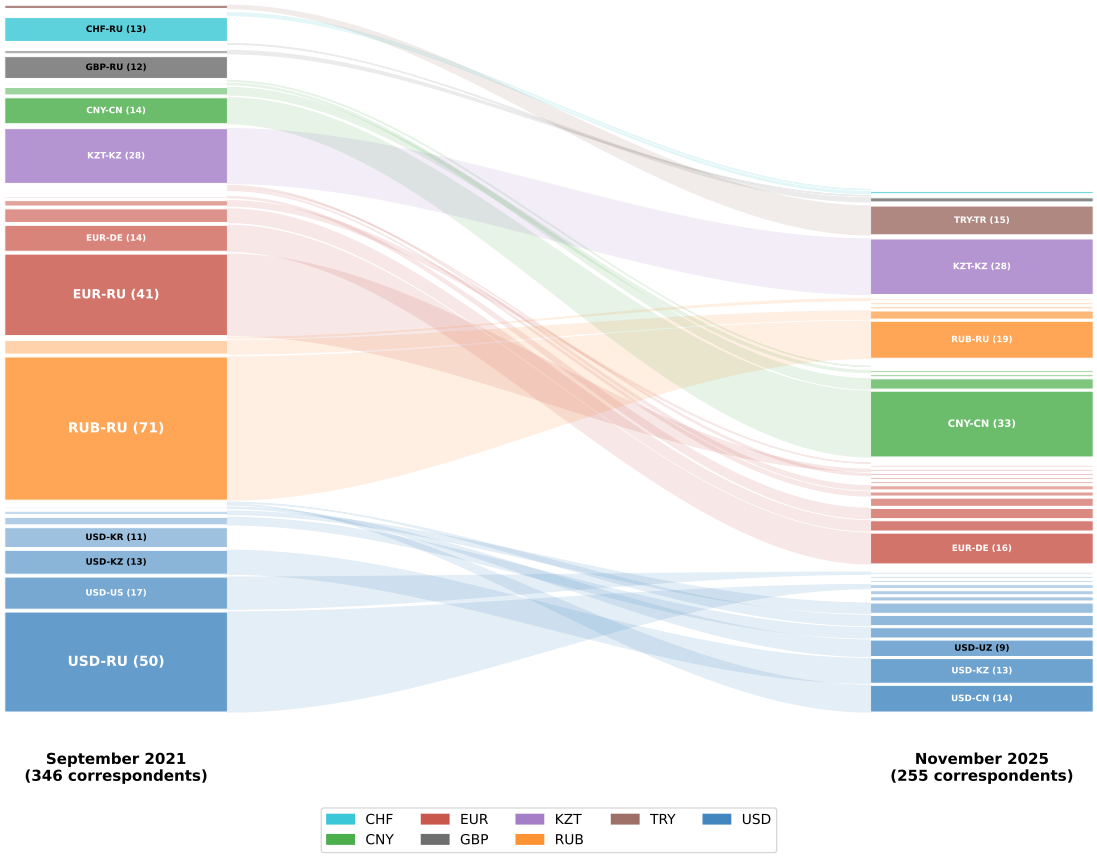
Kyrgyzstan and Russia provide additional evidence on how financial systems adjust to sanctions that affect only a subset of financial institutions, with patterns similar to Belarus emerging, despite differences in scale. In Kyrgyzstan, sanctions affected only three financial institutions, but this represents more than 10 percent of the 28 institutions in the data. Figure 9 shows that the number of Kyrgyz correspondents declines from 346 in 2021 to 255 in 2025—a more moderate contraction than in Belarus or Russia—but is accompanied by a clear reconfiguration of clearing relationships. In 2021, dollar clearing occurred both through U.S. financial institutions, which provide direct access to dollar payment systems, and through Russian intermediaries. By 2025, these relationships largely disappear. Kyrgyz financial institutions retain the ability to clear dollars, but do so primarily through Chinese, Kazakhstani, and Uzbek intermediaries, indicating a shift toward more indirect clearing channels. At the same time, yuan correspondent relationships with Chinese financial institutions expand significantly, from 14 in 2021 to 33 in 2025.

Changes in Russia's correspondent banking relationships, shown in Figure 10, are more pronounced and broad-based, reflecting the scale and scope of sanctions applied to its financial system. Direct access to Western currency clearing is almost entirely eliminated, with sharp contractions across dollar, euro, and pound correspondents. As in Belarus and Kyrgyzstan, the remaining connections become increasingly indirect and concentrated in a smaller set of currencies and intermediary jurisdictions. Payments are routed through a narrower set of intermediary financial institutions, increasing reliance on a limited number of nodes in the correspondent network. At the same time, the importance of yuan clearing via Chinese financial institutions rises markedly, as does clearing of the Kazakhstani tenge through Kazakhstani institutions. These patterns highlight a broader reorientation of Russia's external financial linkages away from Western currency systems and toward alternative currency networks and regional intermediaries.[17]

Across the four studied countries, sanctions sharply reduce direct access to Western currency clearing while leaving residual connectivity that is increasingly indirect and concentrated in a smaller set of intermediary institutions. The remaining correspondent relationships are reoriented toward alternative

[17] Additional tables and figures describing correspondent banking relationship networks in Kyrgyzstan, Russia, and Myanmar are found in the Appendix.

Figure 9: Evolution of Kyrgyzstan's CBRs, 2021-2025



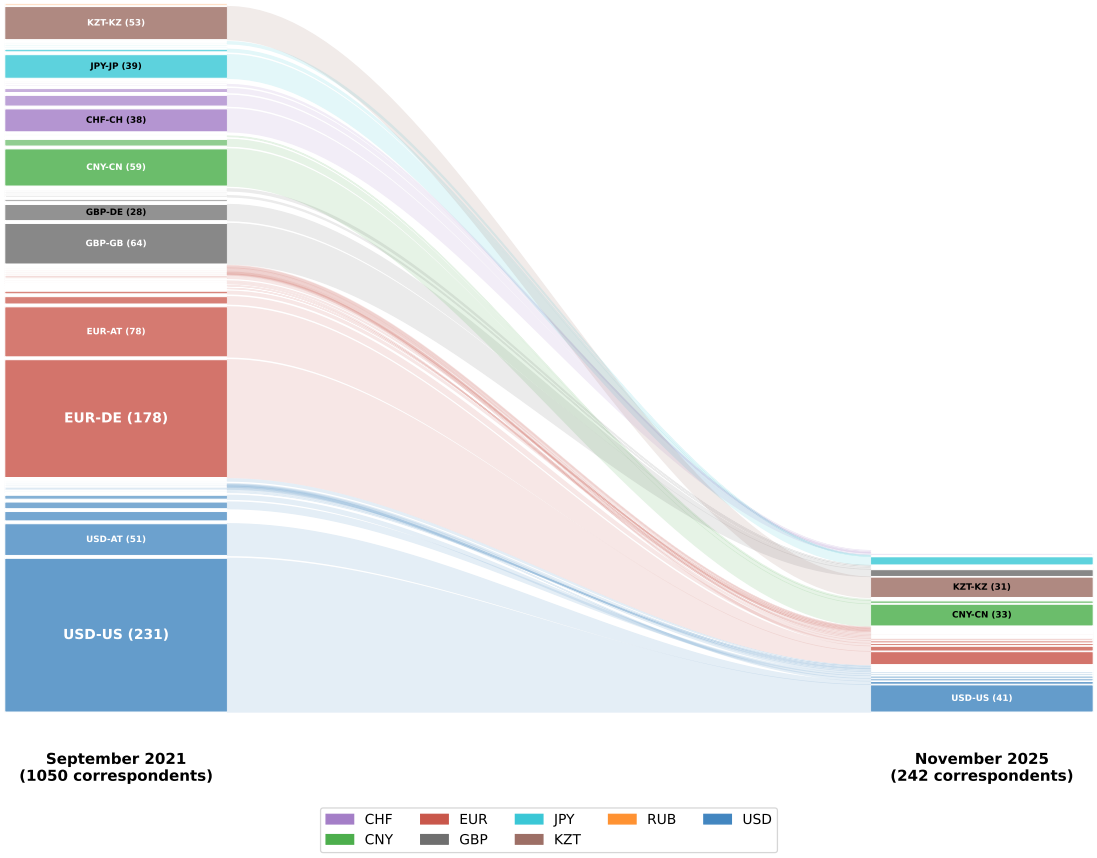
currencies and jurisdictions, especially CNY clearing in China.

7.3 Correspondents by Currency, A Global Perspective

The reorientation toward the Chinese yuan correspondents documented above may reflect either the effects of sanctions or broader global trends, including China's economic growth and efforts to internationalize its currency. We therefore ask whether the increase in yuan-based correspondent banking relationships in countries such as Belarus, Kyrgyzstan, Russia, and Myanmar is unusual relative to other EMDEs.

Countries with large increases in sanctions exposure exhibit substantially larger increases in yuan-based correspondent relationships than other EMDEs. Figure 11 plots, across countries, the change in the share of sanctioned financial institutions between 2021 and 2025 against the change in the share of cross-border correspondents that clear payments in yuan. The horizontal dotted line shows the average increase in the yuan share, about 1 percentage point. Belarus, Kyrgyzstan, Russia, and Myanmar—highlighted in the figure—stand out as clear outliers, with increases in yuan connectivity far exceeding the EMDE average. This indicates that the reorientation toward the yuan in these countries

Figure 10: Evolution of Russia's CBRs, 2021-2025

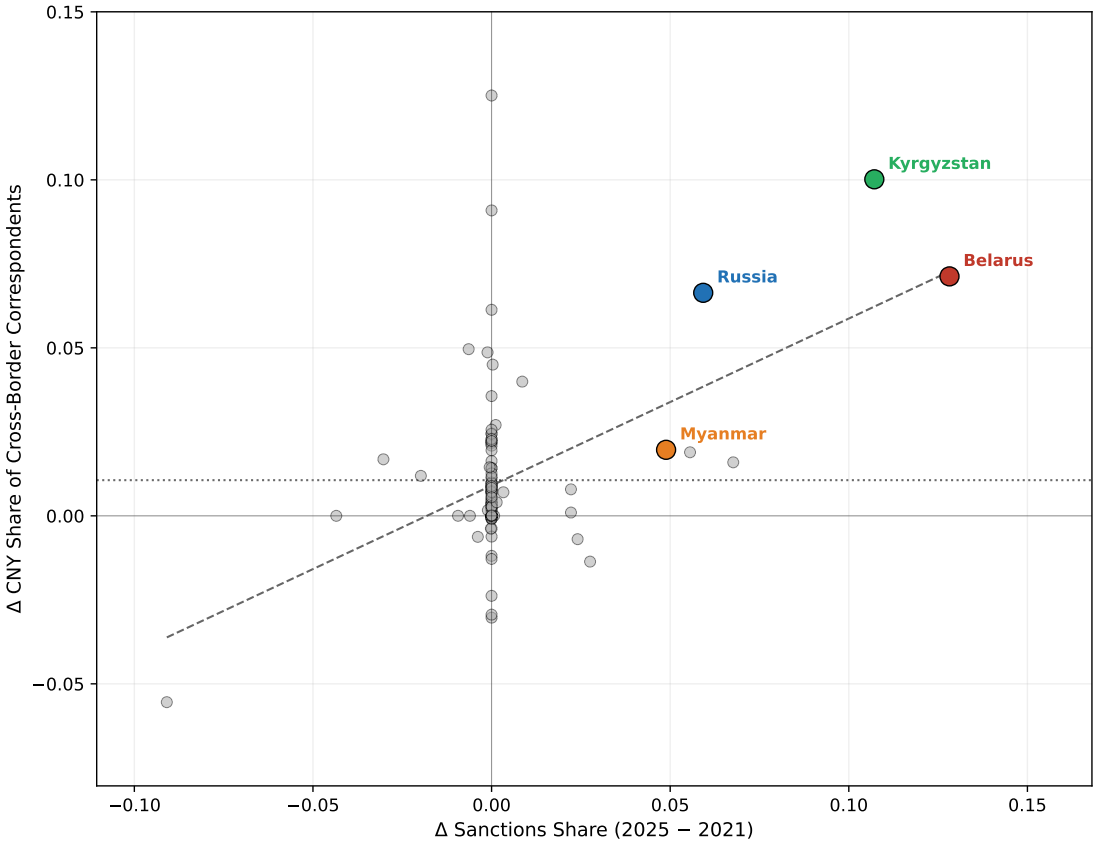


is not simply part of a global trend.

To understand which currencies drive these changes, Figure 12 plots the share of cross-border correspondent banking relationships by currency in 2021 and 2025 for these four countries, alongside the rest of the EMDE sample. Because these shares are constructed from an unweighted count of correspondent relationships, they differ from standard measures based on payment values or trade invoicing. In particular, the dollar's share of correspondents in the data is only about 25 percent, much lower than its dominant role in transaction values (Cerutti et al., 2025; Gopinath and Stein, 2021). This reflects the fact that financial institutions typically maintain correspondents in multiple currencies, so each individual currency represents only a fraction of total relationships even when it dominates underlying payment flows.

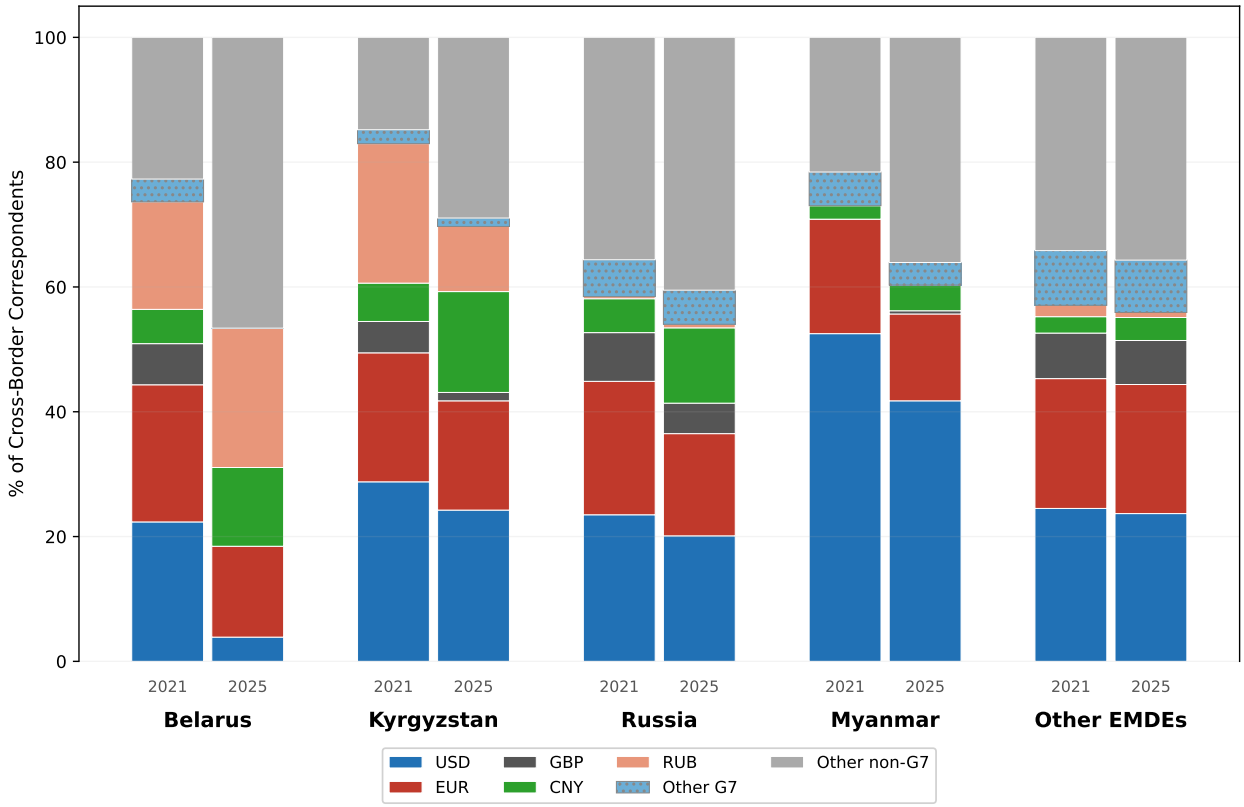
In heavily sanctioned countries, the rise in yuan-based correspondent relationships reflects a substitution away from Western currencies, particularly the U.S. dollar. Figure 12 shows that increases in yuan shares are accompanied by declines in dollar and other G7 currency correspondents, though the composition varies across countries. In Belarus, the sharp contraction in dollar and other G7 correspondents is offset by increases in yuan, ruble, and regional currencies such as the Kazakhstani tenge.

Figure 11: Sanctions and Yuan Share of Correspondents



In Kyrgyzstan, the largest decline is in ruble correspondents, but this is similarly accompanied by a marked expansion in yuan relationships. Russia and Myanmar exhibit more gradual changes, but both show declines in the share of dollar correspondents alongside increases in the share of yuan correspondents. Across these countries, the expansion of yuan clearing occurs in the context of reduced access to Western currency clearing.

Figure 12: Correspondents by Currency, Selected Countries with Increased Sanctions



In contrast, in EMDEs that are not heavily affected by sanctions, the rise in yuan correspondents does not come at the expense of dollar clearing. The final grouping in Figure 12, labeled "Other EMDEs," shows that the dollar's share declines only slightly, while the yuan's share increases by roughly 1 percentage point. These changes are modest and do not reflect a reallocation away from Western currencies. Instead, they are consistent with a gradual expansion of yuan usage alongside relatively stable dollar connectivity.

8 Conclusions

This paper offers the first comprehensive look at how financial sanctions reshape the global correspondent banking network. Using a difference-in-differences methodology applied to commercial data on more than 17,000 EMDE financial institutions, we reach three main findings. First, sanctioned finan-

cial institutions lose correspondents across nearly all currencies and geographies. The reductions are statistically significant and economically meaningful for dollar, euro, pound, and yuan clearers alike. The lone exception is ruble correspondents located in Russia, which tend to persist despite Western sanctions.

Second, in countries where a substantial share of the financial sector came under new sanctions during 2021–2025—Belarus, Kyrgyzstan, Myanmar, and Russia—unsanctioned financial institutions did not simply maintain the status quo. They reoriented their correspondent relationships, preserving or expanding yuan clearing connections, particularly with Chinese financial institutions. The yuan share of cross-border correspondents grew by 2 to 10 percentage points in these countries, far exceeding the global average.

Third, this reorientation appears concentrated in the directly affected countries. Across the rest of the EMDE world, the dollar's share of correspondent relationships declined and the yuan's share increased, but each by less than 1 percentage point. The large-scale restructuring of correspondent banking toward the yuan is, at least so far, a phenomenon of heavily sanctioned economies rather than a broad global trend.

These findings carry implications for policymakers weighing the costs and benefits of financial sanctions. Sanctions clearly degrade targeted institutions' access to the global payments network. But they also appear to catalyze a search for alternatives among the unsanctioned institutions that remain, shifting the currency and geographic composition of a country's overall financial infrastructure.

Our analysis carries several limitations. We do not weight results by the volume or value of payments flowing through correspondent banking relationship corridors, so our count-based measures may not fully capture economic magnitudes. Sample sizes for newly sanctioned institutions are small, limiting the power of our inference. Sanctions are also correlated with other potentially confounding factors, including shifts in bilateral trade and investment patterns, which may themselves be the key drivers of changes in the structure of countries' payments networks. Most importantly, we do not provide evidence connecting changes in the correspondent banking network to real economic activity at the bank-customer or country level. Future work should aim to make this link.

References

Borchert, Lea, Ralph De Haas, Karolin Kirschenmann, and Alison Schultz, "Broken Relationships: De-risking by Correspondent Banks and International Trade," 2024.

Callaway, Brantly and Pedro HC Sant'Anna, "Difference-in-differences with multiple time periods," *Journal of econometrics*, 2021, *225* (2), 200–230.

Cerutti, Eugenio, Melih Firat, and Martina Hengge, "Global Cross-Border Payments: A $1 Quadrillion Evolving Market?," 2025.

Chung, Cindy, "Correspondent Banking in Trade and International Payments," Technical Report 2025.

Cipriani, Marco, Linda S Goldberg, and Gabriele La Spada, "Financial sanctions, SWIFT, and the architecture of the international payment system," *Journal of Economic Perspectives*, 2023, *37* (1), 31–52.

Clayton, Christopher, Matteo Maggiori, and Jesse Schreger, "A framework for geoeconomics," Technical Report, National Bureau of Economic Research 2023.

_ , _ , and _ , "A theory of economic coercion and fragmentation," *Available at SSRN 4767131*, 2024.

Collin, Matthew, Samantha Cook, and Kimmo Soramaki, "The impact of anti-money laundering regulation on payment flows: Evidence from SWIFT Data," *Center for Global Development Working Paper*, 2016, (445).

Erbenova, Mrs Michaela, Ms Yan Liu, Mr Nadim Kyriakos-Saad, Aledjandro Lopez Mejia, Jose Giancarlo Gasha, Mr Emmanuel Mathias, Mr Mohamed Norat, Ms Francisca Fernando, and Ms Yasmin Almeida, *The withdrawal of correspondent banking relationships: a case for policy action*, International Monetary Fund, 2016.

Farrell, Henry and Abraham L Newman, "Weaponized interdependence: How global economic networks shape state coercion," *International security*, 2019, *44* (1), 42–79.

Fracassi, Cesare, Eric Lee, and Tarik Roukny, "No Country for Dirty Money? The Economic Footprint of Anti-Money Laundering Standards," *The Economic Footprint of Anti-Money Laundering Standards (August 22, 2025)*, 2025.

Goodman-Bacon, Andrew, "Difference-in-differences with variation in treatment timing," *Journal of econometrics*, 2021, *225* (2), 254–277.

Gopinath, Gita and Jeremy C Stein, "Banking, Trade, and the Making of a Dominant Currency," *The Quarterly Journal of Economics*, 2021, *136* (2), 783–830.

Grolleman, Dirk Jan and David Jutrsa, *Understanding Correspondent Banking Trends: A Monitoring Framework*, International Monetary Fund, 2017.

Hirschman, Albert O, "The strategy of economic development," 1958.

_ , *National power and the structure of foreign trade*, Vol. 105, Univ of California Press, 1980.

Melitz, Marc J, "The impact of trade on intra-industry reallocations and aggregate industry productivity," *econometrica*, 2003, *71* (6), 1695–1725.

Mohr, Cathrin and Christoph Trebesch, "Geoeconomics," *Annual Review of Economics*, 2025, *17*.

Mundial, Banco, "Withdrawal from Correspondent Banking: Where, Why, and What to do about it," *Washington DC: World Bank Group*, 2015.

Myles, Jamieson, "Elastic Infrastructure: A Historical Perspective on Credit in Global Correspondent Banking and the Cross-Border Payments System," Technical Report 2025.

Perez-Saiz, Hector, Ms Longmei Zhang, and Roshan Iyer, *Currency Usage for Cross Border Payments*, International Monetary Fund, 2023.

Rice, Tara, Goetz von Peter, and Codruta Boar, "On the global retreat of correspondent banks," *BIS Quarterly Review, March*, 2020.

Robinson, Gary, Sabine Dörry, and Ben Derudder, "Global networks of money and information at the crossroads: Correspondent banking and SWIFT," *Global networks*, 2023, *23* (2), 478–493.

Sun, Liyang and Sarah Abraham, "Estimating dynamic treatment effects in event studies with heterogeneous treatment effects," *Journal of econometrics*, 2021, *225* (2), 175–199.