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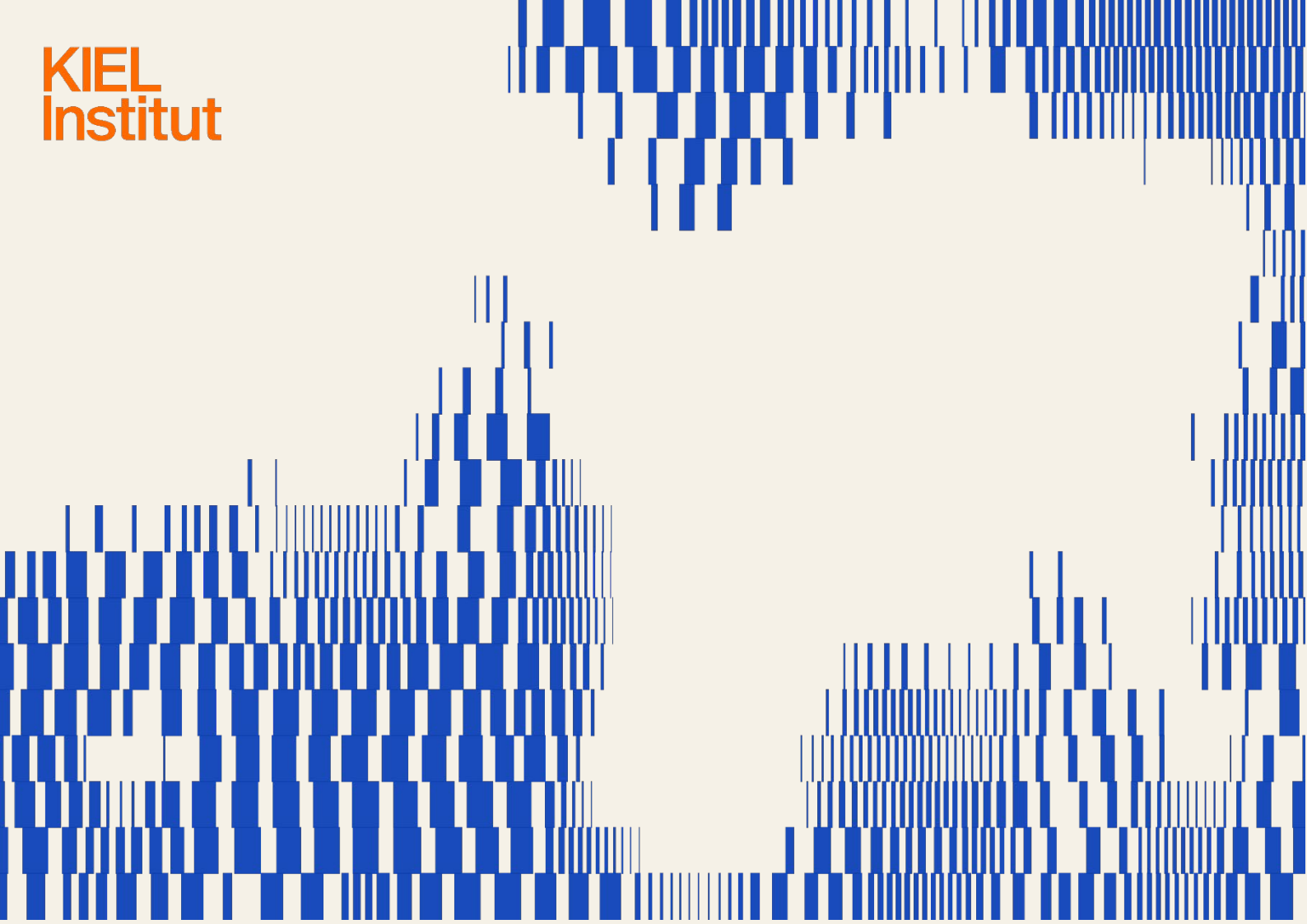

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States as Financiers: International Lending in War and Peace

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Abstract*

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States are major international financiers, but their role is poorly understood. We study state-driven cross-border lending over two centuries using a new database covering 1.2 million official loans and grants by 134 governments and 70 multilateral institutions since 1790. We document a dual, state-contingent structure of international credit. In normal times, private creditors dominate cross-border lending. In adverse states of the world, such as wars and financial crises, official creditors step in, at times on a massive scale. These official flows are driven by great powers, are highly subsidized, and are largely absent from canonical models in international macroeconomics.

Keywords: Sovereign debt, Capital flows, Financial crises, Bailouts, War finance, Disaster risk
JELs: E42, F33, F34, F35, F36, G01, G20, N1, N2

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1 Introduction

International macroeconomics typically models cross-border lending as the outcome of decentralized private markets. This framework has yielded important insights, but it misses a central empirical regularity: in major economic crises and wars, private capital flows retreat while official lending expands sharply, often overtaking private inflows at the country level and, in extreme episodes, even at the global level. We document and quantify this state-contingent structure of global credit over the past two centuries using new data on 1.2 million official loans and grants by 134 governments and 70 multilateral institutions since 1790, together with new data on sovereign debt stocks by creditor type. We uncover a dual structure of global credit: private markets dominate in normal times. In adverse states of the world, however, governments, central banks, and multilateral institutions become major international creditors.

The size and timing of these state-driven credit flows make them a first-order feature of international finance. Yet sovereign-to-sovereign lending and other forms of official finance remain poorly measured and poorly understood, hampered by a lack of transparency and systematic data. Governments often conceal their international lending, even from their domestic constituencies, particularly during wars and crises. In addition, official flows are fragmented across government agencies, multilateral institutions, and central banks, with disclosure practices that vary widely across countries and over time. Standard data sources in international finance, including rating agencies and commercial data providers, focus on sovereign bonds held by private investors and commercial bank lending but typically exclude government-to-government loans and central bank credit. No international organization monitors the full range of these cross-border flows and debt stocks.[1] As a result, research on official international finance has remained limited (notable exceptions include Alfaro et al. (2014) and Arellano and Barreto (2025)).[2]

We address this gap by tracing and analyzing official and private international lending flows from 1790 to 2024.[3] The long historical perspective is essential: our sample covers two world wars, or three counting the Napoleonic Wars, as well as understudied periods such as the early and mid-19th century and the largely opaque era of capital controls from the 1930s to the 1970s. By extending the data well before 1970, we provide the first systematic long-run account of how international credit allocation, both official and private, evolves during wars, global crises, and shifts in the geopolitical order.[4] At the core of our analysis are 1.2 million cross-border loans and grants extended by official (sovereign) lenders. We complement these data with granular evidence on private capital flows around major wars and financial crises, as well as newly constructed time series on outstanding sovereign debt owed to private versus official creditors.

We establish three main findings.

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[1] The closest modern analog to our dataset is the World Bank's International Debt Statistics (IDS). However, it is limited to low- and middle-income countries, begins in 1970, and is not accessible at the instrument (loan) level.

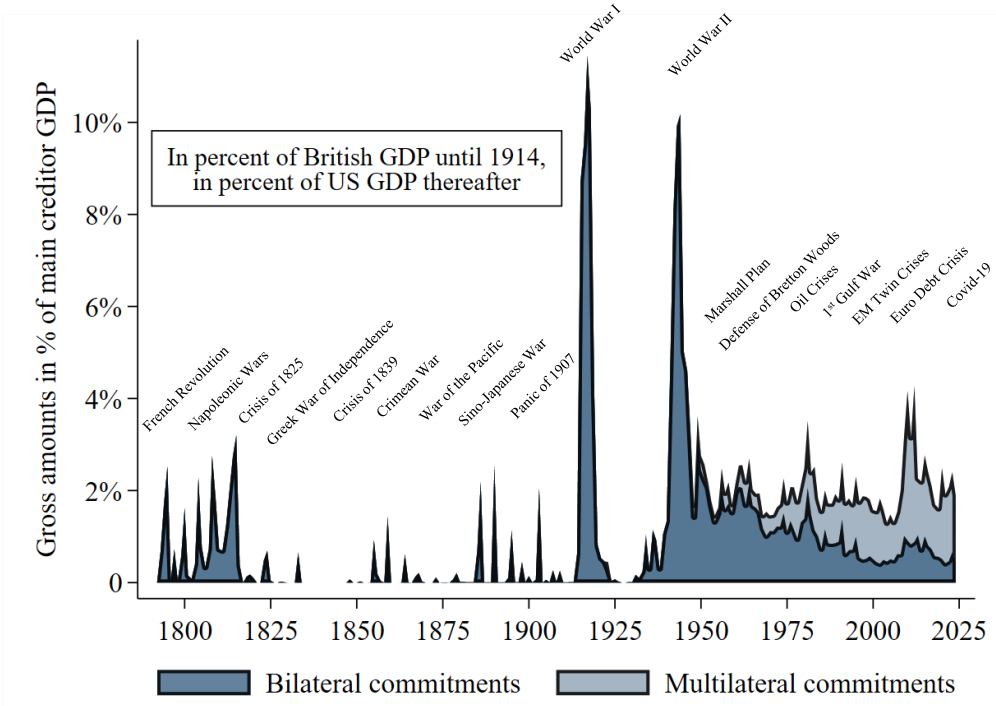
[2] Alfaro et al. (2014) and Avdjiev et al. (2022) study aggregate official flows since the 1970s. Arellano and Barreto (2025) develop a theory that incorporates sovereign borrowing from both official and private creditors.

[3] For brevity, we use official "lending" to denote both loans and grants, the latter of which play a minor role. Sovereign-to-sovereign lending is typically executed through loans, whereas private-to-sovereign lending has historically been dominated by sovereign bonds (see Meyer et al. (2022)).

[4] With our focus on official flows and crises and wars, we expand on earlier long-run work on private international capital flows, e.g. Stone (1999), Obstfeld and Taylor (2004), Bordo and Meissner (2011), Reinhart et al. (2017).

First, official international lending is much larger than commonly known. Since 1790, official lending flows have repeatedly matched or surpassed private cross-border flows, both at the country level and globally. It is at times the dominant or even only form of cross-border finance in the available data. The global aggregate is shown in Figure 1, where annual gross official lending, defined as the sum of all individual loans and grants, is scaled by UK GDP until 1914 and by US GDP thereafter.[5] Major surges occurred during the Napoleonic Wars and the two World Wars, when private capital markets largely ceased to function and official lending exceeded 10 percent of U.S. GDP in some years. In peacetime, financial crises are the primary and recurring trigger of large official flows, with a history that extends to the 19th century, well before the creation of multilateral institutions and the Bretton Woods system. Since World War 2, crisis lending has become more systematic and institutionalized, with the rise of the IMF, the World Bank, the regional development banks, and growing cross-border central bank liquidity support. Over time, these flows have morphed into large and persistent official debt stocks. In the past century, official creditors account for 30 to 60 percent of total external public debt worldwide, depending on whether the averages are weighted by GDP or not. Today, in the average developing country, about 60 percent of external public debt is owed to bilateral and multilateral official creditors.

Figure 1: Bilateral and multilateral official lending 1790 - 2024



Note: This figure shows the total amount of gross yearly official commitments through grants, loans and guarantees in percent of British GDP (until 1914) and in percent of US GDP thereafter. Cross-border lending by central banks is excluded from this figure. All data is from our new official lending database (see Section 2 and Appendix A for details).

[5] We use UK and US GDP for scaling, since these series have been carefully scrutinized by economic historians. The overall picture looks similar if we use an imputed, noisier series of global GDP (see Appendix D.4 and E.1).

Second, official international lending is dominated by the great powers of the era: Britain in the 19th century, the United States in the 20th century, and China in the early 21st century (Horn et al., 2025). Dominant states repeatedly extended large and often risky official loans to other governments during crises and wars. Their central banks also serve as international lenders of last resort, historically through short-term credits, and more recently through swap lines on an unprecedented scale. These findings expand our understanding of financial hegemony. Existing work shows that dominant powers provide the reserve currency, produce the global safe asset, and bear disproportionate risk through private markets (Gourinchas and Rey, 2007; Caballero et al., 2008; Rey, 2015; Maggiori, 2017; Gopinath et al., 2020; Pflueger and Yared, 2024). Our results reveal a complementary channel of hegemonic finance: large-scale sovereign-to-sovereign lending, which is absent from most existing models.

Third, private and official credit flows differ sharply in their cyclicality and pricing. Private cross-border flows are pro-cyclical, surging during economic booms and contracting during downturns or episodes of financial and geopolitical stress. During wars, private flows may disappear altogether in the face of capital controls, sanctions, and extreme risk. Official flows move in the opposite direction: they are stabilizing and counter-cyclical, rising in periods of crisis and disruption. At the global level, official credit flows are positively correlated with wars, geopolitical risk, financial crisis incidence and other macroeconomic disasters (Barro and Ursúa, 2008), offering a near mirror image of private flows. The contrast between official and private flows extends to the lending terms. Official loans carry interest rates well below market benchmarks and, unlike bond spreads, their pricing is largely insensitive to borrower credit risk. Maturities on official loans are also substantially longer, particularly for higher-risk sovereigns.

Taken together, our findings indicate that the international financial system features two distinct, state-contingent sources of credit. In normal times, private markets dominate cross-border lending. In turbulent periods marked by systemic debt crises or major wars, private lending collapses and official lending expands, both bilaterally (sovereign-to-sovereign) and through regional and multilateral institutions. In the most severe episodes, it is governments rather than private investors that intermediate the bulk of external credit.

These results question a central premise of canonical sovereign debt models: that international lending is driven by decentralized private investors seeking yield and pricing default risk, independently of the state of nature. Instead, our evidence shows that a substantial share of international lending is provided by sovereign creditors with political and strategic motives. To explore the determinants of this state-led intermediation, we estimate a 200-year gravity model of bilateral sovereign lending, building on theoretical work by Bulow and Rogoff (1988), Tirole (2015), Gourinchas et al. (2019), and Azzimonti and Quadrini (2023). We find that bilateral trade and financial exposure are strong predictors of official lending flows, particularly during financial crises, consistent with governments seeking to limit adverse spillovers to their domestic banks, bondholders, and exporters. In wartime, military alliances become the dominant predictor, outweighing economic linkages. Official international lending thus reflects self-interest in both peace and war.

Connections to the literature: Thanks to a large body of research we have a good understanding of why and how *private* investors allocate capital abroad. Classic international finance theories emphasize portfolio choice under risk and incomplete markets, while a large empirical literature examines the drivers, composition, and macroeconomic effects of private capital flows, typically using data from

the 1970s onward, when capital controls started to be lifted and cross-border data became widely available. Key contributions include Lane and Milesi-Ferretti (2007); Alfaro et al. (2008); Forbes and Warnock (2012); Broner et al. (2013); Coeurdacier and Rey (2013); Gourinchas and Jeanne (2013); Bruno and Shin (2015); Rey (2015); Maggiori et al. (2020); Coppola et al. (2021). Calvo et al. (1993) study external push factors in driving capital flows to emerging markets, while Rey (2015) highlights the global financial cycle in private asset markets. Lewis (1996) and Maggiori (2017) provide insights on the scope of international risk-sharing through private capital markets. We address some of these issues for official flows based on new, granular long-run data. Relatedly, we contribute to the extensive literature on financial globalization and capital flows in history (Obstfeld and Taylor, 2004; Bordo and Meissner, 2011). We provide more comprehensive data and analysis, especially by focusing on official international finance, which has received limited attention from economic historians.

Our work connects to the literature on sovereign debt. The large body of research in this field focuses almost exclusively on sovereigns as borrowers, while the role of sovereigns as creditors, particularly as cross-border lenders, has received little systematic attention. The history and characteristics of official debt have long been overlooked, with exceptions such as Alfaro et al. (2014), Arellano and Barreto (2025), and a rich body of work on IMF and World Bank lending (which only became large in the 1980s and today accounts for a third of total official lending). Numerous papers have explored the pricing of privately held sovereign bonds and the determinants and effects of sovereign default on private debt; see the classic papers by Eaton and Gersovitz (1981), Bulow and Rogoff (1988), Atkeson (1991), or Arellano (2008) and the overviews by Reinhart and Rogoff (2009), Panizza et al. (2009), Aguiar and Amador (2014), or Mitchener and Trebesch (2023). In contrast, there has been very little work on lending by sovereigns (Reinhart and Trebesch, 2016; Schlegl et al., 2019; Horn et al., 2022, study defaults on official loans). As described in the next section, we construct the first long-run database that decomposes sovereign debt stocks into private and official creditor components. Our new data helps to inform a nascent theoretical literature on official sovereign debt (Arellano and Barreto, 2025; Liu et al., 2025; Sosa-Padilla and Roldan, 2025; Jiang, 2025; Bianchi et al., 2026).

Relative to the literature on financial crises, we show that crises are not just characterized by a sudden, dramatic *outflow* of private capital, as emphasized by Calvo (1998) and Lorenzoni (2014), but also often by a sharp *inflow* of official loans. Our paper is the first systematic long-run study on international rescue lending during financial crises worldwide. We expand on existing narratives and data on country bailouts by Kindleberger (1984), Bordo and Schwartz (1998), Roubini and Setser (2004), Corsetti et al. (2018) or Arellano et al. (2016). We show that crisis lending has evolved from comparatively infrequent, ad-hoc rescue loans by allied states prior to WW2 to a more systematic response by multilateral institutions often with additional financing from multiple creditor governments. Our data facilitate future research on the determinants, design, and consequences of cross-border bailouts (related theory work includes Corsetti et al. (2006), Farhi and Tirole (2018), Gourinchas et al. (2019), Azzimonti and Quadrini (2023)).

Our analysis contributes to the economic literature on wars and rare disasters, as we discuss in more detail in the sections that follow. Barro (2006), Barro and Ursúa (2008), and Gabaix (2012) show that macro disasters have large and lasting implications for consumption and asset prices. Martin et al. (2008), Glick and Taylor (2010), Hall and Sargent (2022), Gorodnichenko and Rashkovan (2023), and Federle et al. (2024) document the large impact of wars on trade and the macroeconomy. We add to

this by focusing on private and official capital flows in these episodes. During global wars (notably WW1 and WW2), yearly official lending flows reached 10% of US GDP. International transfers at this scale are likely to have major effects on output, trade, and asset markets, yet these effects remain largely unexplored. Global disaster risk and official finance are closely linked.

There is also a growing body of work in geoeconomics and fragmentation (e.g. Broner et al., 2024; Gopinath et al., 2024; Clayton et al., 2025; Bianchi et al., 2026). We show that in periods of geopolitical tensions and great power war, private capital flows can collapse entirely, while state-led finance surges.

Finally, and relatedly, our data facilitates a reassessment of fundamental questions of international cooperation and international financial support. Existing work on cross-border economic cooperation is largely qualitative or focused on the realms of fiscal and monetary policy, exchange rate policy, or banking regulation (e.g. Keohane, 1984; Kindleberger, 1986; Gilpin, 1987; Eichengreen, 1992; James, 1996; Farhi and Werning, 2017). Our 200-year dataset allows us to study the determinants and outcomes of financial cooperation and transfers via sovereign-to-sovereign and central-bank-to-central-bank flows in a systematic way.

We thus help to bridge the various strands of work on international financial support which, thus far, have remained largely disconnected, including work on (i) foreign aid (e.g. Qian, 2015); (ii) financial crisis bailouts, e.g. by the IMF, within the Eurozone 2010-12 or US-driven bailouts in the Asian or Mexican crises of the 1990s (e.g. Lane, 2012); (iii) China's overseas lending and its Belt and Road Initiative (e.g. Dreher et al., 2022; Horn et al., 2021, 2022); (iv) the US Marshall Plan (e.g. De Long and Eichengreen, 1993); (v) official export credits (e.g. Matray et al., 2026); (vi) the international financing of wars, e.g. in the current Russian war against Ukraine (e.g. Trebesch et al., 2023), or on (vii) central bank to central bank crisis lending, including its modern-day reincarnation - central bank swap lines (e.g. Bahaj and Reis, 2022). Our paper combines all of these variants of official international lending under a common concept and in one data resource, thus allowing for a much more comprehensive picture of the phenomenon. As a byproduct, our data also provide a new long-run history of international development aid back to the 19^{th} century, since grants and deeply concessional loans form a natural subset of official flows.

Taken together, our paper brings state finance into the analysis of international capital flows, sovereign debt, financial crises, economic disasters, and wars, filling an important gap at the intersection of these literatures. The main novelties are the detailed quantification of opaque official international lending flows, our analysis of these flows (dynamics, modalities, and drivers), and the contrast of official to private cross-border flows. The resulting picture differs notably from standard accounts of the "architecture and plumbing" of the international financial system, both in history and today. We stress that the role of the official sector in global finance is simply too big to ignore.

The remainder of the paper proceeds as follows. Section 2 introduces our new datasets and the sources, defines core concepts, and characterizes the types of official creditors and institutions since 1790. Section 3 provides a panoramic view of official sovereign lending across two centuries. Section 4 compares official and private international lending flows with a focus on their dynamics around major wars and financial crises. Section 5 examines the drivers of official lending through a 200-year gravity model, followed by our concluding remarks. The appendix provides details of the construction of each of the datasets, documents the vast pool of sources consulted, and shows additional results.

2 Three new datasets on official and private finance

A significant obstacle to studying the history of global capital flows is the lack of systematic and encompassing data. The measurement gap is particularly acute when it comes to official international finance, which requires combing through a vast number of idiosyncratic documents. We address this shortfall by gathering and harmonizing hundreds of sources on capital flows and debt stocks over nearly 240 years including international treaties, budget accounts, archival records, and data from international organizations.

We produce three new datasets that provide the most comprehensive historical picture of official and private international lending to date.

i. **International Official Lending Database:** This granular database traces official cross-border lending flows (bilateral and multilateral, including grants), for a global country sample over 1790-2024. Besides covering the incidence, origin, destination, and amounts of more than 1 million official loan transactions, we also gathered information on the interest rates and repayment terms, where available.

ii. **Debt owed to official and private creditors (stocks):** This database offers a decomposition of sovereign external debt stocks by creditor type (private versus official) for a broad country sample, 1910-2024. Such a breakdown by creditor is unique in scope and not available in previous long-run datasets on public debt ratios and stocks (e.g. Reinhart and Rogoff, 2009, who focus on domestic versus external debt). Compiling this dataset of debt stocks required a large additional set of sources, in particular archival material on debt gathered from international organizations.

iii. **Private credit flows database in debt crises and wars:** We collect new, instrument-level data on private cross-border credit flows around 36 major financial crises and 35 Great Power War episodes, thus filling an important gap.

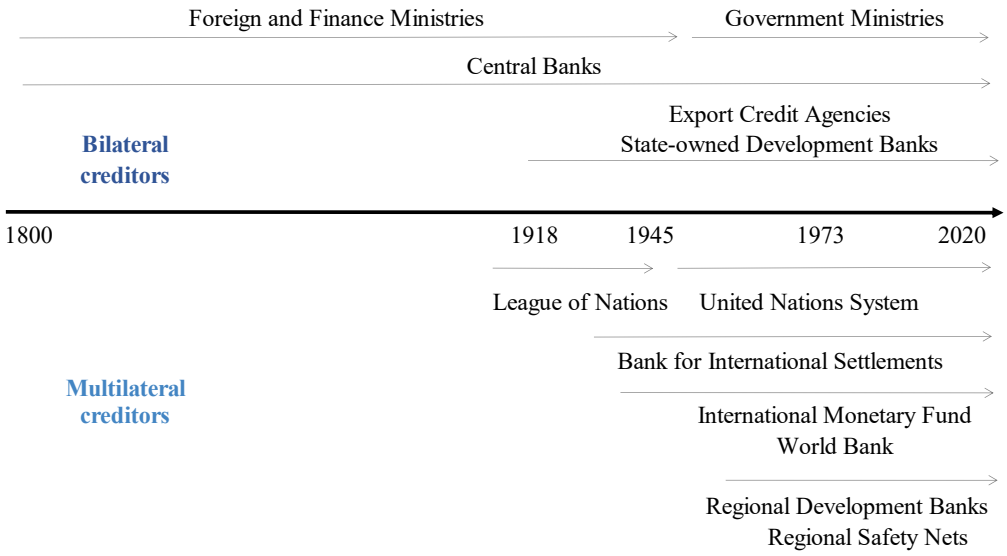
2.1 Concepts, definitions, and scope of data collection

We consider official international financial flows in the form of grants, loans and debt guarantees extended by state-controlled creditors to a foreign sovereign debtor. This includes loans or grants extended (i) between two governments of independent states or their agencies, (ii) by a multilateral or regional financial institution to a debtor country government, or (iii) between central banks of two countries. We build on the standard OECD definition of official flows according to which: *"official transactions are those undertaken by central, state or local government agencies at their own risk and responsibility [and...] includes transactions by public corporations i.e. corporations over which the government secures control"* (OECD, 2018). We use this modern definition and then extend it backwards, to code official finance flows and stocks, focusing on loans and grants.

The creditors: Over the past 200 years, the profile of official creditors has changed profoundly and now includes a much larger number of bilateral as well as multilateral creditor institutions. Figure 2 provides a stylized representation of the evolution of the official creditor universe and maps out the diverse types of creditors that our data collection effort includes. During the 19$^{\text{th}}$ century, official lending was exclusively extended bilaterally. The creditors were treasuries, foreign ministries or

central banks of nations. After WW2, bilateral lending continues but new, specialized creditors such as development banks and export credit agencies emerge and there is a proliferation of multilateral financial institutions. Multilateral creditors are international financial institutions that are established through political agreements among multiple member countries (IMF, 2014; OECD, 2018). Examples include not only the United Nations, the International Monetary Fund, and the World Bank, but also a large number of regional development banks and safety nets (see Appendix Table A2 for a full list and Appendix Section A.2 for a detailed historical account of the institutional evolution of official lending over the past two centuries).

Figure 2: The universe of official sovereign creditor institutions 1790 - 2024



Note: This figure shows the most important international official creditor institutions over time, distinguishing between bilateral creditors (top panel, dark blue) and multilateral creditors (bottom panel, light blue). See Appendix Section A.2 for a more detailed summary of the historical evolution of official lending.

The debtors: We track lending to independent countries only and do not capture transactions with colonies or other overseas territories, as these flows are arguably more akin to domestic lending and do not share the same commitment and enforcement problems that characterize non-colonial sovereign lending.[6] To identify the set of independent countries and to account for changes in borders or the break-up of empires, we follow the country classification by the Correlates of War project (for details see Appendix Section A.1). This implies that we classify colonies that become independent as new sovereigns (the overall patterns are similar if we drop newly independent colonies from the sample). Following the OECD definition of official flows, the creditor must be a state or state-owned entity. We impose no parallel restriction on the debtor. In principle, our dataset therefore captures both government-to-government and government-to-private lending transactions. In practice, however, less than five percent of the official flows in our data go to private sector entities and most of these are foreign grants to non-governmental organizations.

[6] For a discussion of resource flows within colonial empires see for example Davis and Huttenback (1987) or Esteves and Tuncer (2024).

Instruments: We aim to capture all forms of official grants and loans that are extended across borders. Loans are defined as all transfers in cash or in kind for which the recipient incurs legal debt and for which the resulting liability is not traded in secondary markets (OECD, 2018). This definition includes concessional and non-concessional instruments, trade advances and credits as well as drawdowns under credit lines and foreign currency swaps (on swap lines see Appendix A.3). On the latter, we follow standard practice and only count credit lines and foreign currency swap lines to the extent that they are being drawn down (IMF, 2014). We also include in our database cases of private creditor lending that are explicitly guaranteed by the creditor government.[7] Finally, we document cross-border grants which are defined as transfers of cash, goods or services, for which no repayment needs to be made (OECD, 2018).

Development aid: This category includes grants and concessional loans for economic development, including financing for infrastructure and reconstruction by state creditors. While our paper does not focus specifically on development aid, our data collection—by design—includes the full universe of aid flows from official donors.[8] In addition, we systematically trace all official grants and loans extended by states or state-backed institutions to finance post-war reconstruction and infrastructure projects abroad—such as the US Marshall Plan or China's Belt and Road Initiative. In doing so, we offer the first long-run quantitative account of international development aid as well as of large-scale, state-financed infrastructure and reconstruction initiatives. These grants and loans represent a distinct subset within the broader category of official international finance.

Portfolio investments and sovereign wealth fund holdings: Portfolio flows are not included in our data, as per the OECD definition of instruments. Official portfolio investments, such as secondary-market purchases of sovereign bonds by central banks or sovereign wealth funds (SWFs), cover market-based instruments that differ fundamentally from the direct credit instruments and grants traced here. Our focus is on transactions that are governed by an explicit contract signed between state-linked entities. We therefore also exclude implicit transfers between central banks, such as intra-euro area claims arising from the TARGET2 payment system, which are not governed by case-specific credit agreements. Future work may expand our granular data collection to include SWF and central bank portfolio flows, but detailed data on their holdings and purchases are even harder to come by than for loans and grants. As a result, our estimates of official lending stocks and flows should be interpreted as a lower bound on the total scale of global official finance.

2.2 Annual flows: The International Official Lending Database 1790-2024

To construct our long-run database back to 1790, we collect and combine information from hundreds of different data sources. This subsection briefly summarizes our main sources and coding approach on official loans and grants, with details shown in Appendix A.

Main sources:

International treaty series: Our primary source for official lending during the 19$^{\text{th}}$ century and up

[7] The provision of creditor government guarantees on sovereign bonds issued in private markets was a common way to support foreign countries during the 19$^{\text{th}}$ century and inter-war era (see Appendix A.2).

[8] According to the OECD, development aid includes all grants and loans with a development purpose and a grant element of at least 25 percent (see OECD (2018) for details).

until WW2 are international treaty collections, partly drawing on Broner et al. (2024). We make use of the fact that, beginning in the late 18th century, the conduct of foreign policy became more formalized, with loans between states increasingly codified in intergovernmental treaties (Keene, 2012). To identify bilateral lending in treaty collections such as the League of Nations Treaty Collection or the British government's UK Treaty Series database, we systematically search for all bilateral financial agreements that arrange cross-border loans, grants or guarantees between governments.

National budget accounts and parliamentary records: We supplement and cross-check the data from international treaties with national budget and parliamentary records. Government loans often required parliamentary approval, and lending transactions and debt claims were frequently listed in the annual budgetary accounts. Specifically, we comb through budgetary and parliamentary records of the UK, France, Germany and the US, which are the main bilateral creditor countries pre-WW2.

Statistical compendia and investor manuals: Another valuable class of sources are 19th and early 20th century statistical compendia and investor manuals that give detailed accounts of the sovereign debts of states, often at the loan level, e.g. the Moody's Investor Manual or Fortune's Epitome of the Stock and Public Funds (see Appendix A.5 for a full list). We systematically search these records to identify and cross-validate government-to-government loans and the corresponding debts.

Creditor archives: For a subset of official creditors - particularly central banks - the published reports lack disaggregated information on cross-border transactions. To fill this gap, we have supplemented our data collection in the onsite and online archives of the US Federal Reserve Bank, the Banque de France, the Bank of England, the BIS, the OECD, and the World Bank (see Appendix A for details on our archival data collection).

Data from international organizations, the CIA, and academic studies: In the aftermath of WW1, we draw extensively on publications by the League of Nations, the Bank for International Settlements (BIS), as well as the World Bank, the United Nations, and the Organization for Economic Cooperation and Development, which gain prominence following WW2. For Sino-Soviet Bloc lending in the post-WW2 period, we identified recently declassified CIA reports that meticulously trace foreign lending transactions by China, Russia, and their satellite states. In addition, we enrich our hand-coded data with a comprehensive data extract on bilateral lending from the World Bank's International Debt Statistics (IDS), which traces bilateral lending transactions of member states since the 1970s. For aid and grants, we further rely on the granular OECD Creditor Reporting System and the AidData database from William & Mary (Tierney et al., 2011), which we update and expand.

Scope of data collection:

Variables: For all creditors, debtors and instruments described in Section 2.1, we collect, whenever available, transaction-level data on (i) the lending amounts, (ii) the year of the agreement, (iii) the creditor and debtor country as well as (iv) the financial terms including the interest rate, the grace period, and the time to maturity.

Time and countries covered: The resulting database on official lending spans 235 years of data from 1790 to 2024 and covers more than 1.2 million loans, grants and guarantees extended by national agencies of 134 bilateral creditor countries and by 70 different international organizations. At the recipient side, we capture transactions to more than 200 different debtor countries. The total sum of

commitments from 235 years of official international lending amounts to more than 20 trillion dollars (in 2020 USD).

Data construction and validation: Our data coding approach involves two main steps. First, we make use of the primary sources described above to identify individual loans, grants and guarantees and to collect all available transaction-level data. In a second step, we then cross-check our data collection across different data sources and against the secondary literature (whenever available). This procedure helps us to fill gaps in the data collection and to reconcile conflicting information. Appendix A.7 outlines these consistency checks.

Limitations: We highlight three main limitations of the database. First, the risk of underreporting. Despite our best efforts, we are likely to miss some sovereign loans and grants (the same is true for any database on private flows). The scale of underreporting is difficult to assess also because we break new ground and no previously coded benchmark database exists, at least in the aggregate and not prior to 1970. It is reassuring, however, that our data collection closely aligns with many country- and episode-specific accounts by historians, against which we compare our data (see Appendix A.7). Second, measurement error. As is pertinent in debt data, errors and data inconsistencies in the primary sources are a concern, especially for smaller or poorer countries. In a robustness check, we therefore confirm our key findings in a more restrictive sample of 100 debtor countries and the past five decades, for which comprehensive and fully harmonized data exists (see Appendix E.2 for details). Third, our database primarily captures loan commitments rather than disbursements, as disbursement details for (opaque) state credits are even harder to find than commitments. To address this limitation, we complement our analysis by coding the resulting official debt stocks, as discussed in the next section.

2.3 Debt owed to external official and private creditors (stocks), 1910-2024

Beyond official *flows*, we compile a novel database on outstanding external debt *stocks* owed to bilateral and multilateral creditors (official), as well as to private creditors. The sample spans 1910–2024 and includes up to 140 developing, emerging, and advanced economies, with 8,400 country-year observations.

The newly consolidated data reveals that official debt accounts for a large share of total public external debt worldwide. This fills a major gap in the sovereign debt literature, which lacks a long-run dataset distinguishing official from private creditor debts (see Reinhart and Rogoff, 2009, for an overview). Furthermore, the data map how the lending flows translate into outstanding claims.

To create this new database, we embarked on another data collection journey, because the available sources on official lending flows often lacked details on debt stocks. This meant assembling, cleaning, and merging hundreds of additional reports and archival documents. For recent decades, a key starting point was the World Bank's International Debt Statistics which provides detailed debt stock data for developing and emerging economies since 1970. For the early 20^{th} century, debt stocks are aggregated from granular loan-level data extracted from a variety of sources such as historical Moody's reports. For the interwar years and the 1950s and 1960s we relied on detailed debtor reports such as by the League of Nations, the United Nations, the IMF, and the World Bank, accessed through their digital historical archives. See Appendix B for more details on sources, methodology, and coverage.

2.4 Private capital flows in selected crises and wars, 1790 - 2024

Our third data contribution is on private capital flows. Cross-border flows by private investors have been widely studied, but no long-run, granular dataset spans the past two centuries. We take an important step toward filling this gap, by collecting detailed data on sovereign borrowing from external private creditors during major crisis episodes back to 1790.[9] Specifically, we gather instrument-level data on sovereign bonds issued to private creditors in 15-year windows around 36 global financial crises and 35 Great Power War episodes (Section 4.2 introduces this sample of major wars and crises). We focus on external sovereign bond issuance, as this is the dominant type of cross-border private capital flows, especially through the 1920s (see Meyer et al. (2022) and Eichengreen (1992)).

To track international bond issuance in the 19th and early 20th century, we rely on investor manuals (primarily Moody's), stock exchange yearbooks (such as for the London Stock Exchange), and statistical compendia of international organizations such as the League of Nations and the UN. For the post-1970 period, we rely on the World Bank's International Debt Statistics and the BIS's International Debt Securities Statistics, supplemented by dozens of country- and episode-specific sources. Appendix C.2 lists the sources and provides details on the data construction process.

3 A panorama of official sovereign lending 1790 – 2024

This section offers a panoramic view of official sovereign lending across two centuries. Figure 1 in the introduction aggregates all of the individual official cross-border loans and grants worldwide on a yearly basis back to the French Revolution. We distinguish between bilateral and multilateral creditors, with the latter including regional supranational lending institutions. We scale the resulting yearly gross flows (commitments) by the GDP of the most important official creditor country – the UK until WW1 and the US after that. Official grants account for roughly 20 percent of total official sovereign flows and were particularly important after WW2 (see Appendix Figure E16 for details). The remainder of this section summarizes key stylized facts from our newly collected data.

3.1 Surges in official lending during wars and financial crises

Major wars have been and continue to be the main driver of government-to-government lending, as evident from Figure 1. In the period before WW1, we find large lending surges during the French Revolutionary Wars, the Napoleonic Wars and the First Crimean War. In each case, the European powers extended substantial financial support to their allies via loans, guarantees and grants, e.g. Great Britain's massive financial support to Austria, Prussia and Russia during the continental campaign against Napoleon. Similarly, during the Latin American Wars of Independence, the newly founded republics provided loans and grants to each other - in a joint effort to win against Spain.

The most striking surge in official lending, however, occurred during the two World Wars, which saw historically unprecedented levels of sovereign cross-border lending. In 1916 and 1942, annual official loans and grants exceeded 10% of US GDP - equivalent to over USD 3 trillion today, or more than 50

[9] The data on private bond issuance complements the aggregate 200-year capital flow dataset by Reinhart et al. (2016, 2017), which combines early gross bond issuance data with net flows since 1918.

times total US commitments to Ukraine in 2022–2023. Global wars have a transformative impact on international financial flows.

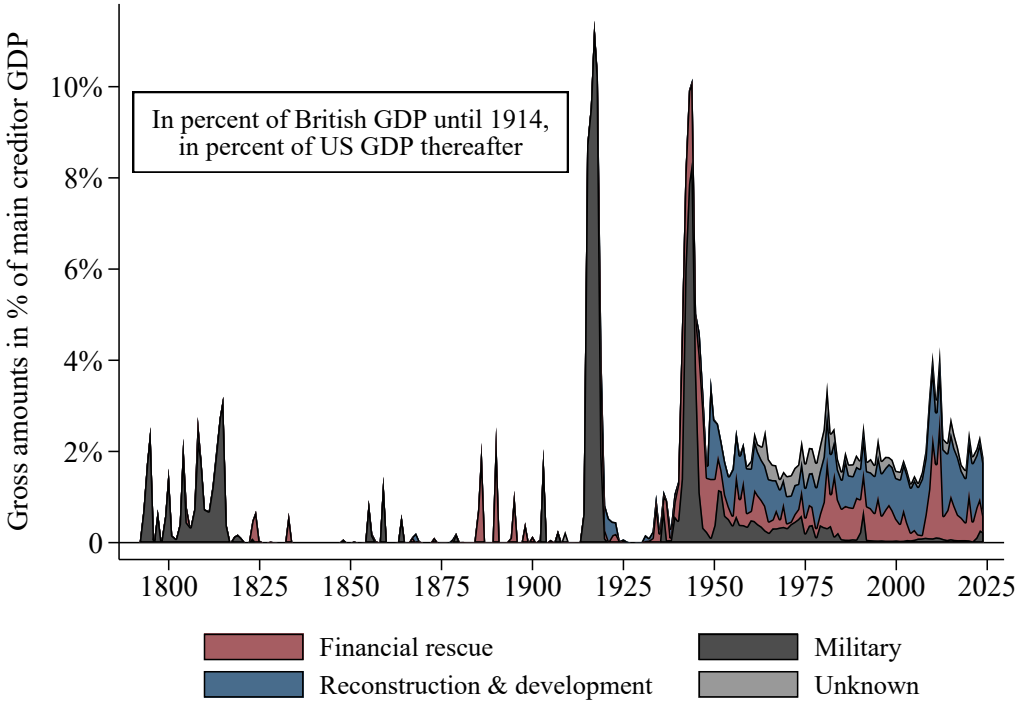
The aftermaths of the two World Wars look very different. After WW1, relief and reconstruction efforts in Europe were limited: official lending flows quickly declined, even as debt stocks remained elevated. After WW2, in contrast, official lending remained strong throughout the entire Bretton Woods era. US bilateral loans, in particular, played a crucial role in closing the postwar Dollar Gap and rebuilding Europe, most prominently through the Marshall Plan. From the breakdown of the inter-war gold exchange standard in 1931 to the late 1960s, this period can be considered the heyday of official finance. With widespread capital controls on private flows and domestic financial repression, official lending became the dominant channel for the international allocation of capital.

In peacetime, the largest spikes in official rescue lending operations occur during financial crises (Figure 1). In the 19th century and prior to WW2, financial crisis bailouts were less common than in the modern era, but notable cases include the Greek bailouts of 1832 and 1898 via debt guarantees extended by France, Great Britain and Russia (Reinhart and Trebesch, 2015) and the official guarantees extended to Austria in the Inter-War Period. Since WW2, financial crisis lending has become much more institutionalized; "serial" bailouts to highly indebted countries have become widespread. As a result, many of the recent spikes in bilateral and multilateral commitments can be linked to financial crises, including the bailouts of Great Britain and France in the 1950s and 1960s (both crises did not involve a sovereign default). Official rescue packages extended during the Oil Crises in 1973 and 1979, the emerging markets crises of the 1980s and 1990s, and more recently the 2008-2009 Global Financial Crisis, the subsequent Eurozone crisis in 2010-12 and the Covid Pandemic also stand out.

We observe a notable shift in the recipients of official finance. Today's advanced economies used to be the main recipients of official loans, both in wartime and peace and over a span of 150 years. Since the 1960s, the bulk of official lending has gone to developing countries (see Appendix Figure E14). The poorest of these countries often lack access to international private capital markets, so official lending and grants become the dominant, and in many cases the only, source of foreign finance.

Development aid and humanitarian relief to poorer countries were very limited throughout the 19th century. Most natural disasters at the time did not trigger international support. One early exception is the US humanitarian relief support of USD 50,000 to Venezuela after the devastating Caracas Earthquake of 1812. Other exceptions include transactions within empires, where grants and loans were occasionally used for humanitarian relief, and to finance infrastructure or military expenditure (as noted, loans and grants to colonies are excluded from our analysis, which focuses on sovereign-to-sovereign flows). The turning point comes after WW2, especially after 1970. Aid and development project support became very sizable, with annual global flows hovering around 1% of US GDP in recent decades. This category of development support includes China's recent overseas lending surge, dubbed as "Belt and Road Initiative" in 2013. China's state-directed loans have become an important source of financing for dozens of countries in the Global South (Horn et al., 2021).

Figure 3: Purposes of official sovereign lending 1790 – 2024



Note: This figure shows all gross official commitments through grants, loans and guarantees in percent of British GDP (until 1914) and in percent of US GDP thereafter. Cross-border lending by central banks is excluded from this figure. See text and Appendix A for details on the data and the coding approach.

Figure 3 classifies the motives of official lending more systematically. We distinguish between three categories — military assistance, economic development, and financial rescue lending. The category of military assistance covers loans and grants extended for the pursuit of war, defense, or procurement of military equipment. The category of reconstruction and economic development includes official loans and grants for projects abroad, ranging from health and education to state-building and infrastructure investment, including programs such as the US Marshall Plan or China's Belt and Road Initiative. This category also includes humanitarian relief in response to natural disasters (such as grants to purchase basic necessities). The third category, financial rescue loans, covers loans, grants and guarantees during currency, debt and banking crises as well as general budget or balance of payments support.

Whenever possible, we rely on the original sources to distinguish among these purposes, although the distinction is not always clear-cut and requires a number of judgment calls. One problem is that the officially declared purpose of a loan does not necessarily need to align with its de facto purpose (money is fungible). As an example, foreign currency loans for development projects are often provided during a financial crisis, in order to address a severe balance-of-payment problem. Development loans may mask military assistance. Moreover, we often lack official information on the lending purpose so that we need to infer the purpose from events at the time. Despite these caveats, Figure 3 is helpful as a first overview and helps to explain our focus on wars and financial crises. Indeed, the figure presents further empirical support that war finance and financial crisis lending are the two main motives of

state-directed financial flows to other countries. Development funding, including humanitarian relief, has become sizable in the past decades, but it remains of secondary importance when viewed against the longer-run historical record of the past two centuries.

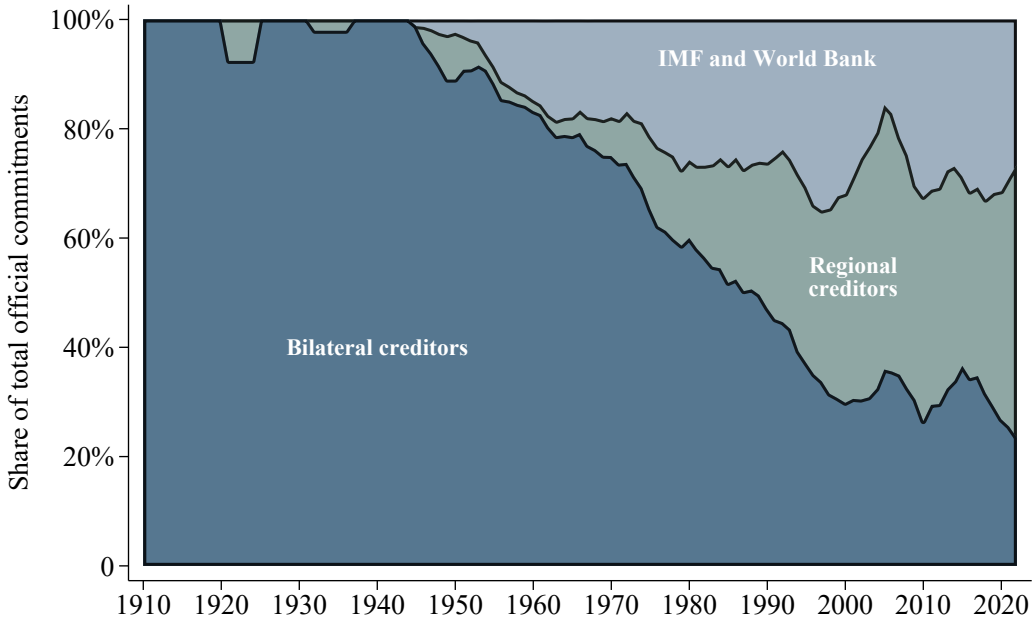
3.2 Great powers are the main official lenders

We now turn to the main official lenders: Who provides official loans and grants, and how has the composition of creditors evolved over time? Figure 4 breaks down total official international flows into three groups of creditors from the early 20th century: (i) bilateral creditors, (ii) the IMF and the World Bank, and (iii) other multilateral creditors, in particular regional development banks and regional financial arrangements. Bilateral flows clearly dominate throughout the 19th century (not shown) and until WW2. After that, lending gradually shifts from bilateral to multilateral creditors, beginning with the establishment of the IMF and the World Bank in 1944. By the 1980s, multilateral lending had overtaken bilateral lending and has remained dominant since. Notably, however, IMF and World Bank loans today account for only a third of total official lending, and less than half of multilateral flows. The third group, regional multilateral creditors, is large, growing, and much less well understood.

Another key insight is that bilateral flows are highly concentrated and driven by a few major creditors. Figure 5 shows that the biggest official creditors were the great powers of the time. Up until WW1, bilateral lending was dominated by the European powers, in particular Great Britain. The United States then took over as the world's primary official creditor during and after the World Wars and throughout the Cold War. In comparison, official lending by the Sino-Soviet bloc was small. Since then, and in particular after the end of the Cold War in 1991, the landscape of official international finance has become more heterogeneous. Oil exporting (OPEC) nations, Japan, and, increasingly, China emerged as new key creditors. As noted by Horn et al. (2025), the large debt write-offs of the 1990s and early 2000s, especially for the poorest countries, may have weakened the incentives of traditional creditors to extend new lending.

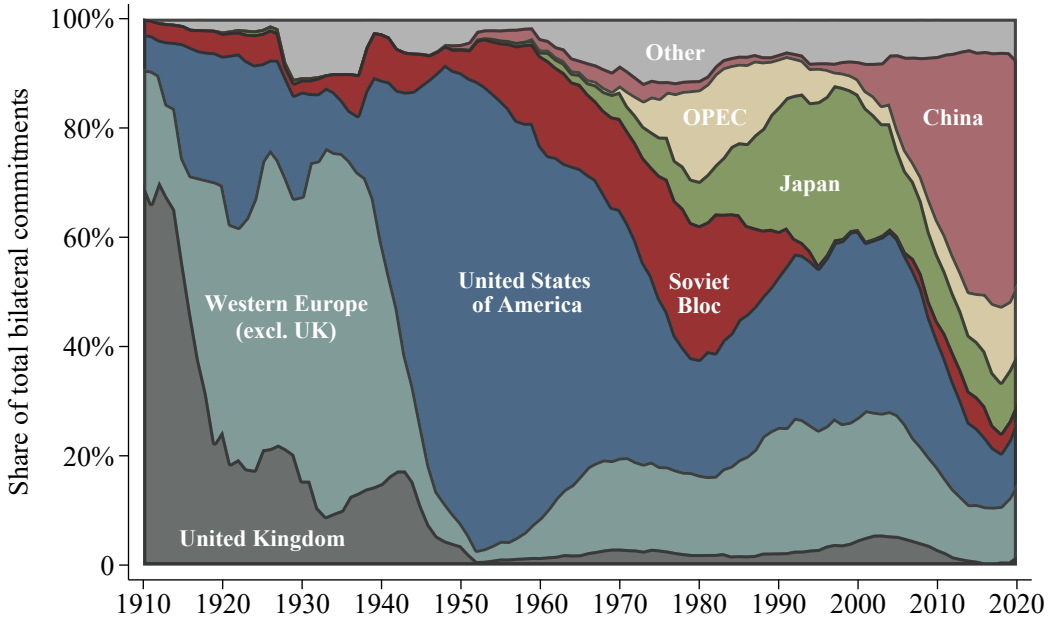
By the late 2010s, China's official lending portfolio had surpassed not just that of the US, but also those of the IMF and the World Bank. Since the Covid pandemic, which triggered a sharp increase in World Bank lending, China ranks second only to the World Bank, as we show in subsequent work building on the data originally collected for this project (Horn et al., 2021, 2025). Unknown to the broader public, China has also granted billions in rescue lending to developing countries (Horn et al., 2023). The rise of China and other new creditor powers, such as resource-rich Arab countries, is contributing to a general resurgence of official finance. In fact, these creditor countries from the Global South tend to rely heavily on state banks and official finance when lending at home or abroad.

Figure 4: Relative importance of multilateral and bilateral creditors over time



Note: "Regional creditors" includes regional development banks and regional financial arrangements as well as other multilateral institutions, such as guaranteed loans issued under the auspices of the League of Nations (see Appendix A.6 for a full list). The series are smoothed with a 5-year moving average.

Figure 5: The geography of official lending - main bilateral creditors 1910 - 2020

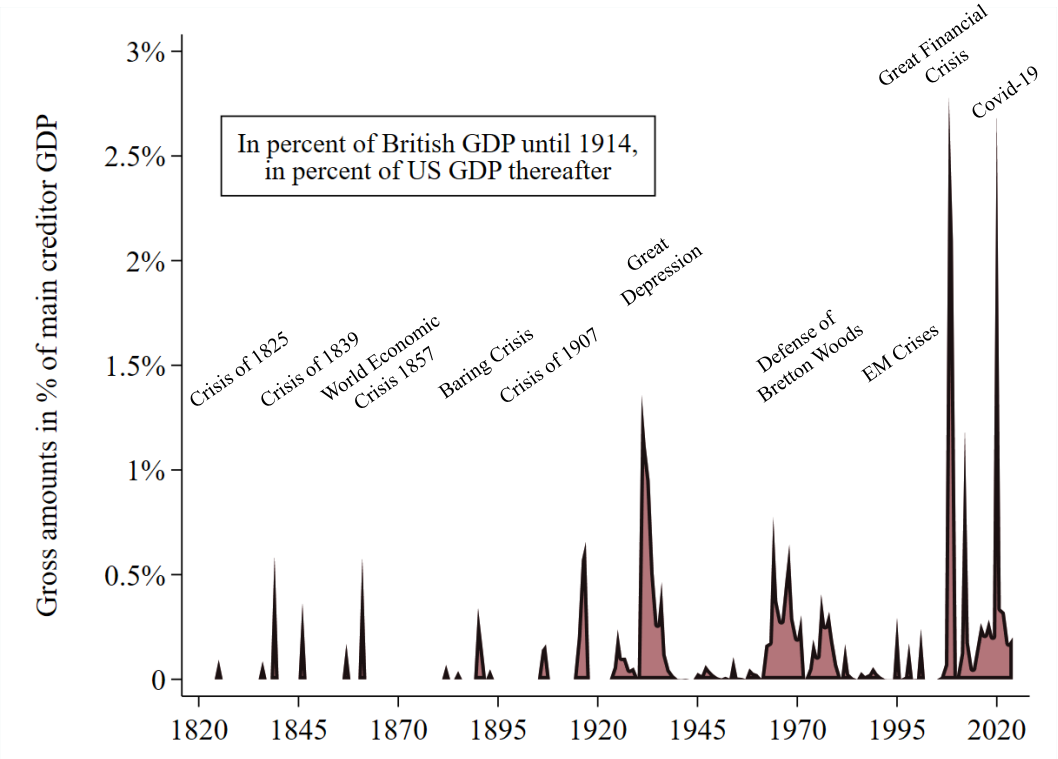


Note: This figure shows the share of major creditors in total bilateral lending commitments over time. Bilateral commitments include direct loans, grants and guarantees but exclude central bank lending. The series have been smoothed with a 10-year moving average.

3.3 Central bank support across borders is large and re-emerging

Another strand of official finance that has re-emerged is cross-border central bank lending, especially during the Global Financial Crisis and subsequently the Covid Pandemic. This is evident in Figure 6, which summarizes our granular data on global central bank-to-central bank lending over the past 200 years (on measurement and sources see Appendix A.3). To compute aggregate volumes, we sum all newly extended shorter-term credits (historically) and central bank loan swap line drawdowns (recent decades) at the global, annual level and scale to UK and US GDP as described previously. While the instruments used have changed significantly over time, the fundamental nature of these support measures has remained the same, which makes a long-term comparison informative. Appendix A.3 and Bordo et al. (2015) discuss the comparability across historical eras in more detail.

Figure 6: Central bank-to-central bank lending through loans and swap lines, 1815 - 2024



Note: This figure shows a time series of total cross-border central bank lending volumes since 1815. The data includes central bank credits to foreign central banks (historically) as well as bilateral swap line drawings (after WW2), scaled in percent of UK GDP until 1914 and in percent of US GDP thereafter. See Appendix A.3 for details on data construction.

The figure shows that cross-border central bank support has been quantitatively important both today and historically, with gross new loans and swap line drawings exceeding 1% of UK or US GDP at various times over the past 200 years. As with sovereign lending, most of this central bank credit is supplied by great powers: the major European powers prior to WW2 and the United States since then. Historically, central bank credits to other central banks peaked during episodes of financial turmoil, such as the so-called World Economic Crisis of 1857, the Baring Crisis of 1890 or the Panic

of 1907, as well as during the turbulent interwar years.[10] Starting in the 1960s, cross-border central bank support shifted increasingly to swap lines, which already played an important role in the defense of the Bretton Woods system of fixed exchange rates (Bordo et al., 2015). More recently, we saw two major spikes in swap line drawings of up to 500 billion USD (about 3% of US GDP), namely during the global financial crisis of 2007-2009 and the Covid Pandemic (Obstfeld et al., 2009; Bahaj and Reis, 2022). During these shocks, US swap lines played the leading role. In addition, the People's Bank of China (PBOC) has emerged as an important provider of international swap lines. As shown by Horn et al. (2023), the activation of these PBOC swap lines has increased in the past decade, particularly among countries facing financial stress or debt servicing difficulties.

4 Official versus private finance

In this section, we compare the incidence, scale, dynamics, and lending terms of official and private international finance across 200 years. We start with an aggregate comparison followed by a more detailed analysis of private and official capital flows around major wars and financial crises since 1790.

4.1 Aggregate comparison: Global flows and stocks

To compare the dynamics of private and official capital flows, we combine our series of official loan and grant commitments since 1790 with the long-run database of private cross-border capital flows from Reinhart et al. (2016, 2017), which starts in 1815.

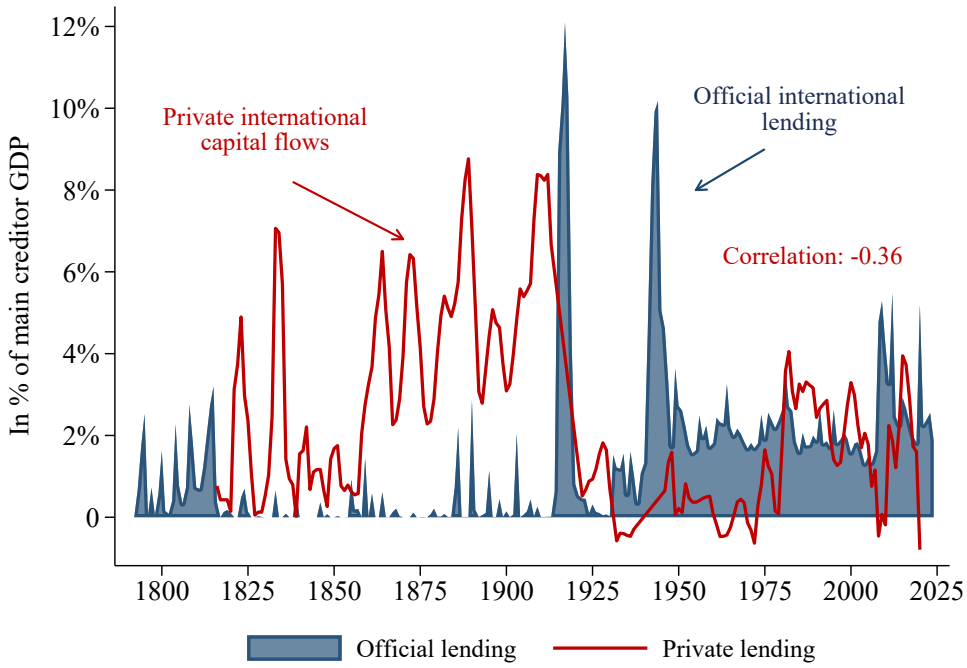
The comparison is complicated by differences in measurement: our aggregate official flows reflect gross lending, while the private capital flow series by Reinhart et al. (2016, 2017) combines gross flows before WW1 with net flows thereafter (see Appendix C.2 for details). For a more consistent comparison we therefore turn to case studies in the next section below.

Despite the limitations in comparability, Figure 7 conveys a clear message: official and private flows have been negatively correlated over the past two centuries. Private flows retrench in bad times, either because of increased risk aversion, the introduction or tightening of cross-border capital controls or a combination of the two. By contrast, official lending increases in periods of turmoil. In case of financial crises, there is support and/or a bailout. During wars, countries in a position to do so lend to their allies. This is most notable during WW1 and WW2.

Today's new borrowing is tomorrow's debt. The large aggregate official flows in Figure 7 add to the recipient countries' debt stocks. Figure 8 shows how the composition of public external debt between private, bilateral, and multilateral creditors has evolved since 1910. Panel A presents the unweighted average across all 140 countries in our debt stock database. Official (bilateral and multilateral) creditors account for a substantial share of external public debt over much of the sample. As of 2020, official debt represents roughly 60 percent of total external public debt in the average country.

[10] During the 1920s, for example, consortia of central banks agreed to extend reciprocal credits so as to help each other return to gold. In 1931, central bank lending reached a sizable peak. The large rescue credits to inter alia Austria, Hungary, Germany and Britain, however, did not suffice to save the inter-war gold standard from collapse (Eichengreen, 1992; Bordo and Schwartz, 1998). Beyond these rescue operations, the US Federal Reserve granted a series of short-term credits to Latin American countries facing balance-of-payments difficulties during the 1930s.

Figure 7: Official sovereign lending and private capital flows, 1790 - 2025



Note: The blue shaded era shows official international lending, including bilateral and multilateral commitments through grants, loans and guarantees, as well as central bank lending and swap line drawings. The red bold line shows the spliced series on private, cross-border capital flows from Reinhart et al. (2016, 2017) from 1815 to 2021. Both series are expressed in percent of UK GDP until 1914 and in percent of US GDP thereafter.

The figure also shows the persistence of legacy debt: the official debt share stays high long after the surge in borrowing during WW2 and the subsequent Bretton Woods era of capital controls.

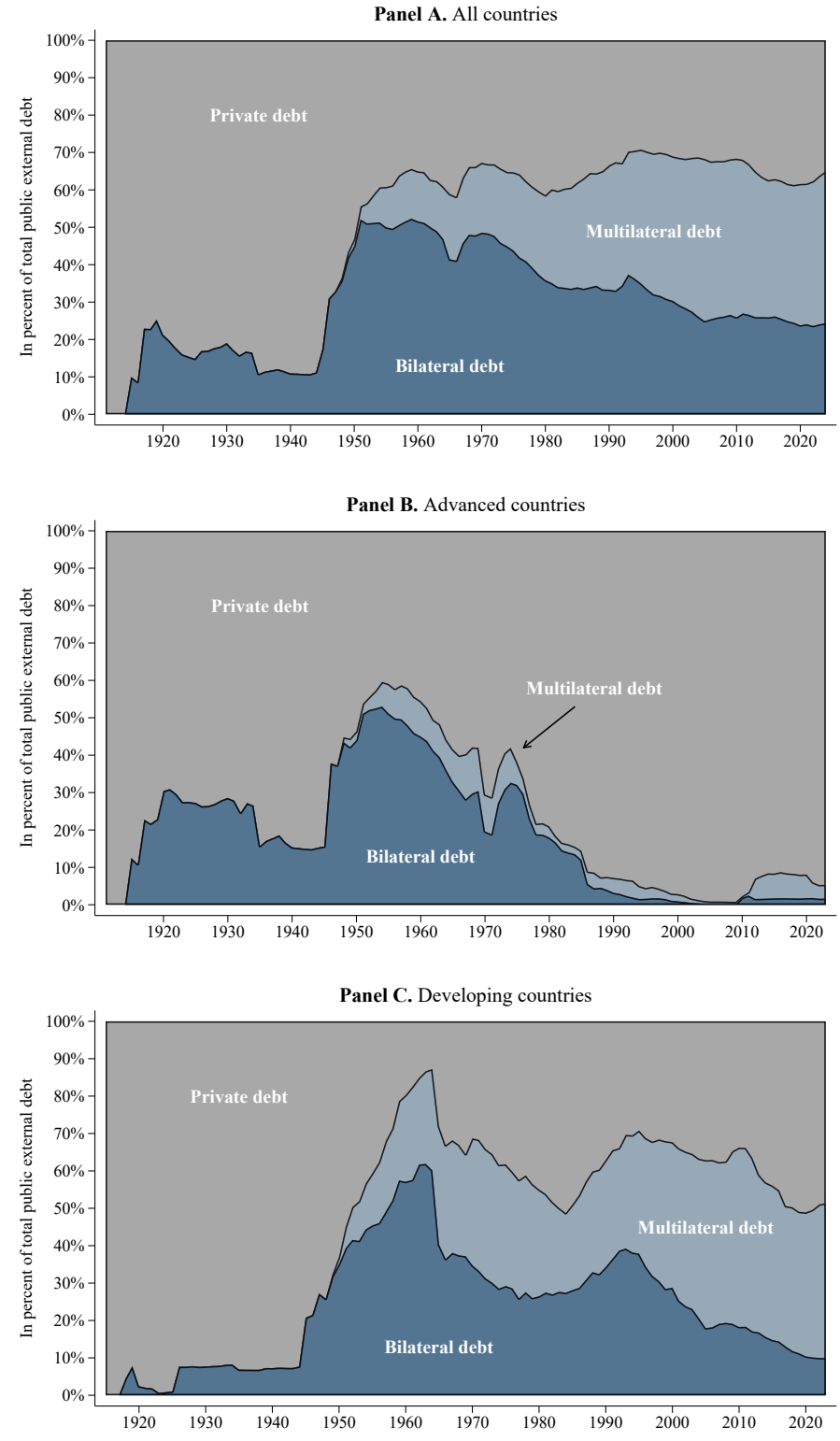
However, this aggregate masks pronounced variation across time and levels of development. To highlight these differences, Panels B and C of Figure 8 split the sample into advanced and developing economies, restricting attention to 30 countries with pre–WW2 data to ensure consistency over time.[11] Advanced country governments were the primary recipients of official loans (and grants) during the World Wars. It took decades to repay (and restructure) the large resulting inter-governmental war debts.[12] Official debt has played a more limited role in advanced economies' external balance sheets in recent decades, with notable exceptions such as the large official bailouts during the Eurozone crisis.

The pattern is markedly different for emerging and developing economies (Panel C). Large-scale reliance on official creditors begins in the post–WW2 period, coinciding with extensive capital controls during and after the war. Since then, official loans and grants have remained a central source of external funding for many developing countries, partly because private creditors became reluctant to extend large-scale sovereign lending after the debt crises of the 1980s. As of 2020, more than 80 developing countries owed more to official than to private external creditors. Poorer countries are especially reliant on official finance from abroad.

[11]We thus exclude countries that gained independence after WW2. Appendix B lists the 30 countries included in Panels B and C and reports GDP-weighted averages: 8% for advanced and 51% for developing economies.

[12]In 1934, 14 advanced economies defaulted on their WW1 debts to the US. As this default did not include debt to private creditors, it does not register in these countries' default histories (Reinhart and Trebesch, 2016).

Figure 8: Share of public external debt owed to private vs. official creditors, 1910-2020



Notes: This figure shows the decomposition of external public debt by creditor type using our new database. Dark blue, light blue, and grey shaded areas show the average share of debt owed to bilateral, multilateral, and private external creditors, respectively (unweighted country averages). Panel A uses an unbalanced sample of all 140 countries in our dataset. Panels B and C restrict attention to countries independent prior to WW2 to ensure balanced time series. Panel B focuses on 15 advanced countries, whereas Panel C focuses on 15 emerging and developing economies with long, consistent time series. See Appendix B for details on data construction and Appendix E.1 for additional results.

4.2 Wars and crises: when private flows retreat, official flows surge

To better assess the cyclical properties of official and private capital flows, we focus on wars and financial crises, among the most costly and catastrophic disaster episodes. For the systematic comparison of gross flows, we combine our newly collected data on official lending with new data on private international loans and bonds that we collect for major crisis episodes over 1790-2020.

Identifying the episodes: First, we examine capital flow dynamics during Great Power Wars, as defined by Levy (1983), in which at least two Great Powers fought on opposite sides. Historically, these wars have been the most destructive and deadly, and include the Napoleonic Wars, the Crimean War and both World Wars. We trace official and private capital flows to 35 participating countries over 15-year windows centered on the outbreak of combat. Appendix Table C6 provides the full list of episodes and detailed data sources for private lending.

Second, we focus on global or systemic debt crises—episodes characterized by synchronized defaults across multiple regions and involving at least one major financial center (Reinhart and Rogoff, 2009; Kaminsky and Vega-García, 2016; Morelli et al., 2022). These include the first wave of emerging market sovereign defaults in the 1820s, the 1931 global crisis, and the post-2008 Eurozone debt crisis (see Table C5 for the full list of episodes and sources).

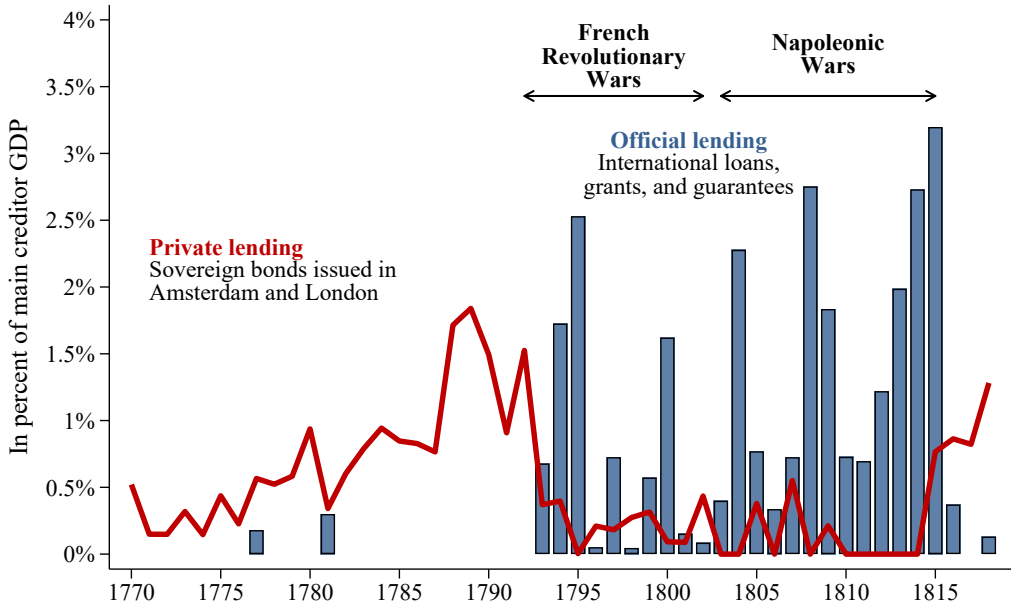
Our focus on major wars and debt crises differs from the influential literature on "macroeconomic disasters," which studies large declines in consumption or GDP (see Barro and Ursúa, 2008). The advantage of using event data is broader geographic and historical coverage, since long-run consumption and GDP data are limited to advanced and selected emerging economies. At the same time, we find substantial overlap with the disaster sample of Barro and Ursúa (2008) (see Table 1).

Capital flows in Great Power Wars: Chronologically, we start with the French Revolutionary War in the mid-1790s, which sets the stage for the subsequent Napoleonic Wars. Given the substantial number of countries involved and the fact that the naval war was fought in several oceans, the Napoleonic Wars can be considered "World War 0" (Figure 9). Prior to the French Revolutionary Wars of the mid-1790s, there were ample cross-border private capital flows, as shown by the red line, which captures the sum of external bonds issued in Amsterdam and London and scaled by UK GDP. With the outbreak of war, private international issuance collapses and remains subdued for more than 20 years. At the same time, official flows surge sharply, primarily in the form of British loans and subsidies to continental allies. Only after the battle of Waterloo and the Congress of Vienna do official flows drop as private international lending re-emerges.

This pattern is repeated during the two World Wars. Private capital flows collapse after the outbreak of WW1 in 1914 and only start to recover after the war ends in 1918. The international bond issuance boom of the roaring 1920s ends with the outbreak of the Great Depression in 1931. By 1938-1939, capital controls had become commonplace across the globe. Spurred by a surge in US loans, official flows spike during both World Wars with volumes—by far—surpassing those of the pre-war and inter-war private lending boom.

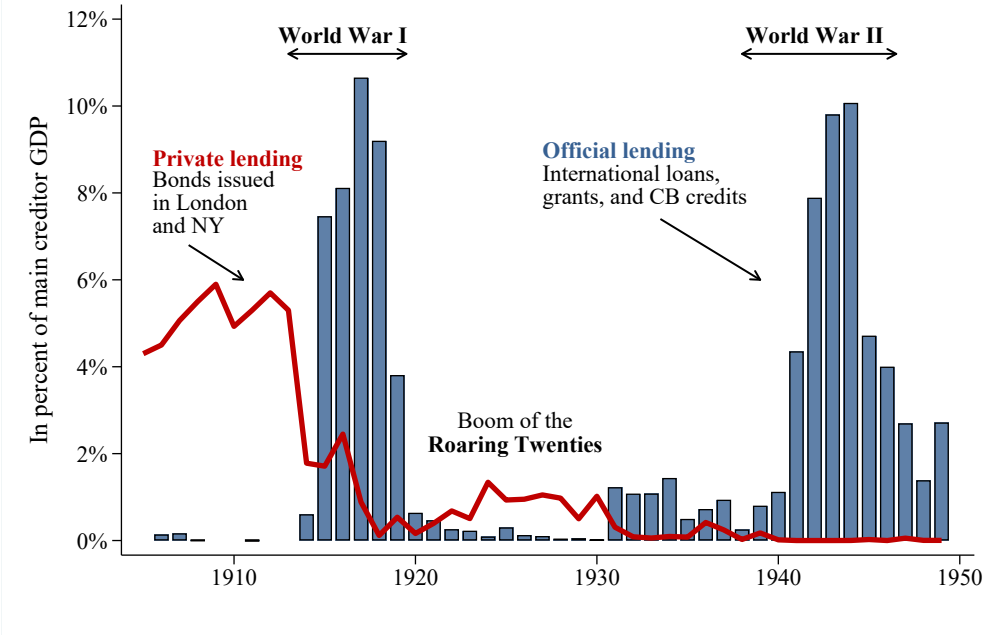
A contemporary example is Ukraine since 2022. As shown in Appendix Figure E21, private inflows collapsed after Russia's full-scale invasion of February 2022, while official inflows spiked.

Figure 9: "World War 0" - private vs official flows



Note: The blue bars show official international lending through grants and loans. The red bold line shows external sovereign bonds issued in the Amsterdam and London capital market. Both series are expressed in percent of British GDP. See Appendix A and C.2 for details.

Figure 10: WW1 and WW2 - private vs official flows

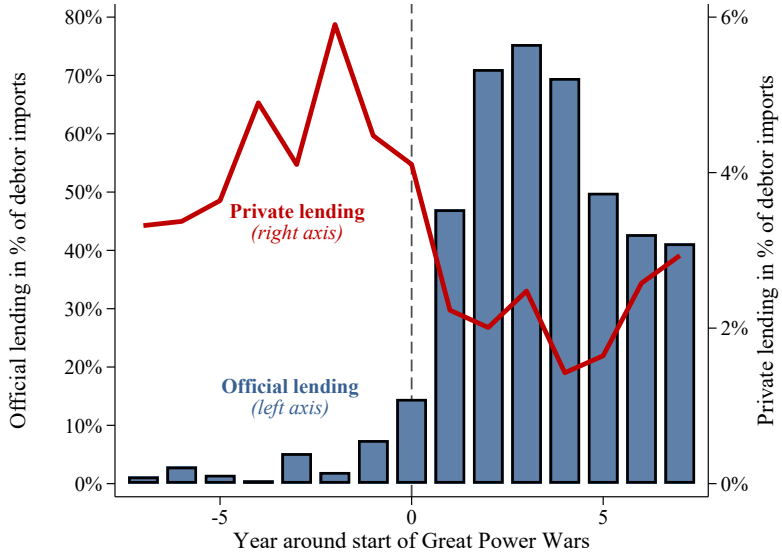


Note: The blue bars show official international lending through grants and loans. The red bold line shows external sovereign bonds issued in the London and US capital market. Both series are expressed in percent of British GDP until 1914 and in percent of US GDP thereafter. The sample consists of twenty countries that actively fought in the World Wars. See Appendix A and C.2 for details.

Figure 11 confirms these patterns across all 35 Great Power War episodes in our database. We scale lending flows by recipient-country imports, since GDP data are unavailable for several events. On average, private inflows decline before the onset of war, while official credit inflows surge drastically once the conflict begins. The scale difference is striking: official flows exceed private flows by a factor of 10 or more on average (compare left versus right vertical axes).

In sum, during Great Power Wars, we find that international official lending and grants clearly dominated external war finance. These patterns, however, do not extend to all inter-state conflicts. In smaller and more regionally contained wars, such as the Sino-Japanese War of 1894-95 and the Italo-Turkish War of 1911-12, foreign private investors often played the dominant role in financing the war effort (Kindleberger, 1984; Zielinski, 2016; Queralt, 2022).[13]

Figure 11: International lending flows in Great Power Wars, 1790-2020



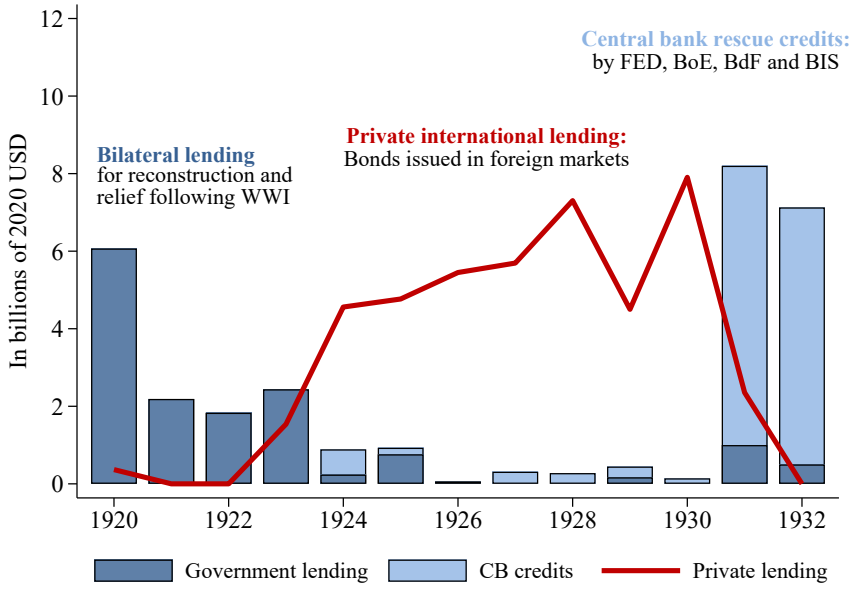
Note: This figure shows average cross-border official and private lending flows across 15-year windows around the start of Great Power Wars during the past 200 years. See Appendix C.1 for detailed definitions, sources, and a full list of episodes. We use average imports over the entire 15-year episode so that the time variation is not driven by fluctuations in the denominator. We use imports because historical trade data is more reliable and more widely available than GDP data.

Capital flows in global debt crises: We now turn to systemic debt crises, beginning with the Great Depression, which began with the banking crises of 1931 and was followed by a wave of sovereign defaults.

Figure 12 contrasts private and official cross-border lending during the interwar years. Given the sharp output collapse during the Depression, flows are shown in inflation-adjusted billions of 2020 USD. As can be seen, private international lending surged during the second half of the 1920s, but collapsed abruptly after 1930. In the immediate aftermath of WW1, bilateral reconstruction and relief lending was sizable. By contrast, the crisis years of 1931-32 saw almost no government-to-government rescue lending despite severe financial distress across Europe. The sole official lenders in these years were

[13]A systematic analysis of capital flows across *all* inter-state wars is beyond the scope of this paper, given the lack of comprehensive micro data on private cross-border flows over the 200-year sample.

Figure 12: The Great Depression (Europe) - private vs. official flows in billion USD



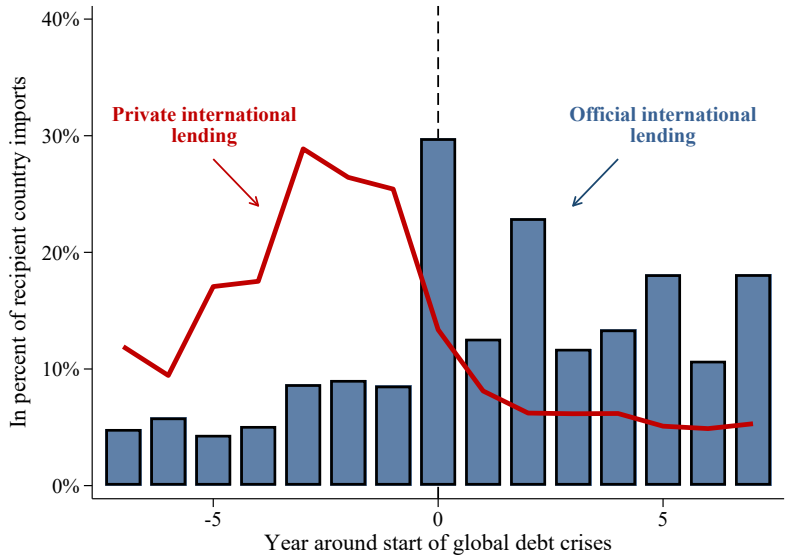
Note: Given the sharp GDP collapse after 1929, the flows in this figure are shown in inflation-adjusted billions of 2020 USD. The blue bars show official lending by governments through grants, loans and guarantees (dark blue) and central bank credits (light blue). The red bold line shows external sovereign bonds issued by continental European sovereigns. See Appendix A.5 and C.2 for details.

central banks, including the Federal Reserve, the Bank of England, and the Banque de France, which each extended emergency credits to foreign central banks. The dearth of sovereign rescue lending may have reflected the negative experience with WW1 debt repayment, as well as the synchronicity and scale of the Depression shock.

In historical perspective, the Great Depression stands out as a global disaster with remarkably little cross-border fiscal support or sovereign bailout activity. This contrasts sharply with later crises, such as the Asian Financial Crisis after 1997 (Appendix Figure E22) and the Eurozone crisis after 2010 (Figure E23), both of which featured massive official rescue lending.

Figure 13 again takes a more systematic approach and summarizes lending flows around all 36 major global debt crisis episodes. As for the case of wars, we scale both private and official flows by recipient country imports. The result is clear: private flows see a notable boom pre-crisis and then decline substantially in the first crisis year. The opposite is true for official flows, which surge only after the crisis breaks out.

Figure 13: International lending flows during global debt crises, 1790-2020



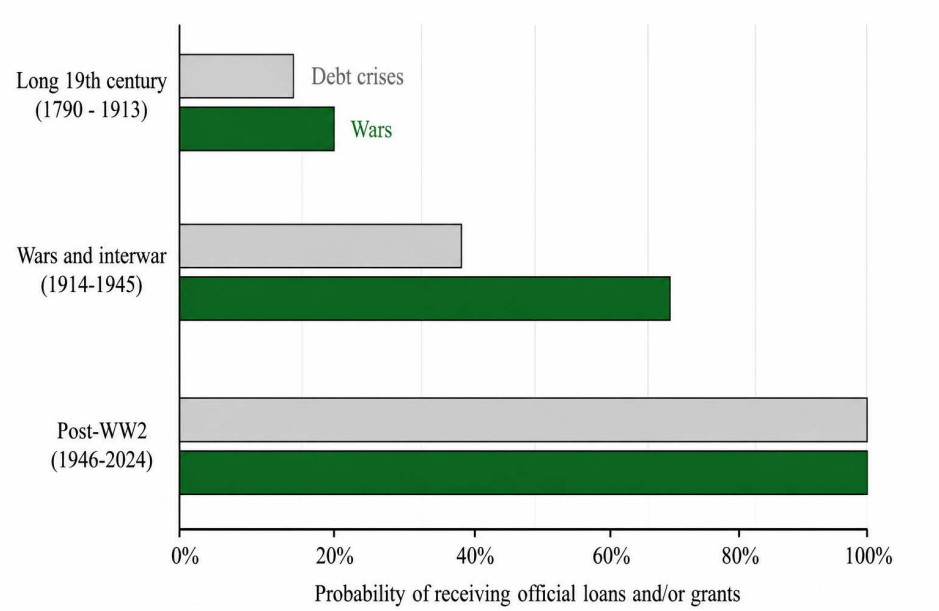
Note: This figure shows average cross-border official and private lending flows across 15-year windows around the start of global debt crises during the past 200 years. See Appendix C.1 for detailed definitions, sources, and a full list of crisis episodes. We use average import values over the entire 15-year episode so that the time variation is not driven by fluctuations in the denominator. We use imports because historical trade data is more reliable and more widely available than GDP data.

Lending incidence in debt crises and war (full sample): We next extend the analysis beyond Great Power Wars and global debt crises to cover *all* inter-state wars and sovereign debt crises over the past 200 years. Due to limited data on gross private lending flows over this full period, this exercise focuses on official flows alone. The full-sample evidence confirms the importance of financial crises and wars as drivers of official lending and shows that official support has become increasingly frequent and systematic over time.

Figure 14 shows the likelihood of receiving foreign financial assistance in sovereign debt crises and inter-state wars by era. Strikingly, the likelihood of receiving at least one financial official loan or grant in these events has increased five-fold over the past 200 years: from around 20% in the 19th century, to roughly 50% in the interwar era, to 100% in the post-WW2 period. Appendix E7 shows that also the scale of lending has grown, particularly for sovereign debt crises. The average bailout size nearly doubled - from 65% of imports in the 19th century to more than 100% in recent decades. For wars, the time trend is less pronounced, as the exceptional support during the World Wars remains unmatched (thankfully, the scales of those wars also remain unmatched). In summary, international official finance has become routine in international crisis response.

Summary on wars and sovereign debt crises: Our analysis reveals a clear empirical pattern: private and official capital flows move in opposite directions during adverse states of the world. Private flows typically fall sharply, while official flows surge, a stylized fact observable across both Great Power Wars and systemic debt crises. At closer inspection, however, there are profound differences between these two events. During wars, belligerent countries often impose strict capital controls and close the capital account to limit capital flight and preserve currency reserves, often prior to hostilities. In

Figure 14: Not just major crises: official rescue loans have become the norm



Note: This figure shows the probability of receiving foreign official loans in the full sample of interstate wars (gray bars) and sovereign debt crises (green bars) across different eras of the past two centuries. We consider flows during the first three years after the onset of the crisis or war. See Appendix C.1 for detailed definitions and sources on wars and debt crises.

those cases, the halt in private capital flows is therefore a predetermined policy outcome. In contrast, during financial crises, capital accounts typically remain open (at least at the outset of the crisis), so that official inflows partly replace the "sudden stop" in private capital flows.

4.3 Lending terms: official debt is highly concessional

This section compares private and official lending terms, in particular interest rates. Figure 15 shows the evolution of interest rates on private versus official debt issuance across 120 years. Each red dot represents the interest rate of an individual sovereign bond or private bank loan at issuance, with data over 200 years coming from Meyer et al. (2022) as well as syndicated loan interest rates from the World Bank (see Appendix C.2 for details). The blue dots show interest rates on each newly granted bilateral or multilateral loan, taken from our international official lending database (grants and central bank credits are not included). The thick red and blue lines show 10-year moving averages of the private and official rates, respectively.

Panel A of Figure 15 shows large differences in the level and dynamics of interest rates between the two markets. Foreign bondholders and banks charge a substantial premium when lending to sovereigns, in line with Meyer et al. (2022). In contrast, official lending is priced at substantially lower rates, with potentially large subsidy elements for recipient countries. The gap in lending terms is particularly pronounced from the 1960s onward, when development assistance lending grew markedly. However, even prior to WW2 and the creation of the Bretton Woods institutions, official lending came at significantly lower interest rates than market finance. In the 1930s, for example, China borrowed from the US and the Soviet governments at fixed rates of 3–4 percent, while paying bond yields of

6–7 percent in private markets. Similarly, during the Napoleonic Wars and the early 19th century, Prussia received zero-interest, non-repayable grants ("subsidies") from the British government, yet issued bonds in the London capital market at interest rates of roughly 6 percent.

Panel B expands the comparison by accounting for credit risk. To measure credit risk in history and the present, we compile the most comprehensive database of sovereign credit risk ratings available thus far, drawing on modern as well as historical sources by Moody's, S&P, and Fitch. The resulting long-run sovereign ratings dataset covers more than 100 years and up to 100 governments around the world (see Appendix D.3 for details). Moreover, we now focus on interest rate spreads, which we construct by subtracting safe benchmark rates (US government bond yields, building on Meyer et al., 2022). Panel B shows that private external lending transactions have positive average yield spreads that increase with the borrower's default risk. High-risk sovereigns pay a premium of 2 percentage points or more compared to better-rated issuers. In sharp contrast, official lending rates are not only significantly cheaper - often carrying negative spreads relative to the US benchmark rate - but the spread is largely unresponsive to borrower risk. If anything, lower rated sovereigns borrow more cheaply from official creditors than higher rated sovereigns.

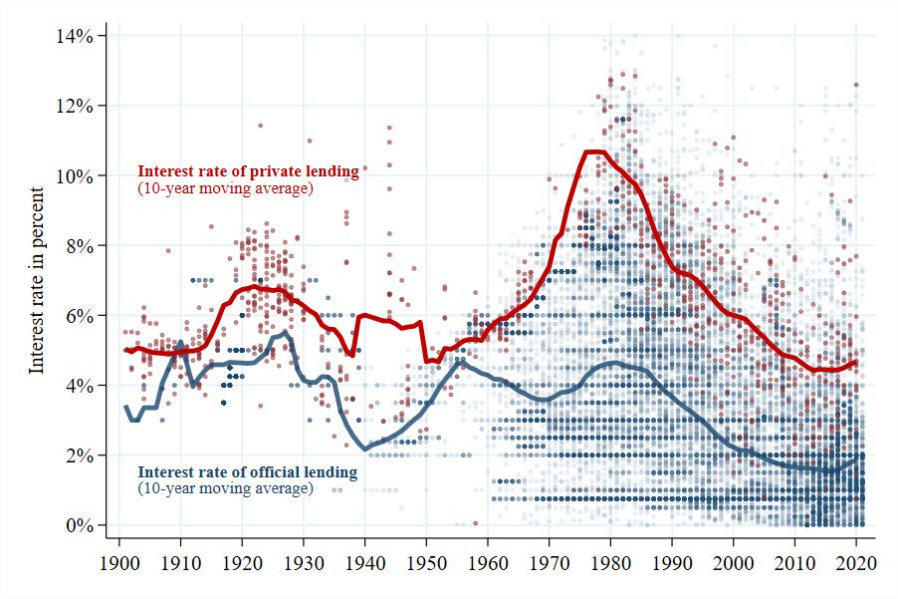
Taken together, these results document a striking divergence in lending terms. Official creditors provide substantial subsidies to sovereign borrowers, with interest rates that are largely insensitive to default risk and often below those charged by private markets. Appendix E confirms that this pattern is robust to alternative risk proxies, including per capita income. The same divergence holds for maturities (Appendix Figure E18): high-risk borrowers face shorter maturities from private creditors but longer maturities from official ones.

Two qualifications strengthen this conclusion. First, defaults and debt relief on official loans are common (Appendix Section A.1), so the interest rates at issuance reported here should be seen as an upper bound of the realized ex-post returns on official lending. Second, the conditional averages mask substantial heterogeneity across creditors and periods: as Horn et al. (2021, 2025) document, a large share of recent Chinese official lending is priced closer to market terms than to traditional concessional finance. The true concessional element of official finance is likely larger than the average issuance terms suggest.

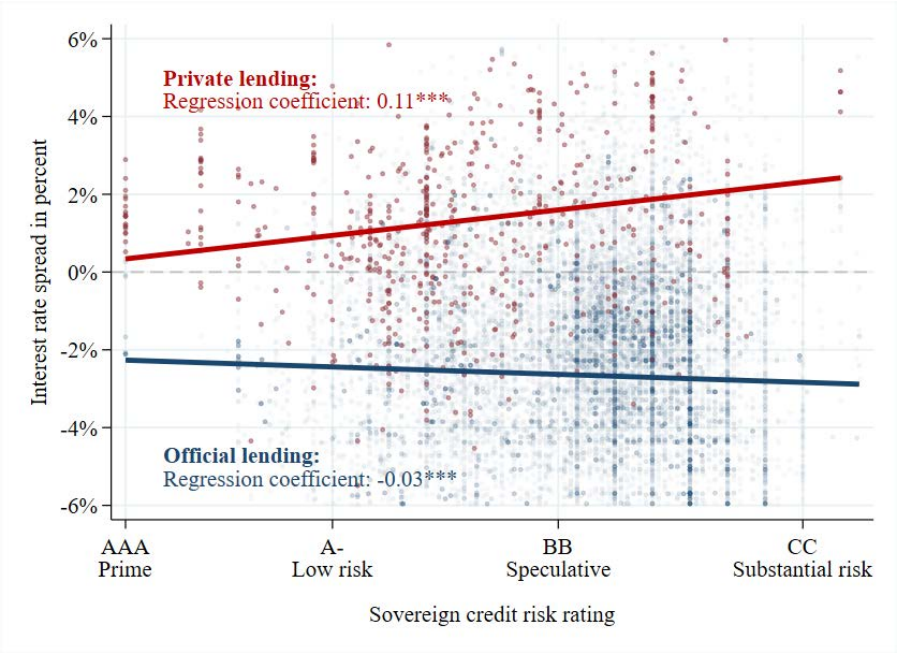
Importantly, the concessional terms we observe do not, by themselves, identify the motives of official creditors. Preferential terms may reflect developmental or humanitarian objectives, such as supporting poorer and riskier borrowers. But they may equally reflect strategic and security considerations, including the protection of trade interests or the projection of geopolitical influence. The two motives often coexist and are difficult to disentangle empirically, but the gravity results in Section 5 suggest that strategic motives play a significant role.

Figure 15: Official versus private lending terms

Panel A. Long-run average interest rates



Panel B. Interest rate spreads and debtor risk



Note: This figure shows instrument-level interest rates on private international lending (red dots) and official international lending (blue dots). Interest rates for private bonds are measured as issuance yields. In Panel A, the blue and red lines show 10-year moving averages of private and official interest rates. In Panel B, the blue and red lines show fitted values from bivariate regressions of interest rate spreads on sovereign credit ratings using data from 1920 to 2020. Official grants and central bank credits are excluded.

4.4 Summary: How private and official international finance compare

Table 1 summarizes key characteristics of private and official external debt markets, highlighting three main stylized facts. First, official external debt is larger than commonly recognized, comprising between one-third and two-thirds of total public external debt stocks over the past 100 years globally, depending on the weighting method used. As the share of debt owed to official external creditors in the modern era is larger for the numerous lower income countries, the unweighted average may be more indicative of the relative importance of official financing globally.

Table 1: Key properties of official and private external lending

	Private creditors	**Official** creditors
Share of external public debt owed to (in %)		
Unweighted mean (all countries and years)	39.7%	60.3%
GDP-weighted mean (all countries and years)	70.9%	29.1%
Global shocks & crises (correlation coefficient)		
Financial crisis tally (Reinhart & Rogoff)	-0.14**	0.35***
Macroeconomic disasters (Barro & Ursua)	-0.09	0.46***
Geopolitical risk (Caldara & Iacoviello)	-0.34***	0.81***
Incidence of war (Correlates of War)	-0.23***	0.33***
Lending terms		
Interest rate spread over risk-free rate	177 bps.	-305 bps.
Correlation of spread and credit risk	0.11***	-0.13***

Note: This table summarizes key properties of official and private external lending. The first panel reports creditor shares in total public external debt (unweighted and GDP-weighted) for 140 countries over 1910–2020, using our new debt stock series. The second panel reports correlations between aggregate annual lending flows and global shock measures: financial crises from Reinhart and Rogoff (2009) and updates, macroeconomic disasters from Barro and Ursúa (2008), geopolitical risk from Caldara and Iacoviello (2023), and inter-state wars from the Correlates of War project. Private capital flows are from Reinhart et al. (2016, 2017); official flows from our database. The third panel reports average interest rate spreads over the US risk-free rate (in basis points) for years 1800–2024, and their correlation with sovereign for years 1920–2024. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level.

Second, private capital flows tend to be pro-cyclical, contracting during crises, geopolitical turmoil, and war (see also Kaminsky et al., 2004). In contrast, official lending is counter-cyclical, increasing sharply during disasters and severe economic downturns. This stylized fact is supported by the case studies above and summarized for the aggregates in Table 1. We show that aggregate private flows are negatively correlated with: (i) the number of global financial crises (using the classification of bank, debt, currency, and inflation crises from Reinhart and Rogoff, 2009); (ii) the incidence of macroeconomic disasters (based on event data from Barro and Ursúa, 2008); (iii) global geopolitical risk (as measured by Caldara and Iacoviello, 2023); and (iv) the number of external wars worldwide (using Correlates of War data). In all cases, the correlation is negative for private capital flows at the global level, but positive and statistically significant for official flows.

Third, official financing contains substantial subsidy elements, as reflected in negative risk spreads. In fact, interest rates on official debt decrease - rather than increase - with the riskiness of the borrower.

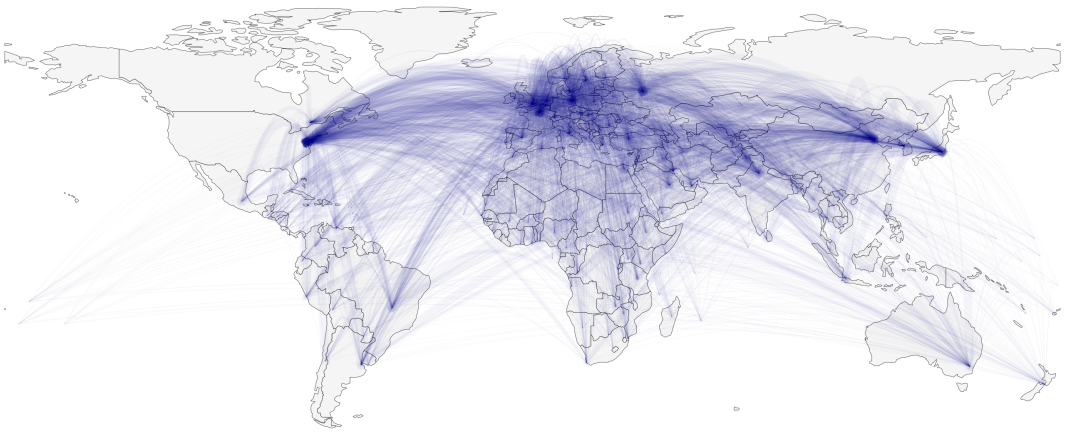
This stands in contrast to the well-documented result for external private creditors, who charge higher risk premia for high-risk countries.

5 The gravity of official finance

A large literature examines the determinants of private cross-border lending and capital flows, typically focusing on portfolio choice, risk premia, and global push factors. By contrast, the motives for government-to-government lending are less well understood. In Section 3, we discuss that the motives vary across episodes and instruments, but economic self-interest, broadly construed, emerges as a common underlying force.

In the context of financial crises, a key rationale for official lending and bailouts is the mitigation of cross-border spillovers, as emphasized in Bulow and Rogoff (1988), Tirole (2015), Azzimonti and Quadrini (2023), and Gourinchas et al. (2019). When countries are closely linked through trade and finance, crises can induce foreign governments to extend loans or grants to stabilize the affected economy, thereby protecting domestic firms, investors, and banks. In this view, both the likelihood and magnitude of official lending should increase with bilateral exposure.

Figure 16: Bilateral official flows, 1790 - 2020



Note: The width of the blue lines increases with the amount of bilateral lending through loans and grants extended between 1790 and 2020. Data is from our international official lending database. See Section E.2.1 for details on the dataset and gravity regression sample.

One channel is the replacement of private with official debt, as foreign currency inflows from official loans and grants facilitate repayment to external private creditors. Accordingly, pre-crisis trade and financial linkages should help predict which governments extend bailouts to whom.

Similar considerations apply in wartime. Countries that are militarily aligned may support each other financially, as the defeat of an ally can generate significant security and economic spillovers. War loans and military aid may also compensate allies who bear the heavy costs of fighting on their own soil and/or on behalf of the supporting country (Federle et al., 2024). However, the replacement of private debt with official flows is less common during global wars, when capital accounts are often closed.

We bring these priors to the data by examining bilateral official lending within a 200-year gravity framework. We exploit the dyadic structure of the data, covering roughly 3,200 creditor-recipient pairs, and estimate gravity models using PPML, which accommodates zero flows (Santos Silva and Tenreyro, 2006).[14] Appendix E.2 reports results using alternative estimators, including specifications with a binary dependent variable and OLS.

We estimate the following specification:

$$Lending_{i,j,t} = \exp\left[\beta_1 \ln Exposure_{i,j,t-1} + \beta_2 Alliance_{i,j,t-1} + \theta' Controls_{i,j,t-1} + \upsilon_i + \mu_j\right]\varepsilon_{i,j,t}$$

where i denotes the debtor country, j the creditor country, and t the year. The dependent variable, $Lending_{i,j,t}$, is the real value (in constant USD) of bilateral official commitments from country j to country i in year t.

Our key explanatory variables capture economic exposure and political alignment. As a baseline, we proxy $Exposure_{i,j,t}$ using bilateral trade shares, defined as the share of total trade (exports plus imports) of the creditor country conducted with the debtor country. This measure captures the relative importance of the recipient economy. We focus on trade shares because bilateral trade data are available for nearly the full 200-year sample and for a wide cross-section of countries using the comprehensive TRADHIST database (Fouquin and Hugot, 2016). To capture financial exposure, we construct a bilateral measure of private creditor claims from World Bank International Debt Statistics since 1970. Analogous to trade shares, we calculate the share of a creditor country's total foreign claims accounted for by a given debtor. This captures the relative exposure of the creditor's private financial sector to a particular debtor. We also use BIS bilateral banking data in robustness checks. Although financial exposure data is limited to the post-1970 period, the results are consistent with the trade-based baseline (Appendix Section D.2).

Military alignment is captured by a dummy variable indicating a formal military agreement between two countries or joint fighting in wartime. Specifically, countries are classified as military allies if (i) they have signed a formal defense pact or entente agreement as measured by Singer and Small (1966), Gibler and Sarkees (2004) and Gibler (2009)[15] or if (ii) they fight on the same side of an inter-state war as measured by Sarkees and Wayman (2010).

We include standard gravity controls, such as geographic distance, shared language, colonial ties, and religion, as well as debtor and creditor GDP. We also include indicators for sovereign debt crises and inter-state wars, which are central to our analysis. All regressors enter with a lag.

Our baseline specification includes debtor and creditor fixed effects. More demanding specifications with country-pair, debtor-year, and creditor-year fixed effects yield similar results (Appendix E.2). We do not include these in the baseline because they absorb much of the variation in country pair characteristics and crisis and wartime episodes, which are the focus here.

[14] Our baseline sample includes 165 debtor countries, the 20 largest bilateral creditor countries, and close to 200 years of data. Focusing on major creditors reduces the prevalence of zero observations. Appendix E.2.1 reports detailed information on sample composition and shows that the results are robust to alternative sample definitions.

[15] In a defense pact, states commit to intervene militarily on the side of any treaty partner that is being attacked. In an entente agreement, countries pledge consultation and / or cooperation in a national emergency such as an armed attack (Gibler and Sarkees, 2004).

We begin with descriptive evidence, summarized in Appendix E.2.2. The scatter plots and bar charts provide initial support for the theoretical priors.

Our empirical approach is subject to the usual limitations of observational gravity models. In particular, exposure measures may reflect underlying relationships that also shape lending decisions. The estimates should therefore be interpreted as conditional correlations.

Table 2: The gravity of official finance, 1830 - 2012

	Dep. variable: Bilateral official lending				
	(1) Baseline	(2) Pre-1945	(3) Post-1945	(4) War	(5) Debt crisis
Trade exposure	0.39***	0.39*	0.36***	0.38***	0.38***
	(0.09)	(0.21)	(0.06)	(0.09)	(0.09)
Distance	-0.01	0.08	-0.06	-0.01	0.01
	(0.15)	(0.41)	(0.13)	(0.15)	(0.15)
Alliance	0.74***	1.11***	0.33	0.69***	0.72***
	(0.16)	(0.40)	(0.21)	(0.17)	(0.16)
Common language	0.72***	0.98**	0.71***	0.73***	0.72***
	(0.17)	(0.41)	(0.19)	(0.17)	(0.17)
War	0.78***	0.79**	0.10	1.79***	0.76***
	(0.24)	(0.37)	(0.24)	(0.62)	(0.23)
Sovereign Debt Crisis	0.38***	-0.58	0.29**	0.35***	1.00***
	(0.11)	(0.36)	(0.13)	(0.11)	(0.34)
Trade exposure * War				0.28**	
				(0.11)	
Alliance * War				1.01***	
				(0.36)	
Trade exposure * Debt Crisis					0.14**
					(0.06)
Alliance * Debt Crisis					0.26
					(0.26)
Observations	166846	20065	143390	166846	166846
Sample	1820 - 2012	1820 - 1945	1946 - 2012	1820 - 2012	1820 - 2012
Controls	✓	✓	✓	✓	✓
Debtor FE	✓	✓	✓	✓	✓
Creditor FE	✓	✓	✓	✓	✓

Notes: PPML regression results using gross bilateral lending commitments as dependent variable (in real USD). All explanatory variables are lagged. The models include creditor and debtor fixed effects and additional time-varying controls. The regression sample ends in 2012 because the alliance measure is only available until this year. Robust standard errors, clustered at the creditor-debtor dyad, are shown in parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level. See Appendix Section E.2 for additional details and robustness tests.

Table 2 reports the main results, for the full 200-year sample (column 1) and by historical era (columns 2 and 3). In line with our main hypothesis, bilateral economic exposure is strongly associated with bilateral lending. The estimated elasticity in column 1 implies that a one percent increase in trade exposure is associated with roughly a 0.4 percent increase in official financial flows. This relationship is stable throughout the sample, with positive and statistically significant coefficients both before and after WW2.

Military alliances are also positively and significantly correlated with official flows. Over the full sample, allied country pairs receive more than twice the volume of bilateral loans and grants relative

to non-allied pairs ($\exp(0.74) - 1 \approx 1.1$). This association is driven primarily by the pre–WW2 period, and the coefficient becomes smaller and statistically insignificant after 1945. This suggests that military alignment played a larger role in shaping official finance in earlier periods, particularly in episodes of large-scale conflicts.

Turning to the crisis and war indicators, the estimated coefficients imply roughly a doubling of lending during inter-state wars and an increase of about 45 percent during sovereign debt crises (based on the coefficients of 0.78 and 0.38, respectively, in the PPML specification). These patterns vary across periods. Wars are associated with significantly higher official flows in the 19^{th} and early 20^{th} centuries, but less so in the post-WW2 era, which does not include a global war. In contrast, the response to financial crises strengthens over time. The coefficient on sovereign debt crises is insignificant in the historical sample but becomes large and statistically significant post-WW2.

We also study the interaction of war and debt crises with our main dyadic variables of interest, economic exposure and alliances (columns 4 and 5). During wars, official lending is strongly skewed toward military allies. The estimated interaction coefficient implies that official flows to allies at war are about 175 percent higher relative to non-allies, in addition to the usual alliance and war premia. The interaction with bilateral trade exposure is also statistically significant, but much smaller. In debt crises, the relative importance flips: economic linkages become the more important predictor of bilateral official flows. The elasticity of official lending with respect to trade exposure rises from about 0.38 in the baseline to roughly 0.5 in crisis years. In contrast, the interaction coefficient for military alliances is not statistically significant.

Overall, the results suggest that governments lend to other governments when their own interests are at stake, particularly in wars and financial crises when potential spillovers are large.

6 Conclusion

Over the past 235 years official lending has been a central pillar of global finance, especially during crises and wars. Our findings suggest that international lending follows a dual, state-contingent pattern. In tranquil times, private sector allocation dominates. In adverse states of the world, governments step up their cross-border lending, while private credit flows retreat. In some countries and periods, official loans and grants are the sole source of international funding.

This perspective challenges standard frameworks in international macroeconomics and finance, which seldom consider the role of official creditors when studying international risk sharing, sovereign borrowing, or financial crises. Official international finance remains grossly understudied.

Our paper is a first step in a broader research agenda on the role of states as financiers. Here we focus on cross-border lending through loans, grants, and swap arrangements, which also underpins our work on China (Horn et al., 2025). Yet, direct lending captures only one dimension of the much larger footprint of state actors in international finance. A natural next step is to rigorously study the global investments of sovereign wealth funds and central banks, which have become among the largest holders of bonds and equities worldwide, often in opaque ways. The true scale of official finance is much larger than what we document here.

Looking ahead, state actors are likely to remain major global financiers, but the structure of official finance will continue to evolve, as it has over the past two centuries. In advanced economies, traditional development lending is declining, while central banks' swap line usage and military financing is gaining importance, as illustrated by support for Ukraine. At the same time, rising powers, most notably China, but also other governments with deep pockets (Saudi Arabia and the UAE, among others) lean heavily on state institutions to allocate capital abroad. These countries are founding new multilateral institutions, extending the global reach of their central banks, and nurturing their sovereign wealth funds. Given the scale, strategic nature, and limited transparency of these activities, official international finance will be a consequential area of inquiry.

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Online Appendix for "States as Financiers"

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A Data on international official lending (flows)

This appendix section provides a detailed description of our new International Official Lending database. We begin by introducing the main definitions and concepts, followed by a short history of official lending institutions over the past two centuries. We then present the general coding approach and provide information on the scope and limitations of the database. This section also gives a detailed account of all sources and discusses country-, era- or source-specific details.

A.1 Definitions and concepts

We define official sovereign lending by following the widely used OECD definition according to which *"official transactions are those undertaken by central, state or local government agencies at their own risk and responsibility, regardless of whether these agencies have raised the funds through taxation or through borrowing from the private sector. This includes transactions by public corporations that is corporations over which the government secures control by owning more than half of the voting equity securities or otherwise controlling more than half of the equity holders' voting power; or through special legislation empowering the government to determine corporate policy or to appoint directors"* (OECD, 2018).

Which creditors? Our definition of official lending includes both bilateral and multilateral lending. Bilateral lending is directly channeled from the creditor country to the recipient country. In contrast, multilateral lending is extended by international financial institutions that are established through political agreements among multiple member countries (IMF, 2014; OECD, 2018). Over the past 200 years the set of official creditor institutions has changed profoundly and now includes an ever growing number of bilateral and multilateral creditor institutions. Figure 2 in the main text provides a stylized representation of the evolution of the official creditor universe and maps out the different types of creditors that our data collection effort focuses on. During the 19$^{\text{th}}$ century, official lending was almost exclusively extended by bilateral creditors, in particular by the treasuries and foreign ministries of nations, as well as by their central banks. Since WW1, most official lending has been extended by specialized creditor institutions, such as development agencies and export credit banks at the bilateral level and by a growing number of multilateral financial institutions with diverse lending mandates. These include not only the UN, the IMF and the World Bank but a large number of regional or plurilateral development banks and safety nets (see Appendix Section A.6 for a full list and Appendix Section A.2 for a detailed historic account of the institutional evolution of official lending over the past two centuries).

Which debtors? We aim to capture all official lending transactions with non-residents as defined in IMF (2014), i.e., all instances of *cross-border* official lending.[16] While the creditor entity, by definition, needs to be a state or state-owned entity, we do not impose a similar restriction on the debtor entity. In principle, our data captures both government-to-government and government-to-private lending transactions. In practice, however, by far the largest share of official lending transactions are taken up

[16]Note that cross-border lending is defined exclusively by the residency of the recipient. An official cross-border lending transaction can therefore be denominated in local currency or can be governed by domestic law.

by public sector debtor entities. To avoid double counting, we do not include bilateral contributions to international financial organizations in the data set.

Defining the country sample: To define the set of creditor and debtor countries, we follow the widely used definition of the international state system provided by the Correlates of War database. According to this classification, all political entities are considered sovereign states under two conditions: (i) Prior to 1920, state membership requires that the entity has a population above 500,000 and diplomatic missions at or above the rank of chargé d'affaires with Britain and France. (ii) After 1920, the entity must be a member of the UN or the League of Nations, or have population greater than 500,000 and receive diplomatic missions from two major powers (see for example Small and Singer (1982)). We include all states that fulfill these criteria in the sample, starting from the year of their formal independence with data on independence years taken from Reinhart and Rogoff (2009).[17] Applying this definition has two important advantages: First, it accounts for changes in borders and the break-up of empires. Second, it ensures that we exclude from the dataset all official lending to and by overseas colonies, dominions or territories. While sizeable, these flows are arguably more akin to domestic lending and do not share the same commitment and enforcement problems that characterize international cross-border lending between sovereign states. For a discussion of resource flows within colonial empires see for example Davis and Huttenback (1987), Huillery (2014) or Esteves and Tuncer (2024).

Which instruments? We aim to capture all forms of direct lending between official creditors and foreign recipients and therefore trace a wide array of different debt instruments and transfers, including loans, grants, guarantees and drawdowns under (central bank) swap lines (on the latter, see details below).

Loans are defined as all transfers in cash or in kind for which the recipient incurs legal debt and the resulting liability is not traded in secondary markets (see for example OECD, 2018). This definition includes concessional and non-concessional instruments, as well as trade advances. Guarantees are cases of private creditor lending that are explicitly guaranteed by the creditor government. Cross-border grants are defined as transfers of cash, goods or services, for which no repayment needs to be made (OECD, 2018).

In contrast, we are *not* trying to track the following types of official flows and capital transfers. They all fall outside the definition of official cross-border lending:

- **Official portfolio investments** (by central banks, sovereign wealth funds and other state entities): States and state-controlled entities hold large portfolios of foreign assets acquired on secondary markets. These instruments include sovereign and corporate bonds, equities, and other securities which are bought by central banks, sovereign wealth funds, public pension funds, or state-owned banks. Such holdings involve no direct bilateral lending relationship between the official investor and the foreign sovereign or issuer. The securities are typically purchased from private intermediaries on liquid secondary markets, with no contractual link, conditionality, or negotiated terms that would tie the official holder to the underlying borrower. They therefore

[17] By using the formal year of independence, most states enter our sample earlier than they enter the COW state system. In some cases, it takes years for a country to be formally recognized by major powers. During this time substantial amounts of official lending may be received, so we follow Reinhart and Rogoff (2009) independence years to opt for more comprehensive coverage of official flows.

fall outside the scope of this paper. Moreover, central banks and sovereign wealth funds are notoriously opaque, providing little or no public information on the composition of their foreign holdings. This makes systematic tracking at the granular level of our database infeasible (see Alfaro et al. (2014) for a discussion of these flows).

- **Reparation and indemnity payments:** Historically, reparation or indemnity payments constituted an important share of resource transfers between sovereign states, in particular in the aftermath of major wars such as the Napoleonic War, the Franco-Prussian War of 1871 or the First World War (see for example Kindleberger (1984) for an overview of reparation payments during the financial history of Europe). We do not consider reparation or indemnity payments in this project and database given that they do not conform to the consensual nature that characterizes direct forms of official loans and grants.

- **Debt relief:** Sovereign debt relief implies a resource transfer between governments — via outright write-offs, reductions in principal, interest forgiveness, or concessional rescheduling. In this project, we focus on the provision of new official financing in the form of additional loan commitments, disbursements, and grants, and we also code the resulting debt stocks. We do not, however, separately code debt relief or debt restructuring operations on official loans, which would require a major dedicated effort given the absence of systematic long-run data sources on official defaults and debt relief. Existing research on post-WW1 debt relief (Reinhart and Trebesch, 2016) and on official defaults more broadly Schlegl et al. (2019) suggests that defaults on official cross-border loans are frequent and the associated debt relief is often substantial. Future work could complement our database by systematically coding official defaults, debt relief, and restructuring operations.

Official lending versus development aid: Official lending is not equivalent to (development) aid, although both concepts overlap. The OECD defines aid or official development assistance (ODA) as official lending for development purposes to developing countries with a grant element of at least 25 percent (see OECD, 2018, for details). In contrast, our definition of official lending captures transactions with all foreign countries (including advanced recipients), for all purposes and through both concessional as well as non-concessional lending instruments. Development aid is therefore a subset of the much larger universe of official lending that we study in this paper.

Purpose of lending: In addition to coding information about lending amounts and financial terms of lending, we also capture - whenever available - information on the stated purpose of each transaction and use this information to categorize transactions into three broad categories:

- **Military assistance:** This category includes all loans, grants and guarantees that support a foreign sovereign's military, including credit for weapon purchases and the provisioning of goods and services for the pursuit of war. Prominent examples include the US government's Lend-Lease program during the Second World War or Britain's support of continental allies during the campaigns against Napoleon.

- **Financial rescue lending:** This category includes all loans, grants and guarantees that support a foreign sovereign during a currency, debt, or banking crises, as well as general budget or balance of payments support that help the foreign sovereign cover fiscal or current account deficits.

Prominent examples include IMF lending or lending regional financial arrangements such as the European Stability Mechanism in the Eurozone.

- **Reconstruction and economic development:** This category includes loans, grants and guarantees for the financing of projects abroad ranging from infrastructure investments to state-building activities, and including expenditure for health, education, and humanitarian relief. Prominent examples include the US Marshall Plan to reconstruct Europe, China's Belt and Road Initiative, and the highly concessional financing ("development aid") that OECD governments provide to low-income countries.

As described in the main text, this purpose classification comes with significant caveats. Our classification relies on the stated or "de jure" purpose of each transaction. Since money is fungible, however, recipients may ultimately use the funds for other expenditures – with or without consent of the creditor. For example, foreign currency development grants may help to finance balance of payments deficits, and general budget loans may enable a sovereign to finance a military build-up. We therefore emphasize that the de jure purpose classification can only serve as rough heuristic to highlight historical patterns and to gauge the relative importance of different motives for official lending.

A.2 A short history of official lending institutions

This subsection expands on Figure 2 in the main text and provides a short historical overview of the evolution of international official lending practices across the past two centuries.

Throughout the 19th century and up until the 1920s, official international loans were exclusively extended by bilateral creditors, namely by the treasuries and foreign offices of nations, as well as by national central banks. These institutions were not specialized on providing foreign loans, but took up the task when special circumstances required them to do so, most often during wars (Clapham, 1917; Helleiner, 1965; Esteves and Tunçer, 2016), but occasionally also during financial crises (Kindleberger, 1984; Eichengreen, 1992; Bordo and Schwartz, 1998).

The practice of official sovereign lending across borders changed profoundly with the onset of WW1. War lending created large inter-government debts that took years to be resolved (Fisk, 1924; Moulton and Pasvolsky, 1932). At the same time, European sovereigns established a new type of official creditor institution: state-owned export banks that guaranteed private trade credits and directly extended buyer credits to foreign sovereigns, in particular to the Soviet Union that had lost access to private capital markets (Margold, 1934). In addition, the League of Nations, founded in 1920, started to cooperate with national treasuries to mobilize rescue loans for crisis countries in need, especially in Central and Eastern Europe where governments tried to stabilize their currencies after the war (Myers, 1945; Flores Zendejas and Decorzant, 2006). In doing so, they were supported by increasingly active central banks, which extended cross-border credit to other central banks in an effort to support the restoration of the gold standard (Clarke, 1967; Meyer, 1970). This era of central bank cooperation peaked during the crisis of 1931 and quickly receded afterwards. Guided by the newly founded Bank of International Settlements (BIS), central banks mobilized significant emergency credits to Central Europe and Britain to stem the turmoil caused by the retrenchment of private flows, with limited success (Accominotti and Eichengreen, 2015).

The crisis of 1931 and its aftermath mark a turning point in the development of official international lending. The crisis highlighted the volatile nature of private capital flows and led leading policy-makers and academics to acknowledge the importance of counter-cyclical official lending (Nurske, 1944). During the course of the 1930s, the United States joined European states in extending official loans to states with balance-of-payments problems, in particular through the US Export-Import Bank and the US Treasury's Exchange Stabilization Fund, which was established in 1934 (Zendejas and Nodari, 2025).

The lessons learned during these operations turned out to have great effect on the design of the post-WW2 Bretton Woods System (Bordo and Schwartz, 2001). In 1944, the IMF was founded with the aim of providing short-term official funds to countries with temporary balance-of-payments problems, alongside with the World Bank that was intended to provide long-term development and reconstruction funds (James, 1996). However, official lending during the post-war decades continued to be dominated by bilateral creditors. The US, in particular, engaged in large scale lending, e.g. via the Marshall Plan and the US Export-Import Bank (Mikesell, 1962; Long and Eichengreen, 1991). At the same time, the Soviet Union became an active official lender. Furthermore, outside the convertible dollar and sterling areas, sovereigns financed their current account deficits with the reciprocal extension of clearing credits (Mikesell, 1948; Behrman and Mikesell, 1958).

Starting from the late 1950s, the practice of official lending began to gradually shift from bilateral to multilateral creditor institutions, driven by a remarkable increase in the number and variety of multilateral lending institutions. Regional development banks first emerged in the late 1950s with the establishment of the European Development Fund and the Inter-American Development Bank and have spread to all regions of the globe since. In parallel, new Regional Financial Arrangements (RFAs) were set up, typically focused on providing emergency funds during balance-of-payments crises of member states. Early examples include the European Monetary Agreement founded in 1958 and the Central American Monetary Stabilization Fund of 1970. More recently, the European Stability Mechanism (ESM) founded in 2012, is just one manifestation of this long-run trend towards regional rescue facilities (Scheubel and Stracca, 2019). Beyond regional and multilateral arrangements, central bank swap lines have become an additional source of official finance (Bahaj et al., 2024). Starting with the defense of the Bretton Woods system in the 1960s, a network of bilateral swap lines has been in place that connects the major central banks of the world. More recently, these networks have expanded in size and scope. They now include the central banks of main emerging markets and, driven by China's central bank, also a growing number of developing countries (Horn et al., 2023).

Taken together, these institutional developments have transformed the practice of official sovereign lending from occasional instances of ad hoc cooperation between two states into a multi-layered, global financial safety net composed of a broad range of specialized institutions.

A.3 Central bank liquidity support (cross-border loans and swaps)

Central bank to central bank lending is an important but distinct form of direct official cross-border lending. We track this lending consistently across two centuries by combining historical short-term central bank credits with modern swap line drawings, which we treat as functionally equivalent forms

of cross-border liquidity support (this approach closely follows Bordo and Schwartz (1998) and Bordo et al. (2015)).

Historically, cross-border liquidity support between central banks was typically deployed selectively during balance of payments and financial crises. It took the form of short-term credits with maturities of around three months, often collateralized by gold or foreign exchange. These loans were frequently rolled over, especially if the recipient country continued to face financial stress. Prominent examples include the credits extended by the Bank of England and the Banque de France during banking crises of the 19th century such as the Baring crisis of 1890, the emergency credits between European central banks during the crisis of 1931, and the reciprocal short-term credit facilities during the Bretton Woods system to address recurrent currency pressures.

Modern central bank swap lines, primarily from the Federal Reserve, play a similar role and are predominantly activated in periods of acute financial stress. Under a swap line, a central bank temporarily exchanges its own currency for foreign currency with a counterpart central bank and commits to reverse the transaction at a pre-specified rate. Individual drawings typically have maturities of one week to three months, making swap lines a form of short-term cross-border credit. The largest activations occurred during the 2008 Global Financial Crisis and the Covid-19 pandemic of 2020, when the Federal Reserve provided US dollar liquidity to advanced country central banks to relieve dollar funding pressures in global banking systems (for details see Goldberg and Ravazzolo (2022) and Bahaj and Reis (2022). The People's Bank of China has also developed an extensive network of bilateral RMB swap lines, with drawings in recent years concentrated in countries facing balance of payments crises and financial distress (Horn et al., 2023).

Despite differences in legal form, institutional setup, and operational details, the economics of these credits has important parallels across eras. Both in history and today, central banks extend short-term cross-border liquidity support to each other, denominated in the lender's currency, with maturities of a few weeks to a few months, and with frequent rollovers while the recipient remained under stress. Also the case context is often similar, with flows concentrated in episodes of balance of payments pressure, banking distress, or disruptions in foreign currency funding markets. For these reasons, we merge historical and modern central bank liquidity support into a single, consistent series.

Our coding approach for swap line transactions follows Horn et al. (2023) and standard practice in international statistics and the IMF's Balance of Payments Manual. This means that we only code swap lines and credit arrangements to the extent that they are actually drawn, rather than the headline size of an underlying agreement or credit line (IMF, 2014). Many bilateral swap arrangements remain dormant for long periods or are never activated at all, so our data records realized cross-border lending transactions and outstanding claims, not the maximum access limits of (potentially unused) credit lines. To avoid double counting of the same underlying credit exposure, we further distinguish between new liquidity provision and the rollover (or renewal) of existing facilities. In cases where swap drawings are repeatedly extended or renewed over time, we code only the initial net increase in outstanding liabilities as new lending, while subsequent rollovers are treated as maturity extensions rather than additional gross flows. This distinction is particularly important because many historical and modern central bank swap arrangements saw serial rollovers that can substantially inflate aggregate lending amounts. In short, our data collection for central banks records realized cross-border lending transactions and outstanding claims.

The modern and historical sources used to trace central bank to central bank support across 200 years are reported in Section A.5 below. Compiling transaction-level data for dozens of central banks is more challenging than for government loans and grants, as no centralized, cross-country source exists.[18] We therefore rely on the rich academic literature on central bank cooperation, on the annual reports of major central banks, and on archival research at the Banque de France, the Bank of England, and the US Federal Reserve. The resulting database of central bank to central bank support is the most comprehensive collection of these flows to date, though it remains less complete than our database of government loans and grants. Future work could extend and complement our data collection by drawing on the archives of additional central banks, including those of smaller countries. Target 2 balances, which are automatic transactions among central banks within the Eurozone are not included.

A.4 Coding approach and data limitations

To cover international official lending throughout the past two centuries, our data construction approach proceeds in several steps.

1. **Identifying official creditor entities:** We begin by identifying relevant official creditor entities from the secondary literature cited in the previous subsection. In addition, the database of new bilateral donors by Budjan and Fuchs (2021) and the histories of international lending of last resort by Bordo and Schwartz (2001) and Kindleberger (1984) are particularly helpful resources for bilateral creditors. For multilateral creditors, the Oxford Handbook of International Organizations offers an excellent overview of the relevant institutions and the year of their foundation (Cogan et al., 2016).

2. **Identifying relevant sources and existing databases:** Once the set of relevant official creditor entities is identified, we proceed by searching for relevant data sources. As explained in much greater detail in subsections A.5 and B, sources generally fall into four categories: (i) international treaty series, (ii) creditor reports, (iii) recipient country debt statistics, and (iv) reports by international organizations and rating agencies.

3. **Data collection:** We systematically search our data sources for all transactions that qualify as official lending transactions under the definitions stated in Section A.1 above. Once identified, we collect all available transaction-level data including, whenever possible, the nominal commitment amount, financial terms of the loans, i.e., the interest rate, grace period and maturity year and the associated amounts outstanding (i.e., the debt stock).

4. **Data validation and reconciliation of conflicting information:** To validate our data, we compare the collected data across different sources and against the existing secondary literature. This procedure serves two functions. First, it helps to fill potential gaps in our coverage and helps to reconcile conflicting information. Second, and if conflicting information cannot be reconciled, in particular in historical contexts, we confirm that our main conclusions are robust to using different sources of data.

[18] The World Bank's Quarterly External Debt Statistics (QEDS) includes central bank overseas borrowing/lending, but it is aggregated, has limited country participation, and data only starts post-2000.

Limitations: Despite our best efforts to combine all available information, we note the following limitations to our data collection:

- **Completeness:** Our data collection needs to be considered a lower bound for the incidence and magnitude of official sovereign lending. In contrast to private debt securities that are traded on secondary markets, there is no centralized benchmark against which we can check the completeness of official lending transactions. Indeed, research has shown that bilateral lending is particularly prone to under-reporting in public debt statistics and government documents (Horn et al., 2024; Trebesch et al., 2023). Under-reporting in our database is likely most severe for small and poor countries, for cross-border central bank lending, and for non-repayable grants, which are not recorded in debt statistics. Military assistance is also likely to be under-reported, as such transactions are often classified or otherwise subject to heightened secrecy, particularly in autocratic regimes.
- **Missing information and different levels of granularity:** Splicing data from different eras and different sources inevitably creates inconsistencies in the level of granularity at which the final data is available. Certain sub-samples of the data are not available at the transaction level, but are aggregated to dyadic annual aggregates (i.e., we know the creditor country, the debtor country, the total amount and the commitment year, but do not have a break-down of individual transactions). This is the case for data sourced from the World Bank International Debt Statistics and various historical war episodes.
- **Inconsistencies in definitions over the very long run:** When constructing a 200-year database of international capital flows by splicing data from multiple sources, inconsistencies are inevitable. For example, and as explained in greater detail below, our long-run time series of debts owed to official creditors mix general government debt series with series that are based on broader public sector debt definitions. Inconsistencies between different data sources can also result from the application of different exchange rates. To avoid this issue, we code all amounts in the original currency of denomination whenever possible and then apply uniform exchange rates across all observations (see details in subsection D.4 below).

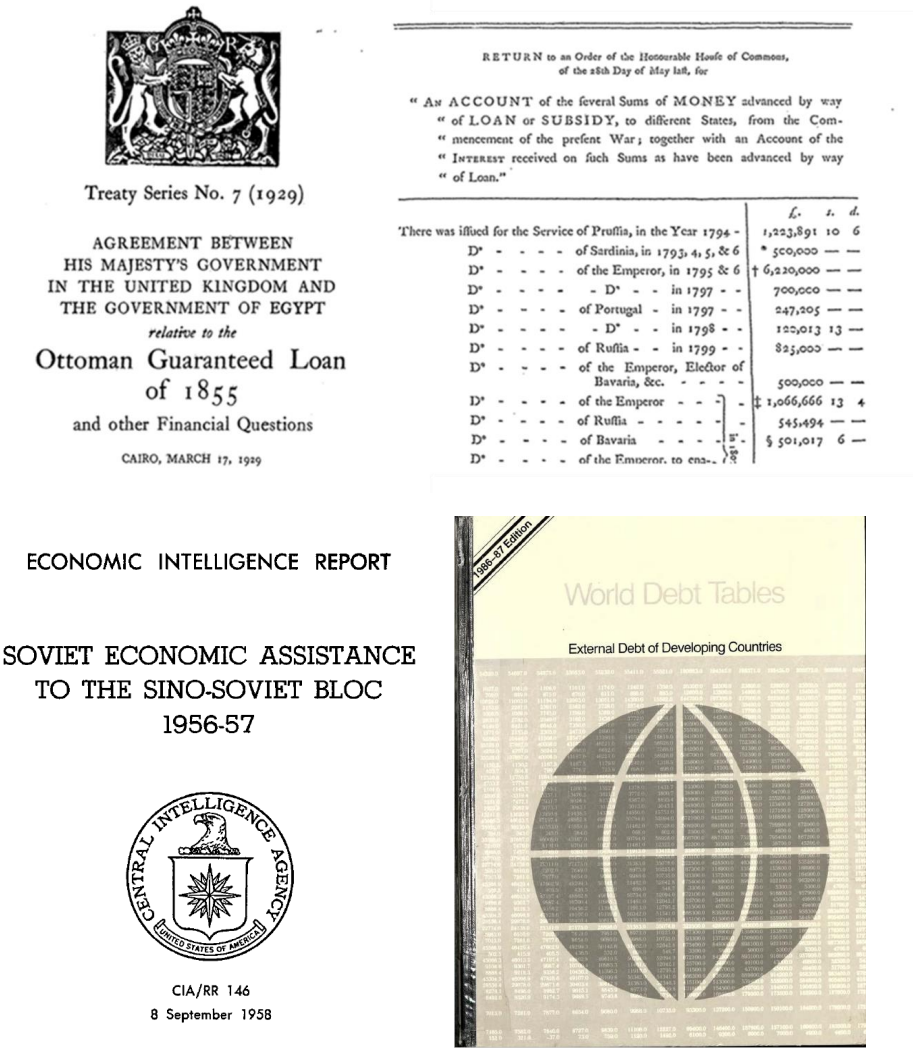
Robustness: We rely on two distinct strategies to deal with these potential data issues. Whenever possible, we collect data from multiple sources and compare lending volumes and terms (step 4 of the coding approach described above; see Section A.7 for selected examples). Whenever conflicting information cannot be reconciled, we confirm through robustness tests that none of the discrepancies alter our main conclusions. Secondly, we repeat parts of the empirical analysis in a smaller data sample that only includes the subset of creditor, debtor countries and years, for which highly comprehensive and fully harmonized data exists (see for example Appendix Section E.2). All conclusions derived from the full data set are confirmed in the smaller, more recent sample.

A.5 Sources for official loans, grants and guarantees

This subsection presents the sources that we use to compile transaction-level data on official loans, grants and guarantees. We proceed in chronological order and divide the sample into the four main eras: (i) The long 19th century (1790 to WW1), (ii) the Inter-War Period, (iii) the post-WW2 and

Bretton Woods era and the (iv) the modern era (1970 - 2020). Additional creditor-specific sources that have been used for more than one historic era are listed separately by creditor country and organization (v).

Figure A1: Illustration of historical sources



Notes: This figure illustrates the different types of historical sources that we use to construct the official international lending database: International treaties, creditor and debtor budget reports, reports by national agencies (e.g., by the CIA), and debt data collected by the World Bank and other international organizations.

A.5.1 The Long 19th century (1790-1913)

Our starting point for 19th century data collection are international treaty series. We search government-to-government treaty collections for bilateral credit and subsidy agreements and code all available information on these financial transactions. The resulting data set therefore consists of loan-level in-

formation on loans, grants and guarantees extended by the United Kingdom, France, Germany, Italy, Russia, Austria-Hungary as well as various smaller states. We supplement this series with information from investor manuals, statistical year books and country-specific resources, in particular budget plans and national accounts. For lending by central banks, we make use of existing research on central bank cooperation during the 19th century and conduct archival research at the Bank of England and the Banque de France, the two main central bank creditors of the time.

General Treaty Series

Bevans, Charles. Various Years. *Treaties and Other International Agreements of the United States of America.* Washington D.C.: Department of State.

De Martens, Georg Frederic. Various Years. *Recueil Des Principaux Traites d'Alliance, de Paix, de Treve, de Neutralite, de Commerce, de Limites, d'Echange et des plusieurs autres actes servant a la connaissance des relations etranges des puissances et etats de l'Europe.* Gottingue: Libraire de Dieterich.

De Martens, Georg Frederic, and de Martens, Charles. Various Years. *Recueil Des Principaux Traites d'Alliance, de Paix, de Treve, de Neutralite, de Commerce, de Limites, d'Echange et des plusieurs autres actes servant a la connaissance des relations etranges des puissances et etats de l'Europe.* Gottingue: Libraire de Dieterich.

De Martens, Georg Frederic, and Saalfeld, Frederic. Various Years. *Recueil Des Principaux Traites d'Alliance, de Paix, de Treve, de Neutralite, de Commerce, de Limites, d'Echange et des plusieurs autres actes servant a la connaissance des relations etranges des puissances et etats de l'Europe.* Gottingue: Libraire de Dieterich.

De Martens, Georg Frederic, and Murhard, Frederic. Various Years. *Recueil Des Principaux Traites d'Alliance, de Paix, de Treve, de Neutralite, de Commerce, de Limites, d'Echange et des plusieurs autres actes servant a la connaissance des relations etranges des puissances et etats de l'Europe.* Gottingue: Libraire de Dieterich.

Hopf, Jules. Various Years. *Nouveau Recueil Generals Des Traites et Autres Actes Relatifs aux Rapport de Droit International.* Gottingue: Libraire de Dieterich.

Murhard, Frederic. Various Years. *Nouveau Recueil Generals Des Principaux Traites, Conventions et Autres Transactions Remarquables.* Gottingue: Libraire de Dieterich.

Samwer, Charles, and Hopf, Jules. Various Years. *Nouveau Recueil Generals Des Traites et Autres Actes Relatifs aux Rapport de Droit International.* Gottingue: Libraire de Dieterich.

Samwer, Charles. Various Years. *Nouveau Recueil Generals Des Principaux Traites, Conventions et Autres Transactions Remarquable.* Gottingue: Libraire de Dieterich.

Stoerk, Felix. Various Years. *Nouveau Recueil Generals Des Traites et Autres Actes Relatifs aux Rapport de Droit International.* Leipzig: Libraire Dieterich.

Triepel, Heinrich. Various Years. *Nouveau Recueil Generals Des Traites et Autres Actes Relatifs aux Rapport de Droit International.* Leipzig: Libraire Dieterich.

De Martens, Georg Frederic. Various Years. *Recueil des Traites et Conventions conclus par la Russie avec les Puissances Etrangeres.* St. Petersburg: Imprimerie du Ministere des vois de communication.

De Clercq, M. Jules. Various Years. *Recueil des Traites de la France.* Paris: Archives Diplomatiques.

United Kingdom Foreign Office. *Various Years. British and Foreign State Papers.* London: Her Majesty's Stationary Office.

Annual Reports and Statistical Compendia

Clarke, Hyde. 1878. Sovereign and Quasi Sovereign States: Their Debts to Foreign Countries. *Journal of the Statistical Society* 51(2), 299 - 347.

Fenn, Charles. Various years. *Fenn's compendium of the English and foreign funds, debts and revenues of all nation.* London: E. Wilson.

Fortune, Thomas. Various years. *Fortune's Epitome of the Stock and Public Funds.* London: Boosey & Sons.

Kimber, Albert. 1922. *Kimber's Records of Government Debts and other Foreign Securities.* New York: A. W. Kimber & Company.

Secondary sources

Ahrens, Gerhard. 1986. *Krisenmanagement 1857 - Staat Und Kaufmannschaft in Hamburg Während Der Ersten Weltwirtschaftskrise.* Hamburg: Verein für Hamburgische Geschichte.

Bordo, Michael D, and Anna J Schwartz. 1998. Under What Circumstances, Past and Present, Have International Rescues of Countries in Financial Distress Been Successful? *Journal of International Money and Finance* 18(4), 683 - 708.

Esteves, Rui, and Ali Tuncer. 2014. Feeling the Blues. Moral Hazard and Debt Dilution in Eurobonds Before 1914. CEPR Discussion Paper 9860.

Flandreau, Marc. 1997. Central Bank Cooperation in Historical Perspective: A Sceptical View. *The Economic History Review* 50(4), 735-63.

Gay, Edwin. 1926. War Loans or Subsidies. *Foreign Affairs* 4 (3), 394-405.

Helleiner, Karl. 1965. *The Imperial Loans: A Study in Financial and Diplomatic History.* New York: Oxford University Press.

Kindleberger, Charles. 1984. *A Financial History of Western Europe.* London: Routledge.

Mitchener, Kris J. and Marc Weidenmier. 2010. Supersanctions and Sovereign Debt Repayment. *Journal of International Money and Finance* 29(1), 19-36.

Sauer, Josef. 1930. Finanzgeschäfte der Landgrafen von Hessen-Kassel: Ein Betrag zur Geschichte des kurhessischen Haus- und Staatsschatzes und zur Entwicklungsgeschichte des Hauses Rothschild. Fulda: Druck der Fuldaer Actiendruckerei.

Sherwig, John. 1969. *Guineas and Gunpowder: British Foreign Aid in the Wars with France 1793-1815.* Cambridge: Harvard University Press.

Silberling, Norman J. 1914. Financial and Monetary Policies of Great Britain during the Napoleonic Wars. *Quarterly Journal of Economics* 38(2), 214-233.

A.5.2 The Inter-War Period (1914-1945)

Official lending surged with the onset of WW1 and its immediate aftermath. Debts owed to official creditors remained high throughout the 1920s and 1930s. This phenomenon was documented in policy reports by official institutions, in investor manuals and in the writings of contemporaneous observers. Our time-series splices together all these sources and supplements them with credit agreements from international treaty series and creditor country budget plans. For central banks, we again make use of annual reports, existing academic work and archival research.

Treaty Series, Annual Reports and Statistical Compendia

Bank for International Settlements. Various Years. Annual Report. Basel: Bank for International Settlements.

League of Nations. 1936. *Enquiry into Clearing Agreements.* Geneva: League of Nations.

League of Nations. 1943. *Relief Deliveries and Relief Loans 1919-1923.* Geneva: League of Nations.

League of Nations. Various Years. *Memorandum of Public Finance.* Geneva: League of Nations.

League of Nations. Various Years. *League of Nations Treaty Series.* Geneva: League of Nations.

League of Nations. 1943. *Europe's Capital Movements 1919-1932: A Statistical Note.* Geneva: League of Nations.

Moody's. Various Years. *Moody's Manual of Investments - American and Foreign.* New York: Moody's Investor Service.

United Nations. 1946. International Capital Movement during the Inter-War Period. United Nations Publication No. 1949.II.D.2.

Secondary sources

Andersen, Poul N. 1946. *Bilateral Exchange Clearing Policy.* London: Oxford University Press.

Clarke, Stephen. 1967. *Central Bank Cooperation 1924-1931.* New York: Federal Reserve Bank of New York.

Eichengreen, Barry. 1992. *Golden Fetters: The Gold Standard and the Great Depression 1919 - 1939.* New York: Oxford University Press.

Fisk, Harvey. 1924. *The Inter-Ally Debts 1914 - 1923.* New York: Bankers Trust Company.

Flores Zendejas, Juan, and Yann Decorzant. 2016. Going Multilateral? Financial Markets' Access and the League of Nations Loans, 1923 – 1928. *Economic History Review* 2, 653–78.

Kao, Ping-Shu (1946). *Foreign Loans to China.* New York: Sino-International Economic Research Center.

Margold, Stella. 1934. *Export Credit Insurance in Europe today.* Washington D.C.: Government Printing Office.

Meyer, Richard Hemming. 1970. *Bankers' Diplomacy - Monetary Stabilization in the Twenties.* New York: Columbia University Press.

Moulton, Harold G., and Leo Pasvolsky. 1932. *War Debts and World Prosperity.* Washington D.C.: Brookings Institution.

Myers, Margaret. 1945. The League Loans. *Political Science Quarterly* 60(4), 492–526.

Neal, Larry. 1979. The Economics and Finance of Bilateral Clearing Agreements: Germany, 1934-8. *The Economic History Review* 32(3), 391-404.

Reinhart, Carmen, and Christoph Trebesch. 2016. Sovereign Debt Relief and Its Aftermath. *Journal of the European Economic Association* 14(1), 215-51.

Ritschl, A. O. 2001. Nazi Economic Imperialism and the Exploitation of the Small: Evidence from Germany's Secret Foreign Exchange Balances, 1938-1940. *Economic History Review* 54(2), 324–45.

Strachan, Hew. 2004. *Financing the First World War.* New York: Oxford University Press.

Thomas, Hugh. 1961. *The Spanish Civil War.* New York: Modern Library.

Young, Arthur. 1963. *China and the Helping Hand, 1937-1945.* Cambridge, MA: Harvard University Press.

A.5.3 The Post-War Period (1946-1970)

Our collection of post-WW2 loans and grants builds on a large number of published and unpublished reports by the BIS, the IBRD, Moody's, the OEEC (renamed to OECD in 1961) and the UN. All of the reports listed in the following are available in the on-site or digital archives of these institutions. For cross-border central bank lending, we make use of the secondary literature and archival research at the Federal Reserve and the BIS.

Main Sources

Bank for International Settlements. 1945 - 1973. Annual Report. Basel: Bank for International Settlements.

Inter-American Development Bank. 1966. E*uropean Financing of Latin America's Economic Development.* Washington D.C.: Inter-American Development Bank.

Inter-American Development Bank. 1969. *European Participation in the Financing of Latin American Development.* Washington D.C.: Inter-American Development Bank.

Moody's. Various Years. Moody's Manual of Investments - American and Foreign. New York: Moody's Investor Service.

Organization for Economic Cooperation and Development. 1961. The Flow of Financial Resources to Countries in Course of Economic Development 1956-1959. Paris: OECD.

Organization for Economic Cooperation and Development. 1962. The Flow of Financial Resources to Countries in Course of Economic Development 1960. Paris: OECD.

Organization for Economic Cooperation and Development. 1963. The Flow of Financial Resources to Countries in Course of Economic Development 1961. Paris: OECD.

Organization for Economic Cooperation and Development. 1965. The Flow of Financial Resources to Less-Developed Countries 1956-1963. Paris: OECD.

United Nations Economic and Social Council. 1957. Financing of Economic Development - Information Concerning International Economic Assistance for the Less Developed Countries. Report by the Secretary-General E/3047. New York: United Nations.

United Nations Economic and Social Council. 1958. Economic Development of Under-Developed Countries - International Economic Assistance to the Under-Developed World 1956/57. Report by the Secretary-General E/3131. New York: United Nations.

United Nations Economic and Social Council. 1961. International Economic Assistance to the Less Developed Countries. Report by the Secretary-General. New York: UN Department of Economic and Social Affairs.

Secondary sources

Behrman, Jack N., and Raymond Mikesell. 1958. Financing Free World Trade with the Sino-Soviet Bloc. *Princeton Studies in International Finance* 8, 1-268.

Bittermann, Henry J. 1973. *The Refunding of International Debt.* Durham: Duke University Press.

Bordo, Michael, Owen Humpage, and Anna Schwartz. 2015. The Evolution of the Federal Reserve Swap Lines since 1962. *IMF Economic Review* 63(2), 353-372.

Eichengreen, Barry J. 1993. *Reconstructing Europe's Trade and Payments: The European Payments Union.* Ann Arbor: University of Michigan Press.

James, Harold. 1996. *International Monetary Cooperation Since Bretton Woods.* New York: Oxford University Press.

Kaplan, Jacob and Günther Schleimiger. 1989. *The European Payments Union: Financial Diplomacy in the 1950s.* Oxford: Clarendon Press

Kriz, Miroslav A. 1947. Postwar International Lending. *Princeton Essays in International Finance* 8, 1-36.

Mikesell, Raymond. 1948. Regional Multilateral Payments Arrangements. *The Quarterly Journal of Economics* 62(4), 500-518.

Mikesell, Raymond. 1962. *U.S. Private and Government Investment Abroad.* Eugene: University of Oregon Press.

Mikesell, Raymond. 1966. *Public International Lending for Development.* New York: Random House.

Shonfield, Andrew, and Susan Strange, eds. 1976. *International Economic Relations of the Western World 1959 - 1971.* New York City: Oxford University Press.

Toniolo, Gianni. 2005. *Central bank Cooperation at the Bank for International Settlements 1930 - 1973.* Cambridge: Cambridge University Press.

Trued, Merlin and Mikesell, Raymond. 1955. Postwar Bilateral Payments Agreements. *Princeton Series in International Finance* 4, 1-132.

A.5.4 The Modern Period (1970-2024)

From around 1970 onward, data on official lending has been systematically collected by international organizations such as the World Bank and the OECD. Our database brings together data on official grants from the OECD's Creditor Reporting System (CRS) and the database compiled by Tierney et al. (2011) with data on official loans from the World Bank's debtor reporting system (DRS). In several instances, we complement these data sources with additional transaction-level data from annual reports of creditors, in particular for those creditor countries that do not voluntarily disclose their lending activities through the OECD's Creditor Reporting System. Lending by regional financial arrangements is taken from creditor organization annual reports and websites as well as from the database provided by Scheubel and Stracca (2019). For central bank lending, our collection of loans stems from central bank annual reports and from existing academic research.

This subsection provides details on how we extract all relevant information from these different data sources and how we alter the data to ensure consistent application of our official lending definition.

World Bank International Debt Statistics (IDS)

The World Bank's International Debt Statistics provide debtor reported data on outstanding public and publicly guaranteed debt stocks and lending for around 120 countries since 1970. Data is available at the dyadic level and by creditor type. This allows to extract both bilateral and multilateral lending, aggregated to the creditor-debtor-year level. More specifically, we make use of bilateral and multilateral commitment (series codes "DT.COM.OFFT.CD") and disbursement data (series codes "DT.DIS.OFFT.CD"). We also use the IDS to extract data on loan terms, including the interest rate (series code "DT.INR.OFFT"), the grace period ("DT.GPA.OFFT") and the time to maturity ("DT.MAT.OFFT").

To increase country and year coverage, we do not just extract data from the most recent release of the data, but also draw on earlier vintages of the World Bank's debt statistics, including the Global Development Finance reports and the World Debt Tables (using data collected by Horn et al. (2024)).

OECD Creditor Reporting System (CRS) and AidData Core Research Release

The World Bank's IDS only captures debt stocks and debt-creating flows and thereby does not contain information on (non-repayable) grant financing. To collect transaction-level grant data, we therefore draw on multiple additional sources. Our starting point is the database compiled by Tierney et al. (2011) (AidData Core Research Release Version 3.1), which covers grants from 46 different bilateral donor countries and 45 international organizations until 2014. The key source for this database is the OECD's Creditor Reporting System, which tracks creditor-reported data on official development assistance (ODA) and on other official flows (OOF). We can therefore draw on the latest releases of the OECD's CRS data to update overall coverage of bilateral and multilateral cross-border grant provision until 2024.

To integrate data from the OECD Creditor Reporting System and from AidData, several transformations are necessary to ensure the consistent application of our definitions of official sovereign lending.

Both databases seek to identify development assistance and aid activities rather than official cross-border lending. In addition to tracking cross-border financial flows, these database therefore also include certain types of in-country expenditures that donor countries consider aid activities. These include, for example, administrative expenses, expenditures for asylum seekers or the provision of scholarships to students from developing countries. We drop such instances from our data. We also exclude all cases of debt relief (see A.1).

To avoid double-counting, we further drop all transactions that are classified as ODA loans or OOF loans from the OECD CRS data after confirming that the same transactions are already covered through data from the World Bank International Debt Statistics.[19] We also drop bilateral contributions to multilateral organizations, which would lead to double-counting of total official lending flows when bilateral and multilateral flows are aggregated.

A.5.5 Additional creditor-specific sources

Several creditor countries and multiple multilateral creditor organizations publish public accounts of their international lending activities at various levels of detail. For other creditors, detailed academic research exists that has documented lending activities. These accounts are not limited to one specific era, although the availability of creditor statistics has increased over time. The sources listed below have served a dual purpose for the construction of our database. (i) For those creditors, which are not well covered by the datasets from international organizations described above (e.g. the countries of the Soviet Bloc or China), these sources allow to complement our data and fill potential reporting gaps (see e.g., Horn et al., 2021, for a discussion of China's overseas lending). (ii) For those creditors, which are well covered by international organizations, in particular the members of the OECD Development Assistance Committee that voluntarily report to OECD's Creditor Reporting System, country-specific sources provide useful opportunities to cross-check and validate our data construction and merging process. To this end, appendix subsection A.7 provides the results from selected validation checks.

Bilateral creditors

<u>China</u>

Dreher, A., Fuchs, A., Parks, B. C., Strange, A., & Tierney, M.J. 2022. Banking on Beijing: The Aims and Impacts of China's Overseas Development Program. Cambridge, UK: Cambridge University Press.

Bartke, Wolfgang. 1975. *China's Economic Aid.* London: C. Hurst.

Bartke, Wolfgang. 1976. *The Agreements of the People's Republic of China 1949 - 1975.* Hamburg: Institut für Asienkunde.

Copper, John. 2016. *China's Foreign Aid and Investment Diplomacy.* 3 vols. London: Palgrave Macmillan.

Parks, B. C., Escobar, B., Walsh, K., Zhang, S., Fedorochko, R., Vlasto, L., Sickell, J., Miao, S., Bury, E., Zimmerman, J., Custer, S., Dreher, A., Franz, L., Fuchs, A., Horn, S., Malik, A. A., Reinhart,

[19]For countries that do not report to the World Bank International Debt Statistics, e.g. upper-middle income countries such as Israel or Chile, we also use OECD data on loans to fill coverage gaps.

C. M., Strange, A., Tierney, M. J., & Trebesch, C. 2025. Tracking Loans and Grants from China to Low-, Middle-, and High-Income Countries: An Application of AidData's TUFF 4.0 Methodology. Williamsburg, VA: AidData at William & Mary.

Law, Yu Fai. 1984. Chinese Foreign Aid: A Study of Its Nature and Goals with Particular Reference to the Foreign Policy and World View of the People's Republic of China, 1950 - 1982. PhD diss., University of Bielefeld.

Lin, Teh-chang. 1993. The foreign aid policy of the People's Republic of China: A theoretical analysis. PhD diss., Northern Illinois University.

France:

Duvergier, J. B., ed. Various Years. *Collection Complete des Lois, Decrets, Ordonnances, Reglemens et Avis du Conseil-d'Etat.* Paris: Bibliotheque Nationale de France.

Hayter, Theresa. 1966. *French Aid.* London: Overseas Development Institute.

Journal Officiel de la Republique Francaise. Various Years. Lois et Decrets. Paris: Bibliotheque Nationale de France.

Le Ministre Secretaire D'Etat des Finances. Various Years. Comptes Rendus par les Ministres. Paris: L'Imprimerie Royale.

Ministere du Commerce, de l'Industrie, des Postes et des Telegraphes. Various Years. Annuaire Statistique. Paris: Bibliotheque Nationale de France.

Plessis, Alain. 1998. *Histoires de La Banque de France.* Paris: Albin Michel.

Germany:

Cholet, Julia. 2011. *Der Etat des Deutschen Reiches in der Bismarckzeit.* Berlin: Berliner Wissenschaftsverlag.

Kaiserliches Statistisches Amt. Various Years. Statistisches Jahrbuch für das Deutsche Reich. Berlin: Kaiserliches Statistisches Amt.

Deutsche Bundesbank. Various Years. Geschäftsbericht. Frankfurt a. M.: Deutsche Bundesbank.

Kruse-Rodenacker, Albrecht, Horst Dumke, and Niklas von Götz. 1970. *Kapitalhilfe: Probleme und Aufgaben.* Berlin: Duncker & Humblot.

Reichstag des Deutschen Kaiserreichs. Various Years. Verhandlungen des Deutschen Reichstags. www.reichstagsprotokolle.de (accessed February 5, 2019).

Schmidt, Heide-Irene. 2003. Pushed to the Front: The Foreign Assistance Policy of the Federal Republic of Germany 1958-1971. *Contemporary European History* 12(4), 473-507.

White, John. 1965. *German Aid - A Survey of the Sources, Policies and Structure.* London: Overseas Development Institute.

United Kingdom:

Bank of England. Various Years. Annual Report. London: Bank of England.

Clapham, J. H. 1945. *The Bank of England: A History.* London: The Macmillan Company.

Mackintosh, Athole and Andrzej Krassowski. 1963. *British Aid.* London: Overseas Development Institute.

Ministry of Overseas Development. 1966. *Overseas Development - The Work in Hand.* London: Ministry of Overseas Development

Scholes, Teophilus. 1899. *The British Empire and Alliances: or, Britain's Duty to her Colonies and Subject Races.* London: E. Stock.

UK House of Commons. Various Years. Appropriation Accounts. UK House of Commons Parliamentary Papers.

UK House of Commons. Various Years. Colonial Development Fund Accounts. UK House of Commons Parliamentary Papers.

UK House of Commons. Various Years. Finance Accounts of the United Kingdom of Great Britain and Ireland for the Financial Year. UK House of Commons Parliamentary Papers.

UK House of Commons. Various Years. UK Treaty Series. UK House of Commons Parliamentary Papers.

UK Foreign Office. Various Years. British and Foreign State Papers. London: Her Majesty's Stationary Office.

United States:

Bevans, Charles. Various Years. *Treaties and Other International Agreements of the United States of America.* Washington D.C.: Department of State.

Export-Import Bank of Washington. Various Years. Annual Report. Washington D.C.: Export-Import Bank.

Export-Import Bank of Washington. Various Years. Report to Congress. Washington D.C.: Export-Import Bank.

Federal Reserve System. Various Years. Federal Reserve Bulletin. Washington D.C.: Federal Reserve.

Trundle, Sidney. 1950. The Export-Import Bank of Washington - Its Origins, Operations and Relationships with Other Governmental Agencies 1934 - 1950. PhD dissertation, Rutgers University.

US Agency for International Development. 2024. Greenbook - U.S. Overseas Loans and Grants. https://explorer.usaid.gov/reports.html/tab-greenbook.

US Department of Commerce. 1952. Foreign Aid by the United States Government 1940 - 1951. Washington D.C.: US Department of Commerce.

US Department of State. Various Years. Report to Congress on Lend-Lease Operations. Washington D.C.: US Department of State.

US Treasury. Various Years. Annual Report of the Secretary of the Treasury on the State of the Finances. Washington D.C.: US Treasury.

US Treasury. 2024. Exchange Stabilization Fund - History of Credit Operations. https://www.treasury.gov/resource-center/international/ESF/Pages/history-index.aspx.

Williams, Benjamin. 1939. *Foreign Loan Policy of the United States since 1933.* New York City: Council for Foreign Relations.

Soviet Union and COMECON Countries:

Bach, Quintin. 2003. *Soviet Aid to the Third World: The Facts and Figures.* Lewes: Book Guild.

Caiola, Marcello. 1959. Balance of Payments of the U.S.S.R., 1955-1958. Washington D.C.: International Monetary Fund.

Caiola, Marcello. 1960. Balance of Payments of the U.S.S.R., 1959-1960. Washington D.C.: International Monetary Fund.

Central Intelligence Agency. 1960. Foreign and Domestic Debt in Communist China. Langley, VA: Central Intelligence Agency.

Central Intelligence Agency. Various Years. Communist Aid to Non-Communist Less Developed Countries. Langley, VA: Central Intelligence Agency.

Central Intelligence Agency. Various Years. Soviet Economic Assistance to the Sino-Soviet Bloc. Langley, VA: Central Intelligence Agency.

Shapiro, Leonard, ed. Various Years. *Soviet Treaty Series. A Collection of Bilateral Treaties, Agreements and Conventions, Concluded between the Soviet Union and Foreign Powers.* Washington D.C.: Georgetown University Press.

Triska, Jan and Robert M. Slusser. 1962. *The Theory, Law and Policy of Soviet Treaties.* Stanford: Stanford University Press.

Walters, Robert. 1966. *Soviet Economic Aid to Cuba: 1959 - 1964.* International Affairs 42 (1): 74-86.

Other creditor countries:

Boogaerde, Pierre. 1990. The Composition and Distribution of Financial Assistance from Arab Countries and Arab Regional Institutions. IMF Working Paper WP/90/67.

Takagi, Shinji. 1995. From Recipient to Donor: Japan's Official Aid Flows, 1945 to 1990 and Beyond. *Princeton Essays in International Finance* 164, 1-50.

Kuwait Fund for Arab Economic Development. Various Years. Annual Report. Kuwait City: Kuwait Fund.

Main sources on multilateral creditors

Arab Monetary Fund. Various Years. Annual Report. Abu Dhabi.

Asian Infrastructure Investment Bank. 2024. Approved Projects. https://www.aiib. org/en/projects/approved/index.html.

Bank for International Settlements. Various Years. Annual Report. Basel: Bank for International Settlements.

Eurasian Fund for Stabilization and Development. 2024. "Projects: Dataset". https://efsd.eabr.org/en/projects/.

European Commission. Various Years. Report to the European Parliament and the Council on the Implementation of Macro-Financial Assistance to Third Countries. Brussels.

European Commission. Various Years. The Commission's Annual Report to the Parliament and the Council on the Borrowing and Lending Activities of the Community. Brussels: European Commission.

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A.6 International Official Lending Database, 1790-2024

This subsection summarizes the scope of the International Official Lending Database. Our final database covers around 1.2 million official lending transactions with total commitment amounts of USD 20 trillion (in 2020 USD).

The large majority of lending transactions is provided in the form of grants (90 percent), but the overall amounts of grant financing (20 percent) are much smaller than the amounts provided in the form of loans (80 percent). This in part reflects the smaller average lending amount of grants but is also due to different levels of granularity at which underlying sources report loans and grants. The OECD Creditor Reporting System, which is our main source for grant finance, for example, encourages creditors to report grant transactions at the project level, whereas loans are reported in more aggregate form in some of the underlying sources.

Tables A1 and A2 provide more detailed breakdowns of the transactions in our database for bilateral and multilateral lending respectively. Table A1 shows the total number of bilateral lending transactions that each country in our sample has received and extended over the course of the past 200 years. Table A2 focuses on multilateral lending and shows the number of extended grants and loans for each of the 70 multilateral lending entities covered in our dataset.

Table A1: Coverage of bilateral lending transactions by country

	Official lending transactions	
Country	Extended	Received
Afghanistan	2	8,592
Albania	2	6,817
Algeria	61	4,737
Angola	15	7,266
Antigua and Barbuda	0	497

Table A1: Coverage of bilateral lending transactions by country

	Official lending transactions	
Country	Extended	Received
Argentina	112	7,669
Armenia	3	4,189
Australia	28,824	228
Austria	8,272	262
Austria-Hungary	4	4
Austrian Empire	2	12
Azerbaijan	77	3,479
Baden	0	2
Bahamas, The	1	196
Bahrain	1	486
Bangladesh	0	13,296
Barbados	4	440
Bavaria	0	1
Belarus	7	2,520
Belgium	25,383	188
Belize	1	1,472
Benin	0	6,684
Bhutan	0	2,916
Bolivia	2	13,682
Bosnia and Herzegovina	2	9,444
Botswana	0	3,648
Brazil	146	13,448
Brunei	3	106
Bulgaria	309	1,798
Burkina Faso	0	9,661
Burundi	1	4,809
Cabo Verde	3	4,635
Cambodia	3	13,298
Cameroon	2	7,435
Canada	28,137	78
Central African Republic	0	2,034
Chad	0	3,697
Chile	7	6,271
China	11,653	14,637
Colombia	10	10,862
Comoros	0	1,330
Congo, Dem. Rep.	3	9,831
Congo, Rep.	5	2,503

Table A1: Coverage of bilateral lending transactions by country

	Official lending transactions	
Country	Extended	Received
Cook Islands	0	765
Costa Rica	11	4,678
Cote d'Ivoire	7	5,862
Crete	0	2
Croatia	609	2,524
Cuba	17	5,879
Cyprus	188	372
Czech Republic	1,344	1,072
Czechoslovakia	466	132
Denmark	8,443	99
Djibouti	0	2,683
Dominica	0	701
Dominican Republic	0	7,259
Ecuador	6	10,867
Egypt	35	11,407
El Salvador	2	9,274
Equatorial Guinea	3	1,546
Eritrea	0	2,274
Estonia	131	1,097
Ethiopia	1	16,769
Fiji	0	4,108
Finland	9,582	138
France	78,517	234
Gabon	2	2,413
Gambia, The	1	2,049
Georgia	0	5,862
Germany	71,214	279
Germany, Dem. Rep.	296	44
Ghana	2	9,823
Greece	5,830	948
Grenada	0	646
Guatemala	5	10,789
Guinea	0	4,420
Guinea-Bissau	0	3,218
Guyana	1	1,671
Haiti	0	6,761
Hannover	0	10
Hesse Electoral	6	9

Table A1: Coverage of bilateral lending transactions by country

	Official lending transactions	
Country	Extended	Received
Hesse Grand Ducal	0	4
Honduras	4	8,417
Hungary	614	1,285
Iceland	173	96
India	377	18,114
Indonesia	9	19,539
Iran	16	2,895
Iraq	66	9,885
Ireland	14,338	21
Israel	162	4,726
Italy	28,748	304
Jamaica	0	3,661
Japan	187,034	323
Jordan	0	7,284
Kazakhstan	42	4,526
Kenya	2	15,187
Kiribati	0	1,726
Korea, Dem. Rep.	0	1,114
Korea, Rep.	38,962	1,076
Kuwait	1,277	123
Kyrgyz Republic	1	4,922
Laos	0	10,141
Latvia	174	1,083
Lebanon	10	6,387
Lesotho	0	3,340
Liberia	0	3,864
Libya	98	1,452
Liechtenstein	9	2
Lithuania	547	1,017
Luxembourg	5,219	9
Macedonia, FYR	0	4,841
Madagascar	0	6,687
Malawi	0	8,025
Malaysia	16	5,506
Maldives	0	1,672
Mali	0	9,539
Malta	12	337
Marshall Islands	0	1,536

Table A1: Coverage of bilateral lending transactions by country

	Official lending transactions	
Country	Extended	Received
Mauritania	0	4,187
Mauritius	1	1,857
Mexico	77	9,423
Micronesia, Fed. Sts.	0	1,995
Moldova	0	5,194
Mongolia	0	8,371
Montenegro	0	1,457
Morocco	8	14,135
Mozambique	0	17,610
Myanmar	0	8,220
Namibia	0	5,306
Nauru	0	567
Nepal	0	10,002
Netherlands	27,216	173
New Zealand	4,376	56
Nicaragua	0	12,327
Niger	0	6,552
Nigeria	11	7,127
Norway	27,653	114
Oman	3	729
Ottoman Empire	1	9
Pakistan	15	11,002
Palau	0	1,317
Panama	2	3,648
Papua New Guinea	0	5,555
Paraguay	13	5,922
Persia	29	307
Peru	12	17,180
Philippines	1	15,384
Poland	1,882	1,955
Portugal	9,878	250
Qatar	212	137
Romania	688	2,449
Russia	94	4,935
Russian Empire	12	29
Rwanda	0	9,299
Samoa	0	2,873
Sao Tome and Principe	0	2,153

Table A1: Coverage of bilateral lending transactions by country

	Official lending transactions	
Country	Extended	Received
Saudi Arabia	1,606	563
Saxony	1	1
Senegal	0	13,068
Serbia	6	4,353
Serbia and Montenegro, FRY	0	5,601
Serbia, Kingdom	0	16
Seychelles	0	1,048
Sierra Leone	0	4,028
Singapore	7	517
Slovakia	599	952
Slovenia	330	534
Solomon Islands	0	3,163
Somalia	0	3,290
South Africa	92	12,231
South Sudan	0	1,890
Soviet Union	1,423	91
Spain	72,193	316
Sri Lanka	0	11,054
St. Kitts and Nevis	0	284
St. Lucia	0	922
St. Vincent and the Grenadines	1	631
Sudan	0	8,353
Suriname	0	1,383
Swaziland	0	1,966
Sweden	24,157	59
Switzerland	22,724	29
Syria	5	4,018
Taiwan	37	453
Tajikistan	0	4,265
Tanzania	3	17,300
Thailand	258	10,172
Timor-Leste	10	4,462
Togo	3	3,743
Tonga	0	2,591
Transvaal	0	2
Trinidad and Tobago	18	725
Tunisia	10	8,430
Turkey	7,738	5,748

Table A1: Coverage of bilateral lending transactions by country

	Official lending transactions	
Country	Extended	Received
Turkmenistan	3	1,517
Tuvalu	0	330
Two Sicilies	0	9
USA	149,618	484
Uganda	0	13,372
Ukraine	0	12,750
United Arab Emirates	1,005	254
United Kingdom	30,189	272
Uruguay	19	3,505
Uzbekistan	2	5,786
Vanuatu	0	3,238
Venezuela	243	3,570
Vietnam	6	19,781
Vietnam, South	0	229
Yemen, Arab Rep.	0	587
Yemen, Kingdom	0	14
Yemen, People's Rep.	0	83
Yemen, Rep.	0	4,068
Yugoslavia	124	321
Zambia	2	11,613
Zimbabwe	1	7,990

Notes: This table shows the number of bilateral lending transactions by country. Column 2 gives the number of official loans and grants that a given country has extended to other countries, whereas column 3 gives the number of official loans and grants that a given country has received from other countries. Multilateral lending is not taken into account.

Table A2: Coverage of multilateral creditor institutions

Creditor entity	N	First year	Last year
African Capacity Building Foundation (ACBF)	97	1999	2008
African Development Bank (AFDB)	1,779	1967	2024
African Development Fund (AFDF)	3,156	1974	2024
African Export-Import Bank	39	2010	2024
Andean Development Corporation (CAF)	1,362	1970	2024
Arab Bank for Development in Africa (BADEA)	1,147	1974	2022
Arab Fund for Economic and Social Development	1,129	1974	2024
Arab League	6	1974	1975
Arab Monetary Fund (AMF)	204	1978	2024
Asian Development Bank (ASDB)	4,899	1968	2024
Asian Development Fund (ASDF)	1,150	1968	2010
Asian Infrastructure Investment Bank (AIIB)	201	2016	2024
Bank for International Settlements (BIS)	62	1931	1995
Black Sea Trade and Development Bank (BSTDB)	16	2020	2024
Caribbean Development Bank (CDB)	1,130	1971	2024
Central Bank of West African States (BCEAO)	17	1980	2024
Council of Europe Development Bank	75	2010	2024
ECO Trade and Development Bank	13	2009	2024
EEC	92	1978	1992
EU BoP Facility	7	1991	2013
EU Common Loan Mechanism (CLM)	4	1976	1976
EU Macro-Financial Assistance Facility	100	1990	2024
EU Medium-Term Financial Assistance Facility	4	1974	1985
EU Recovery and Resilience Facility (NGEU)	144	2021	2024
EU SURE	33	2020	2023
Economic Community of West African States (ECOWAS)	111	1973	2024
Entente Council	39	1972	1997
Eurasian Development Bank (EDB)	18	2010	2024
Eurasian Fund for Stabilization and Development	30	2010	2022
Eurofima	11	1990	2023
European Bank for Reconstruction & Development (EBRD)	3,266	1991	2024
European Coal and Steel Community (ECSC)	7	1978	1984
European Community (EC)	27,634	1969	2024
European Financial Stability Facility (EFSF)	3	2010	2012
European Financial Stability Mechanism (EFSM)	3	2010	2015
European Investment Bank (EIB)	25,753	1959	2024
European Monetary Fund (EMF)	38	1959	1972
European Payments Union (EPU)	74	1948	1958
European Stability Mechanism (ESM)	3	2012	2015
European Union	718	1991	2017

Table A2: Coverage of multilateral creditor institutions

Creditor entity	N	First year	Last year
Fondo Latino Americano de Reservas (FLAR)	52	1978	2021
Fund for Implementation of Montreal Protocol	36	1992	2009
Global Environment Facility (GEF)	2,146	1991	2024
Global Fund to Fight Aids, Tuberculosis and Malaria (GFATM)	2,046	2002	2024
Global Green Growth Institute (GGGI)	28	2013	2013
Green Climate Fund (GCF)	221	2015	2024
Inter-American Development Bank (IADB)	7,827	1961	2024
International Fund for Agricultural Development (IFAD)	4,065	1978	2024
International Monetary Fund (IMF)	1,530	1952	2024
Islamic Development Bank (ISDB)	4,077	1976	2024
Joint UN Programme on HIV/AIDS (UNAIDS)	2,309	2001	2018
League of Nations	14	1923	1934
New Development Bank	4	2019	2019
Nordic Development Fund (NDF)	208	1989	2020
Nordic Investment Bank (NIB)	89	1979	2015
North American Development Bank (NADB)	396	1996	2024
OPEC Fund for International Development (OFID)	2,486	1976	2024
Organization for Security and Co-operation in Europe (OSCE)	723	2010	2020
Plata Basin Financial Dev. Fund (FONPLATA)	69	1979	2024
Trade and Development Bank (TBD)	17	1991	2023
United Nations Children's Fund (UNICEF)	93,478	2000	2018
United Nations Development Programme (UNDP)	40,035	1999	2022
United Nations Peacebuilding Fund (UNPBF)	588	2016	2020
United Nations Population Fund (UNFPA)	37,207	2001	2024
West African Development Bank (BOAD)	251	1977	2024
World Bank IBRD	8,793	1947	2024
World Bank IDA	10,088	1961	2024
World Food Programme (WFP)	562	2019	2019
World Health Organization (WHO)	22,136	2011	2018

Notes: This table shows the number of multilateral lending transactions by multilateral creditor entity. Column 2 gives the number of official loans and grants that a given entity has extended, Column 3 and 4 show the first and the latest year with a transaction in our database.

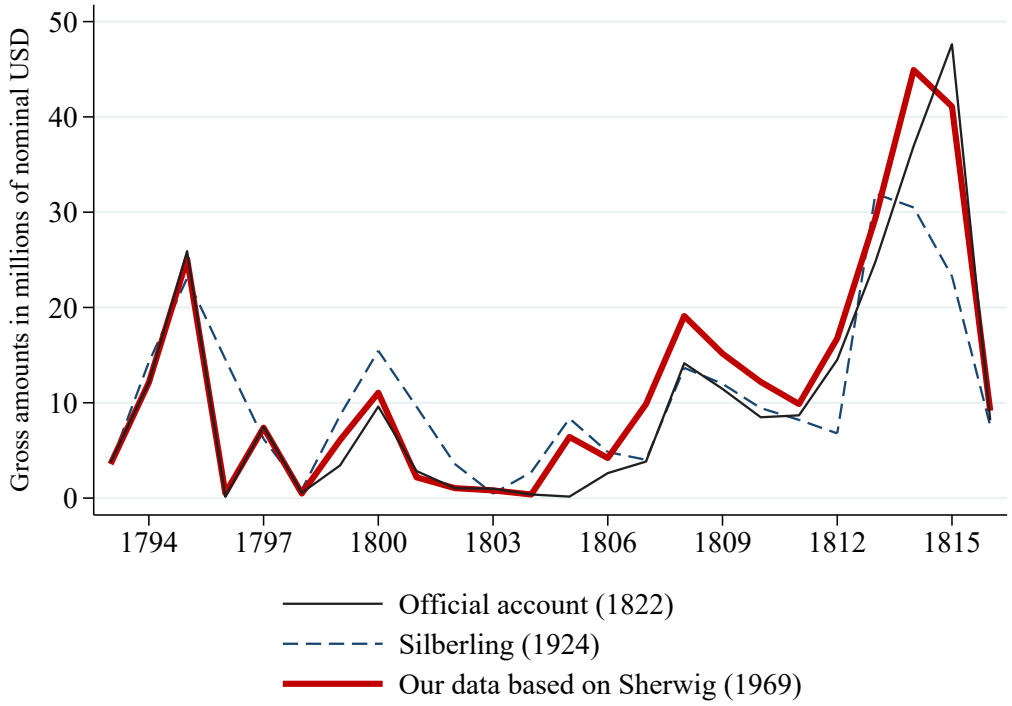
A.7 Selected data validation and robustness tests

An inevitable issue in the construction of long-run time series from different sources is the need to reconcile conflicting information across different sources. As part of our data collection strategy and as described above, we make use of different primary and secondary sources to cross-check our data collection for completeness and accuracy and to identify and fill potential coverage gaps. This subsection illustrates this procedure by presenting selected comparison and benchmarking exercises.

A.7.1 War Lending during the French Revolutionary and Napoleonic Wars, 1793-1816

Britain's foreign military aid to its Continental allies during the military campaigns against France has been documented in several historic accounts. Figure A2 illustrates measurement differences in the total annual provision of loans and subsidies across three of these accounts.

Figure A2: British foreign military aid, 1793 to 1816



Note: This figure shows gross official commitments through grants, loans and guarantees during the French Revolutionary and the Napoleonic Wars according to different academic and official sources.

The black solid line represents the official account as published by the House of Parliament in 1822, whereas the red and the blue dashed lines show the measurement attempts by economic historians Silberling (1924) and Sherwig (1969) more than one century later. A close examination of the different sources reveals the most important reasons for the existing discrepancies: in addition to differences in the exchange rates used, Sherwig (1969) argues on the basis of comprehensive archival research that the British government paid additional subsidies to foreign allies without obtaining parliamentary approval. Such lending, often financed through Secret Service funds, is omitted from the official

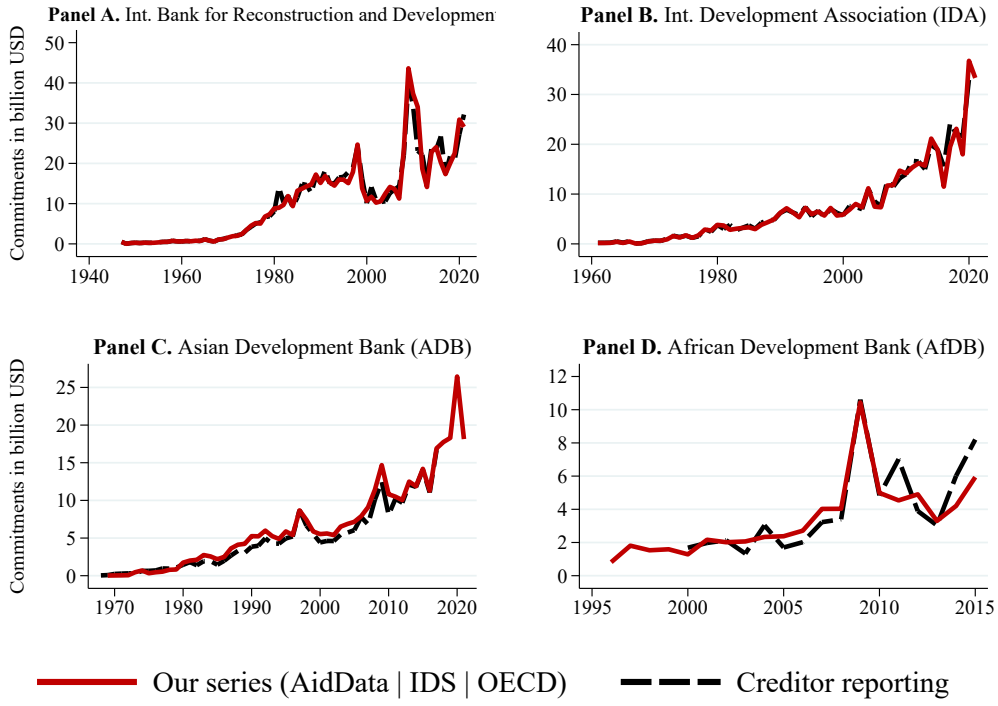
parliamentary account that was published in 1822. Rather than relying on the official account, our own data compilation therefore closely follows the numbers compiled by Sherwig (1969). Most importantly, perhaps, the comparison of these sources shows that while discrepancies are sizeable in some years, the overall magnitude of lending is highly similar across the different sources. Indeed, we can confirm that all of the conclusions drawn in the paper are robust to using any of the available time series.

A.7.2 Multilateral development lending, 1970-2020

For selected creditor entities and starting from around 1970, there exist multiple primary and secondary data sources that allow us to quantify official lending volumes. As described above, our preferred approach combines data on loans reported by debtor countries (in particular through the World Bank's IDS) with data on grants from the OECD Creditor Reporting System and existing academic research (Tierney et al., 2011). In addition, several development lenders disseminate detailed creditor statistics through their own websites and annual reports, for example the World Bank or regional development banks such as the Asian Development Bank or the African Development Bank. These additional creditor-reported sources allow us to test our preferred approach for its accuracy and completeness. Figure A3 illustrates the corresponding comparison and confirms that our series closely matches independently reported creditor records.[20]

[20]Differences between the series can be caused by the use of different exchange rates and by different definitions of fiscal years, among other factors.

Figure A3: Multilateral development lending: Benchmarking against creditor reports



Note: This figure shows gross official commitments through grants, loans and guarantees by different multilateral creditors that publish sufficiently detailed lending data to allow for comparison with other sources. All series are given in billions of nominal USD.

A.7.3 Bilateral lending

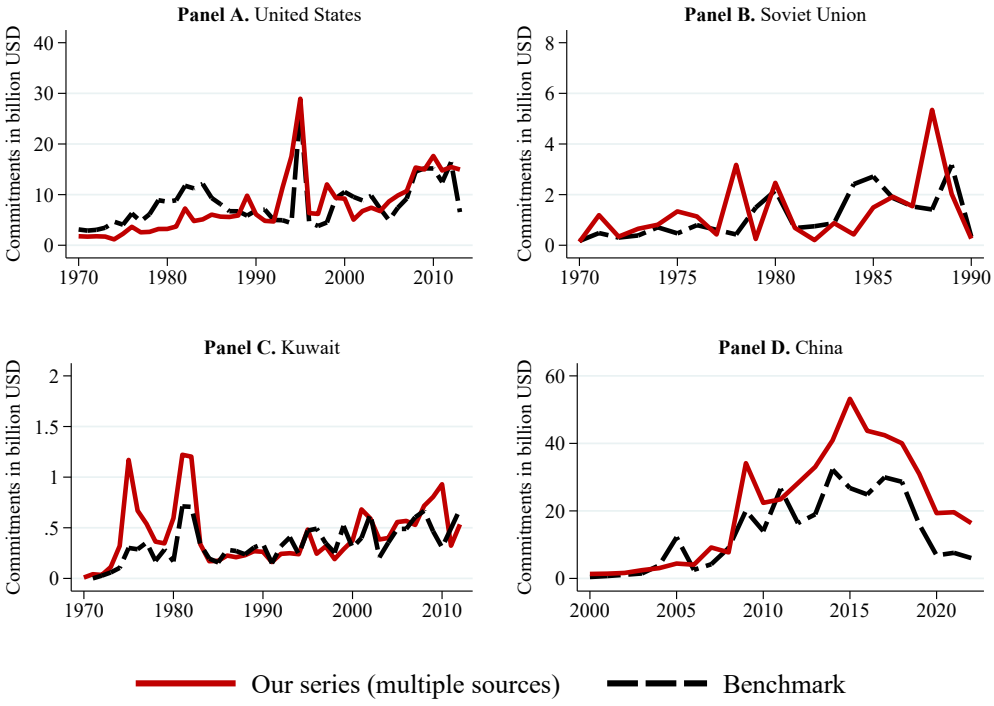
Similar comparison exercises can be carried out for a limited number of bilateral lenders. Again, our preferred approach of data collection is to combine data on loans reported by debtor countries through the World Bank International Debt Statistics with data on grants from the OECD Creditor Reporting System and existing academic research (Tierney et al., 2011). For several creditor countries, the resulting time series can be compared with direct creditor statistics and existing research by academic researchers or intelligence agencies.

For US bilateral lending, for example, there exist comprehensive creditor statistics published by US AID (the so-called GreenBook of Overseas Loans and Grants) and the US Treasury. Similarly, the Kuwaiti Government publishes detailed records of the overseas lending activities of its Kuwait Fund for Arab Economic Development. For countries of the Sino-Soviet Bloc and for China, official lending activities have been tracked by the US Central Intelligence Agency (CIA) and by academic researchers, e.g., by AidData (Parks et al., 2025).

Figure A4 shows the corresponding comparisons. In each panel, the alternative data series show highly similar orders of magnitude and highly correlated dynamics over time. This is in particular the case

for the US and Kuwait that publish transparent creditor statistics.[21] For those creditors that do not disseminate official creditor statistics, such as China or the Soviet Union, larger discrepancies exist between debtor reported transactions and the reports of third parties (also see Horn et al. (2021) or Horn et al. (2024)). In such cases, and as described in Section A.4 above, we consult secondary sources to fill coverage gaps and to reconcile differences. Panel D demonstrates this for the case of Chinese lending: Our series that combines information from multiple sources, in particular from Parks et al. (2025), significantly exceeds the lending amounts captured in the World Bank's International Debt Statistics (the benchmark series in this case).

Figure A4: Bilateral lending, 1970 to 2020



Note: This figure shows gross official commitments through grants, loans and guarantees by different bilateral creditors for which alternative data sources exist. Each panel compares our series that is constructed from different data source (red line) with a creditor-specific alternative (black dashed line). Panel A compares our data to the so-called US Greenbook on foreign assistance. Panel B focuses on the CIA's review of Communist Aid to developing countries. Panel C shows data published on the website of the Kuwait Fund for Arab Development and Panel D shows data recorded in the World Bank International Debt Statistics. To make the series within each panel comparable we only show lending to recipient countries that are included in both data sources. All series are given in billions of nominal USD.

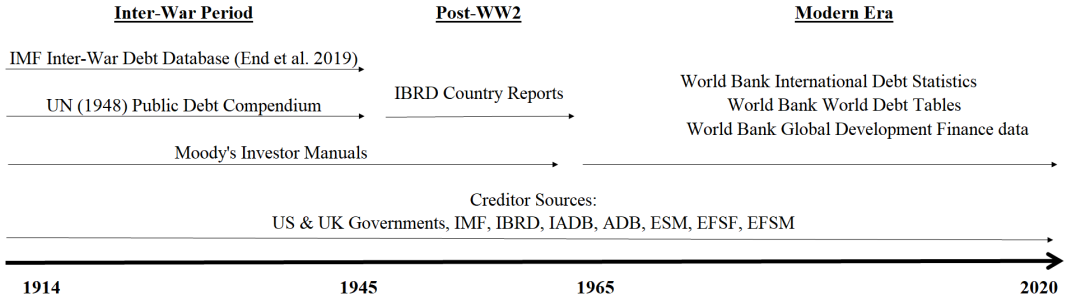
[21] In these cases, discrepancies can still arise from different definitions of official lending. Some donors, for example, report certain forms of domestic expenditure, such as administrative expenses, in their reports of international financial assistance. Others include debt relief, which we intentionally exclude from our dataset.

B Debt stocks: Debt owed to official and private creditors

Our data collection approach for the compilation of official debt *stock* data closely follows the approach outlined for official debt *flow* data above. Collecting data on outstanding debt stocks, however, is significantly more challenging given that a single lending transaction (commitment) translates into multiple years of outstanding debt, which needs to be quantified and tracked. For this reason and due to a lack of systematic data sources, we generally try to collect official debt stocks at the debtor country - year level instead of compiling loan-level data as we do for flows.

As for official lending *flows*, our database on outstanding debt *stocks* is spliced from hundreds of different data sources. While there exist several long-run datasets on total external sovereign debt stocks, none of them provide a systematic break-down into debts owed to official and private creditors (see for example Barrot (2023) or Abbas et al. (2010) for reviews of existing long-run sovereign debt datasets). The one notable exception is the World Bank's International Debt Statistics, but this source is available only from 1970 onward and only covers developing and emerging market countries. For all other debtor countries and for all other decades, information on outstanding official debt stocks needs to be compiled from different historical reports and statistical compendia. This appendix subsection gives an overview of the sources used in the construction of official debt stocks and discusses data construction, coverage and the limitations of our approach. Figure B5 sets the stage by providing a stylized summary of the sources. As in the previous subsection, we proceed by introducing each source chronologically, starting with the early 20th century.

Figure B5: Sources used to construct the database of official debt stocks, 1910 - 2024



Note: This figure provides a stylized overview of the different primary and secondary sources that we use to quantify external public debt owed to official and private creditors.

B.1 The Inter-War Period (1914-1945)

For the early sample period, we quantify external debt owed to official and private creditors by aggregating granular loan-level data obtained from historic debt reports (Moody's Investor Manual, UN public debt compendium) and from existing academic research (End et al., 2019) as follows:

- **The Inter-War Debt Database by End et al. (2019):** Our preferred source for debt stocks disbursed and outstanding in the inter-war period is the excellent compilation of external and domestic public liabilities by End et al. (2019). This source provides outstanding debt

amounts at the instrument-year level for 18 mostly advanced debtor countries. We match this source with our own data collection on official lending transactions to identify all instruments in the database that are either extended or guaranteed by official creditors and then use the information on outstanding amounts to estimate outstanding debt stocks to official creditors at the debtor country-year level.

- **The United Nations' public debt compendium 1914 - 1946:** The UN compendium contains instrument-level data for 52 developing and advanced countries on both domestic and foreign debt and we use this source to supplement the information from End et al. (2019) for additional countries. As before, we use our own data collection on official lending transactions to identify all debt instruments that are either extended or guaranteed by foreign governments and aggregate the corresponding amounts outstanding to the debtor country-year level.

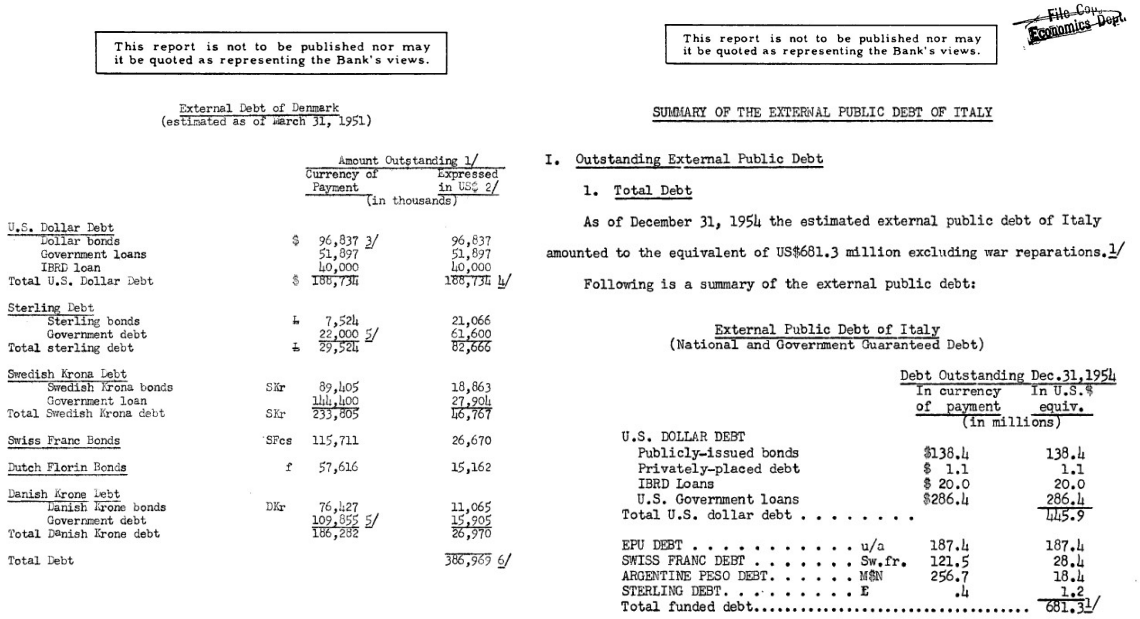
- **Moody's Manual of Investments:** The Moody's Manuals contain instrument-level data on domestic and external public debt liabilities and amounts outstanding for a large number of countries from WW1 to the 1970s. The manual was published annually and different vintages can be combined to create time series of outstanding debt at the instrument level. For the large majority of transactions, the manuals provide detailed information on the creditor entity and therefore allow to distinguish between official and private lending transactions. Systematic comparisons between our own data collection of official lending transactions and the Moody's Investment Manuals, however, suggest that coverage of debt to official creditors is incomplete, in particular for the post-WW2 era. When using this source, we therefore complement the information obtained from the Manuals with additional information from creditor sources (see below).

B.2 The Post-War Period (1946-1970)

To quantify the debt stocks to official creditors in the post-war period, we rely on the Moody's Investor Manuals described above and on a wide range of creditor sources described below. In addition, we consult a series of country-specific debt reports compiled by World Bank economists at the time.

World Bank External Debt Reports and World Debt Tables: Between 1945 and 1970, World Bank economists compiled a series of around fifty statistical reports that quantified and analyzed the external public debt position of advanced and developing countries. These reports were confidential at the time and intended for internal use only, but are currently available through the Bank's digital and onsite archives. These reports later formed the basis for the World Bank's International Debt Statistics, our main source for developing country debt stocks during the past 50 years (see below). A key advantage of this source in comparison to other debt statistics for the 1950s and 1960s is that the reports provide detailed breakdowns of external public sector debt by creditor type and thus allow to identify the amount and share of debt owed to bilateral and multilateral creditors. Figure B6 illustrates the informational content and presentation of debt data in these reports by showing exemplary reports for the external debt of Italy and Denmark. We compile the full set of available reports from the World Bank archives and use the information to create an unbalanced panel dataset of external debt to bilateral, multilateral and private external creditors for 102 countries during the period 1947 to 1970.

Figure B6: IBRD External Debt Reports - Illustration



This report is not to be published nor may it be quoted as representing the Bank's views.

External Debt of Denmark
(estimated as of March 31, 1951)

		Amount Outstanding 1/ Currency of Payment	Expressed in US$ 2/
		(in thousands)	
U.S. Dollar Debt			
Dollar bonds	$	96,837 3/	96,837
Government loans		51,897	51,897
IBRD loan		40,000	40,000
Total U.S. Dollar Debt	$	188,734	188,734 4/
Sterling Debt			
Sterling bonds	£	7,524	21,066
Government debt		22,000 5/	61,600
Total sterling debt	£	29,524	82,666
Swedish Krona Debt			
Swedish Krona bonds	SKr	89,405	18,863
Government loan		144,400	27,904
Total Swedish Krona debt	SKr	233,805	46,767
Swiss Franc Bonds	SFcs	115,711	26,670
Dutch Florin Bonds	f	57,616	15,162
Danish Krone Debt			
Danish Krone bonds	DKr	76,427	11,065
Government debt		109,855 5/	15,905
Total Danish Krone debt		186,282	26,970
Total Debt			386,969 6/

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SUMMARY OF THE EXTERNAL PUBLIC DEBT OF ITALY

I. Outstanding External Public Debt

1. Total Debt

As of December 31, 1954 the estimated external public debt of Italy amounted to the equivalent of US$681.3 million excluding war reparations. 1/

Following is a summary of the external public debt:

External Public Debt of Italy
(National and Government Guaranteed Debt)

		Debt Outstanding Dec.31,1954 In currency of payment	In U.S.$ equiv.
		(in millions)	
U.S. DOLLAR DEBT			
Publicly-issued bonds		$138.4	138.4
Privately-placed debt		$ 1.1	1.1
IBRD Loans		$ 20.0	20.0
U.S. Government loans		$286.4	286.4
Total U.S. dollar debt			445.9
EPU DEBT	u/a	187.4	187.4
SWISS FRANC DEBT	Sw.fr.	121.5	28.4
ARGENTINE PESO DEBT.	M$N	256.7	18.4
STERLING DEBT.	£	.4	1.2
Total funded debt.....			681.3 1/

Note: This figure shows excerpts from IBRD External Debt Reports for Denmark in 1951 and Italy in 1955 to illustrate the content and presentation of debt data in this source.

While these reports are the most systematic source for granular external debt data during the post-WW2 period, they come with two conceptual drawbacks that limit their consistency with sources from other eras. First, the aggregates in the reports often include undisbursed debt. While this does not lead to systematic biases in the relative shares of official and private debt, it may inflate aggregate debt stocks in comparison to the inter-war and the modern period. Second, reports were not published annually or according to a regular schedule and therefore only provide us with snapshots in different years for different countries. To account for these drawbacks, we cross-check, complement and correct the information from these sources by consulting other sources, in particular the Moody's Investor Manuals and the creditor statistics listed below.

Specifically, we make use of the following editions of the World Bank's country reports:

Andersen, Svend, and James Lynch. 1949. Summary Review of the External Debt of the United Kingdom. Report No. E 67A. Washington D.C.: International Bank for Reconstruction and Development.

Andersen, Svend, James Lynch, and William Pollock. 1949. The External Debt of Ecuador. Report No. E 66. Washington D.C.: International Bank for Reconstruction and Development.

Andersen, Svend, Martin Rosen, and Alexander Stevenson. 1947. Possibility of Foreign Lending by Countries other than the U.S. in the immediate Future. Report No. ERM 82. Washington D.C.: International Bank for Reconstruction and Development.

Fraser, William. 1951. The History and Present Position of the External Debt of the Dominican Republic. Report No. E 137. Washington D.C.: International Bank for Reconstruction and Development.

Fraser, William. 1951. The External Debt of the Kingdom of Denmark. Report No. E 147e. Washington D.C.: International Bank for Reconstruction and Development.

Gaiola, Nicola. 1955. Summary of the External Public Debt of Peru. Report No. EC 46. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1950. Public External Debt of the Belgium and Luxembourg. Report No. E 105. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1950. Preliminary Survey of the External Debt of France. Report No. E 90. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1950. Public External Debt of Ethiopia. Report No. E 107. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1950. Public External Debt of Indonesia. Report No. E 119. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1950. Preliminary Review of The External Debt of Iceland. Report No. E 126. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1950. Public External Debt of Ceylon. Report No. E 129. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1950. The External Debt of Costa Rica. Report No. E 130. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1951. Public External Debt of the Belgian Congo. Report No. E 154. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1951. Review of the External Debt of Iceland. Report No. E 170. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1952. The External Debt of Nicaragua. Report No. E 224. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1952. Summary of the External Debt of Thailand. Report No. EC 1. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1952. Public External Debt of Luxembourg. Report No. EC 4. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1954. The External Debt of Ethiopia. Report No. EC 27. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1954. External Public Debt of Greece. Report No. EC 28. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1954. The Long-Term Public External Debt of Belgium and the Belgian Congo. Report No. EC 34. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1954. The External Public Debt of Luxembourg. Report No. EC 38a. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1955. The Long-Term Public External Debt of Belgium and the Belgian Congo. Report No. EC 39. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1956. A Preliminary Review of the External Public Debt of India. Report No. EC 51. Washington D.C.: International Bank for Reconstruction and Development.

Huang, Andrew. 1956. Public External Debt of Indonesia. Report No. EC 54. Washington D.C.: International Bank for Reconstruction and Development.

IBRD. 1955. Summary of the External Public Debt of Norway. Report No. EC 42. Washington D.C.: International Bank for Reconstruction and Development.

IBRD. 1955. The External Debt of Italy. Report No. EC 44. Washington D.C.: International Bank for Reconstruction and Development.

IBRD. 1958. The External Public Debt of Yugoslavia. Report No. EA 84a. Washington D.C.: International Bank for Reconstruction and Development.

Larsen, Harold. 1949. External Credit of Brazil. Report No. E 38/49. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1950. The History and Present Position of the External Debt of Bolivia. Report No. E 95. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James and W.M. Gilmartin. 1948. Honduras' External Debt History. Report No. ERM 63. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1948. Columbia's External Debt History. Report No. ERM 122. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1948. Finland's External Public Debt History. Report No. ERM 128. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1949. Peru's External Public Debt History. Report No. E 6. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1949. Mexico's External Public Debt, Economic and Financial Causes of Debt and Debt Adjustment Plans. Report No. E 11. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1949. External Debt of Chile. Report No. E 32. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1949. Turkey's External Public Debt History. Report No. E 36/49. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1950. The History and Present Position of the External Debt of Bolivia. Report No. E 95. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1950. The History and Present Position of the External Debt of Colombia. Report No. E 96. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1950. The External Debt of Italy. Report No. E 100. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1949. The External Debt of Uruguay. Report No. E 62. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1950. External Debt of the Union of South Africa. Report No. E 108a. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1950. The External Debt of the Netherlands. Report No. E 110. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1950. The External Debt of Brazil. Report No. E 120. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1951. Summary of the External Debt of Colombia. Report No. E 150. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1951. Summary of the External Debt of Panama. Report No. E 160. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1951. The External Debt of Cuba. Report No. E 164. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1951. The External Debt of Paraguay. Report No. E 166. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1951. The External Debt of Egypt. Report No. E 168. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1951. Summary of the External Debt of Paraguay. Report No. E 198. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1952. The External Public Debt of Peru. Report No. E 216. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1952. Summary of the External Debt of Chile. Report No. E 225. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1952. The External Public Debt of Mexico. Report No. E 236. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1952. Summary of the External Debt of the Netherlands. Report No. EC 2. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1953. Summary of the External Public Debt of Turkey. Report No. EC 20a. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1953. The External Public Debt of Uruguay. Report No. EC 24. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1954. Summary of the Public External Debt of Norway. Report No. EC 29. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1954. The External Public Debt of El Salvador. Report No. EC 30. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1954. The External Public Debt of Peru. Report No. EC 32. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1954. Summary of the External Public Debt of the Netherlands. Report No. EC 36. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1954. The External Public Debt of El Salvador. Report No. EC 37. Washington D.C.: International Bank for Reconstruction and Development.

Lynch, James. 1953. The External Debt of Italy. Report No. EC 15. Washington D.C.: International Bank for Reconstruction and Development.

Finally, as a cross-check, the United Nations Yearbooks (following the format laid out by the League of Nations) report total public debt as well as the domestic and foreign breakdown (these data formed the basis for much of the Reinhart and Rogoff (2009) data set). Given the extensive capital controls that prevailed during 1947-1970, the external debt of the developing countries is almost entirely comprised of government borrowing from external official creditors.

B.3 The Modern Period (1970-2024)

Our primary source for debt stocks between 1970 and 2020 is the World Bank's International Debt Statistics (IDS) Database, which covers 121 developing and emerging countries. This database has the key advantage of providing outstanding external debt stocks by creditor type and therefore allows for direct identification of debt owed to official creditors. More specifically, in the IDS, public and publicly guaranteed external debt stocks are disaggregated into debt to bilateral creditors, multilateral creditors and private creditors (which equals the sum of debt to bondholders, commercial bank and suppliers). This source therefore gives us a readily available panel dataset of external debt to official and private creditors for over 120 countries and for 50 years.

The historical country coverage in earlier vintages of this database also includes countries that "graduated" from reporting to IDS. This includes several of today's advanced countries that borrowed heavily from the World Bank until the 1990s, such as Chile, Greece, Portugal or Spain. These countries were required to report their external debt stocks as long as they had outstanding liabilities to the World Bank, but stopped reporting after having fully repaid their World Bank debt. To maximize country coverage, we therefore do not only draw data from the latest vintage of the IDS, but also consult past vintages using data collected by Horn et al. (2024). Table B3 provides a list of the additional countries and of their first and final reporting year.

Table B3: Reporting countries added from historic vintages of the IDS

Reporting country	First year	Final year
Chile	1970	2011
Cyprus	1970	1991
Greece	1970	1988
Israel	1970	1987
Malaysia	1970	2016
Portugal	1970	1993
South Korea	1970	2001
Spain	1971	1980
Yemen Arab Republic	1970	1989
Yemen, People's Republic of	1970	1989

Notes: This table shows countries for which external debt data can be drawn from past vintages of the IDS. The second and third column show the first and final reporting year. Data for these countries is obtained from digitized vintages collected by Horn et al. (2024).

B.4 Creditor Sources

For the reasons described above, we use creditor sources for the entire 100-year sample period to cross-check and complement the information obtained from debtor sources, international organizations and statistical compendia. We focus our efforts on the most important creditor entities and on those countries and years, where the core sources provide only partial coverage. Here we list the sources by creditor entity and how we use them:

IMF: Debt to the International Monetary Fund is not included in the external debt stocks reported by the World Bank International Debt Statistics. We therefore use the IMF International Financial Statistics (IFS) to add this information. This data source spans all years between 1946 and 2024 and covers IMF claims on member countries both from GRA and from trust financed lending programs. Specifically, we make use of variable "Fund Accounts, UFC & Loans in US Dollars". It is the time series version of the regularly updated snapshot shown in `/https://www.imf.org/external/np/fin/tad/balmov2.aspx?type=TOTAL`.

World Bank: For outstanding World Bank claims, we draw data from IBRD Annual Reports. For today's developing countries this data is readily available from the World Bank's International Debt Statistics for all years 1970 to 2024, so we focus our efforts on years 1947 to 1969, for which other sources only provide an incomplete picture. This source is also highly valuable for today's advanced countries which do not report their external debt to the World Bank IDS. Today's advanced countries were the most important debtors of the IBRD after it lent large amounts for the reconstruction of Europe following WW2 and the annual reports of the IBRD allow to quantify the resulting official debts that often took until the 1980s to be fully repaid.

United States: For the largest part of the 20$^{\text{th}}$ century, the US was the single most important bilateral creditor to both developing and advanced countries. We obtain information on the foreign indebtedness to the US Government and its various lending agencies from the following sources:

- Annual Report of the Secretary of the Treasury on the State of the Finance, 1915 - 1945
- National Advisory Council on International Monetary and Financial Policies: Semi-Annual Report to the President and to the Congress, 1946 - 1995
- U.S. Foreign Credit Reporting System - Amounts Due to the U.S. Government, 1996 to 2024

United Kingdom: We use creditor statistics for bilateral debt to the UK for the Inter-War period, when the UK was a key creditor to the countries of Continental Europe, and use this information to cross-check and supplement the data we obtain from the Inter-War data sources described above. Data for the UK is taken from the *Statement of all Loans by the British Government*, as published in the Finance Accounts of the United Kingdom of Great Britain and Ireland, 1920 to 1945.

Euro Zone creditor institutions: For the governments of Cyprus, Greece, Ireland, Portugal and Spain, the new regional financial creditor institutions set up in response to the Euro Zone debt crisis became the most important official creditors. Since these countries do not report their indebtedness to the World Bank International Debt Statistics, we again rely on creditor sources to measure official debt to these institutions. Outstanding debt stocks to the ESM and the EFSF are readily available from the websites of these institutions. In their excellent databases, Arslanalp and Tsuda (2012) offer data on foreign official holdings of debt since 1989 for nearly all countries. Their data thus includes ESM and EFSF holdings. However, external official holdings also include the central bank's holdings of other countries' government securities. These holdings comprise central bank foreign exchange reserves, which are distinctly different from the overseas lending we consider in our analysis.

B.5 Data on external public debt to private creditors

In several applications we are interested not just in outstanding debt to official creditors but in comparing dynamics and magnitudes with outstanding debt to private creditors. In order to quantify debt owed to private creditors, we follow two distinct procedures:

1. Our preferred approach is to construct debt stocks owed to private creditors in the exact same way as we construct debt to official creditors. That is, we aggregate granular, loan-level debt stocks from End et al. (2019), the UN Compendium of Public Debt and from the Moody's Investor Manual for the Inter-War Period and use World Bank debt reports and the International Debt Statistics starting from WW2.
2. For some debtor countries and years, our data collection of official debt stocks relies heavily on creditor sources and it is therefore not feasible to replicate the data collection for external debt to private creditors from the same sources. In these instances, we derive external public debt owed to private creditors as a residual by subtracting external public debt owed to official creditors from the total external public debt stock of a country.

B.6 Data on total external public debt

Data on total external public debt serves two functions in our data collection. For those sources, where we can extract both debt to official and to private creditor entities, we use data on total external public

debt to compare and benchmark our external debt aggregates. For those countries, where we are only able to build series on debt to official creditor entities, we use total external public debt data to derive debt stocks to private creditors as a residual.

We use two different data sources to measure total external government and public sector debt. First, we make use of the Debt Database compiled by Reinhart and Rogoff (2009). This covers the total external general government debt for 70 countries since 1800. Second, we use the Debt of Nations database compiled by Barrot (2023). This database covers a shorter time span and only commences in 1900 but has the advantage of covering a larger cross-section of 130 countries and of providing data series not just on general government but also on external public sector debt.

B.7 Scope of official debt stock data and data limitations

Once data from all the individual sources is collected and cleaned, we merge the individual data sources into a long-run panel dataset of external public debt stocks by creditor type. Table B4 summarizes the resulting country and time coverage and Figures B7, B8 and B9 illustrate some of the long-run time series for advanced, emerging and low-income countries.

Table B4: Sample coverage for external public debt stocks by creditor type

Debtor Country	First year	Final year	Gaps?
Afghanistan	2006	2019	0
Albania	1926	2019	1
Algeria	1970	2019	0
Angola	1989	2019	0
Argentina	1920	2019	0
Armenia	1993	2019	0
Australia	1914	2024	0
Azerbaijan	1993	2019	0
Bangladesh	1972	2019	0
Belarus	1993	2019	0
Belgium	1920	2024	0
Belize	1981	2019	0
Benin	1970	2019	0
Bhutan	1981	2019	0
Bolivia	1920	2019	0
Bosnia and Herzegovina	1999	2019	0
Botswana	1966	2019	0
Brazil	1920	2019	0
Bulgaria	1981	2019	0
Burkina Faso	1970	2019	0
Burundi	1970	2019	0
Cabo Verde	1981	2019	0
Cambodia	1981	2019	0

Table B4: Sample coverage for external public debt stocks by creditor type

Debtor Country	First year	Final year	Gaps?
Cameroon	1970	2019	0
Canada	1913	2024	0
Central African Republic	1968	2019	0
Chad	1968	2019	0
Chile	1920	2011	0
China	1981	2019	0
Colombia	1922	2019	0
Comoros	1976	2019	0
Congo, Dem. Rep.	1970	2019	0
Congo, Rep.	1970	2019	0
Costa Rica	1921	2019	0
Cote d'Ivoire	1970	2019	0
Cuba	1915	1958	1
Cyprus	1965	2024	0
Denmark	1917	2024	0
Djibouti	1977	2019	0
Dominica	1981	2019	0
Dominican Republic	1965	2019	0
Ecuador	1920	2019	0
Egypt	1920	2019	1
El Salvador	1923	2019	0
Eritrea	1994	2019	0
Ethiopia	1965	2019	0
Fiji	1971	2019	0
Finland	1918	2024	0
France	1914	2024	0
Gabon	1965	2019	0
Gambia, The	1970	2019	0
Georgia	1992	2019	0
Ghana	1970	2019	0
Greece	1928	2024	0
Grenada	1974	2019	0
Guatemala	1921	2019	1
Guinea	1970	2019	0
Guinea-Bissau	1975	2019	0
Guyana	1966	2019	0
Haiti	1970	2019	0
Honduras	1920	2019	1
Iceland	1950	2024	0
India	1967	2019	0

Table B4: Sample coverage for external public debt stocks by creditor type

Debtor Country	First year	Final year	Gaps?
Indonesia	1967	2019	0
Iran	1980	2019	0
Ireland	1949	2024	0
Israel	1960	2024	0
Italy	1917	2024	0
Jamaica	1965	2019	0
Jordan	1965	2019	0
Kazakhstan	1992	2019	0
Kenya	1965	2019	0
Korea, Rep.	1965	2024	0
Kyrgyz Republic	1992	2019	0
Laos	1970	2019	0
Lebanon	1970	2019	0
Lesotho	1967	2019	0
Liberia	1965	2019	0
Macedonia, FYR	1993	2019	0
Madagascar	1970	2019	0
Malawi	1967	2019	0
Malaysia	1967	2016	0
Maldives	1978	2019	0
Mali	1967	2019	0
Mauritania	1967	2019	0
Mexico	1920	2019	0
Moldova	1992	2019	0
Mongolia	1992	2019	0
Montenegro	2007	2019	0
Morocco	1965	2019	0
Mozambique	1984	2019	0
Myanmar	1970	2019	0
Nepal	1970	2019	0
Netherlands	1920	2024	1
Nicaragua	1915	2019	1
Niger	1968	2019	0
Nigeria	1965	2019	0
Norway	1913	2024	0
Pakistan	1965	2019	0
Papua New Guinea	1975	2019	0
Paraguay	1965	2019	0
Persia	1917	1945	0
Peru	1920	2019	0

Table B4: Sample coverage for external public debt stocks by creditor type

Debtor Country	First year	Final year	Gaps?
Philippines	1965	2019	0
Portugal	1914	2024	0
Russia	1992	2019	0
Rwanda	1967	2019	0
Samoa	1970	2019	0
Sao Tome and Principe	1977	2019	0
Senegal	1965	2019	0
Serbia	2007	2024	0
Serbia and Montenegro, FRY	1993	2006	0
Sierra Leone	1965	2024	0
Solomon Islands	1978	2024	0
South Africa	1994	2024	0
Spain	1914	2024	0
Sri Lanka	1972	2024	0
St. Lucia	1981	2024	0
St. Vincent and the Grenadines	1979	2024	0
Sudan	1965	2024	0
Sweden	1949	2024	0
Tajikistan	1992	2024	0
Tanzania	1965	2024	0
Thailand	1965	2024	0
Togo	1968	2024	0
Tonga	1985	2024	0
Tunisia	1965	2024	0
Turkey	1966	2024	0
Turkmenistan	1993	2024	0
USA	1948	2024	0
Uganda	1965	2024	0
Ukraine	1992	2024	0
United Kingdom	1915	2024	0
Uzbekistan	1992	2024	0
Vanuatu	1981	2024	0
Venezuela	1965	2024	0
Vietnam	1981	2024	0
Yemen, Arab Rep.	1971	1990	0
Yemen, Rep.	1991	2024	0
Yugoslavia	1965	1992	0
Zambia	1965	2024	0

Zimbabwe	1970	2024	0

Notes: This table shows all debtor countries and years for which we have collected external public debt data by creditor type. The final column indicates whether time series has gaps between the first and the final year of data coverage.

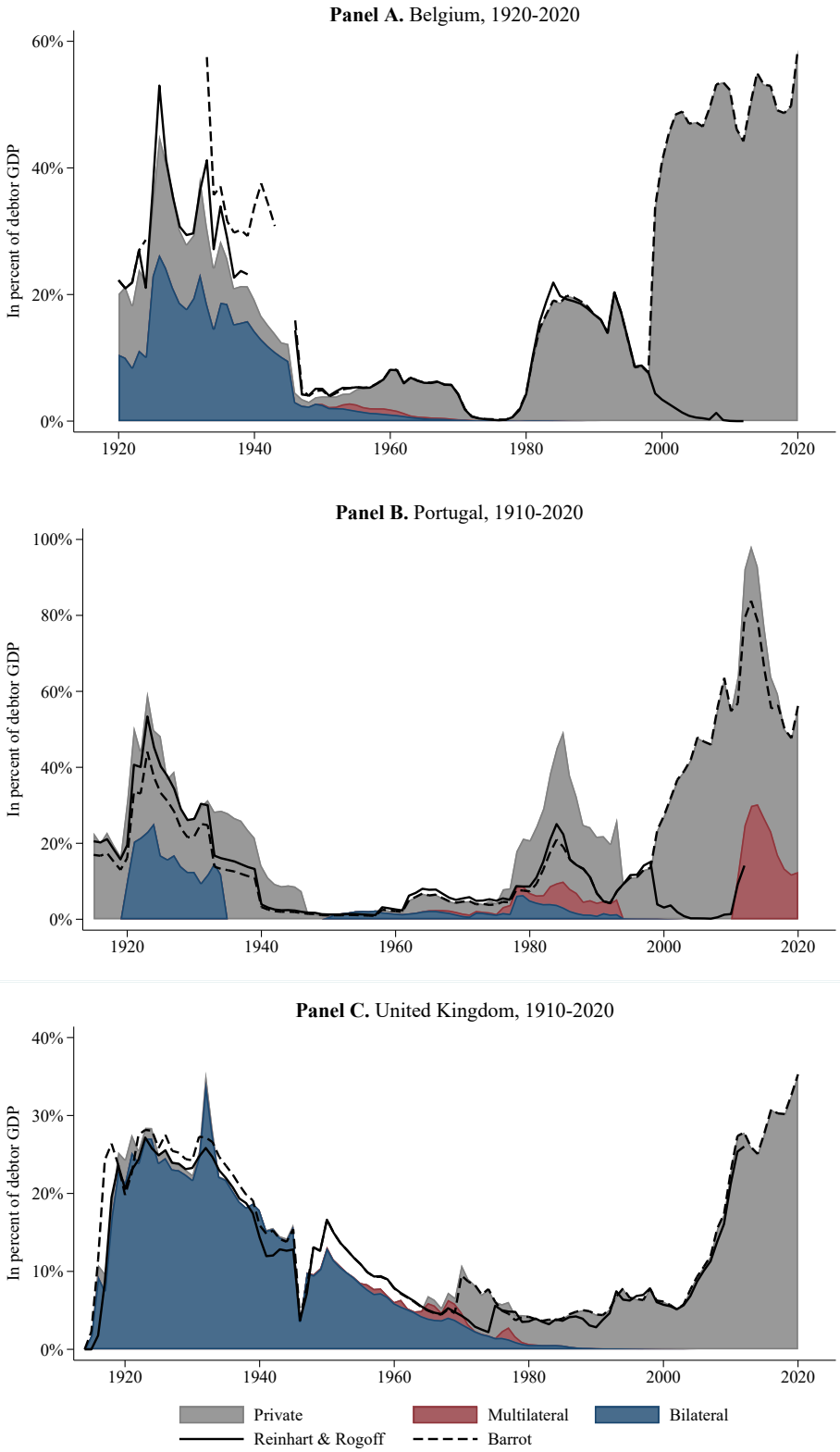
Combining data from multiple historic sources to create long-run series inevitably comes with consistency challenges given that different historical sources rely on different methodological approaches and have different underlying definitions of what constitutes external public debt. Here, we flag two important limitations of our long-run series and discuss how we ensure robustness of our core results.

- **Institutional coverage of debt:** Given that the core of our database is constructed from the World Bank's International Debt Statistics database and its predecessor reports, the majority of observations in our debt stock data set measure *public and publicly guaranteed external debt.*[22] When we draw data from other sources, we therefore target public sector debt coverage whenever possible. As Reinhart and Rogoff (2009) note, prior to the 1960s most of the reported data is for central government (in the UN public debt compendia or in the statistical reports of the League of Nations), while more modern reporting usually also includes general government. And when debt is compiled from loan-level data, e.g. from the Moody's Investor Manual or from creditor sources, coverage may be difficult to ascertain altogether.
- **Discrepancies between debtor and creditor sources:** Discrepancies also emerge when combining data from debtor and creditor reported sources and may reflect incentives of debtor countries to under-report their liabilities as well as measurement error resulting from limited statistical and institutional capacity of debtor countries (see for example Horn et al., 2024).

The potential discrepancies across time and across sources that result from these inconsistencies are wide-spread issues in the construction of long-run data series on sovereign debt (also see Reinhart and Rogoff, 2009; Abbas et al., 2010; Barrot, 2023, for discussions). To assess the potential implications of these issues, we again follow the data validation steps outlined in Sections A.1 and A.7 above. First, we compare data across sources and try to fill gaps and reconcile information whenever possible. Where discrepancies persist, we ensure that our main results are robust to using different data sources. In this context, we further emphasize that different extents of institutional debt coverage only affect the absolute magnitude of debt to official and private creditors but not their relative shares, on which our analysis in Section 4.1 is based.

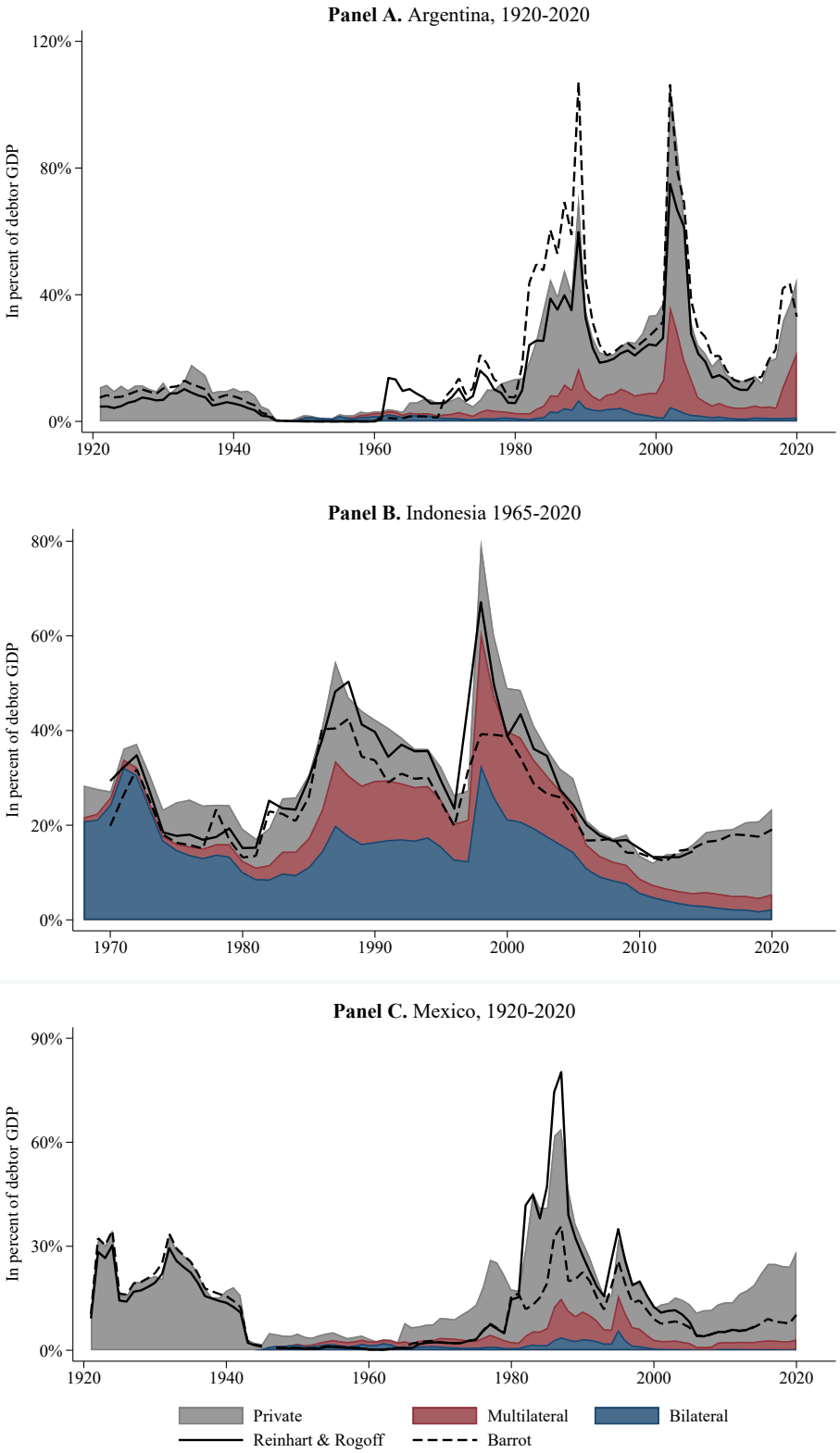
[22]Public and publicly guaranteed debt includes general government debt plus all liabilities of the public sector, i.e., liabilities of state-owned corporations, and private liabilities guaranteed by the government.

Figure B7: External public debt stock composition in selected advanced economies



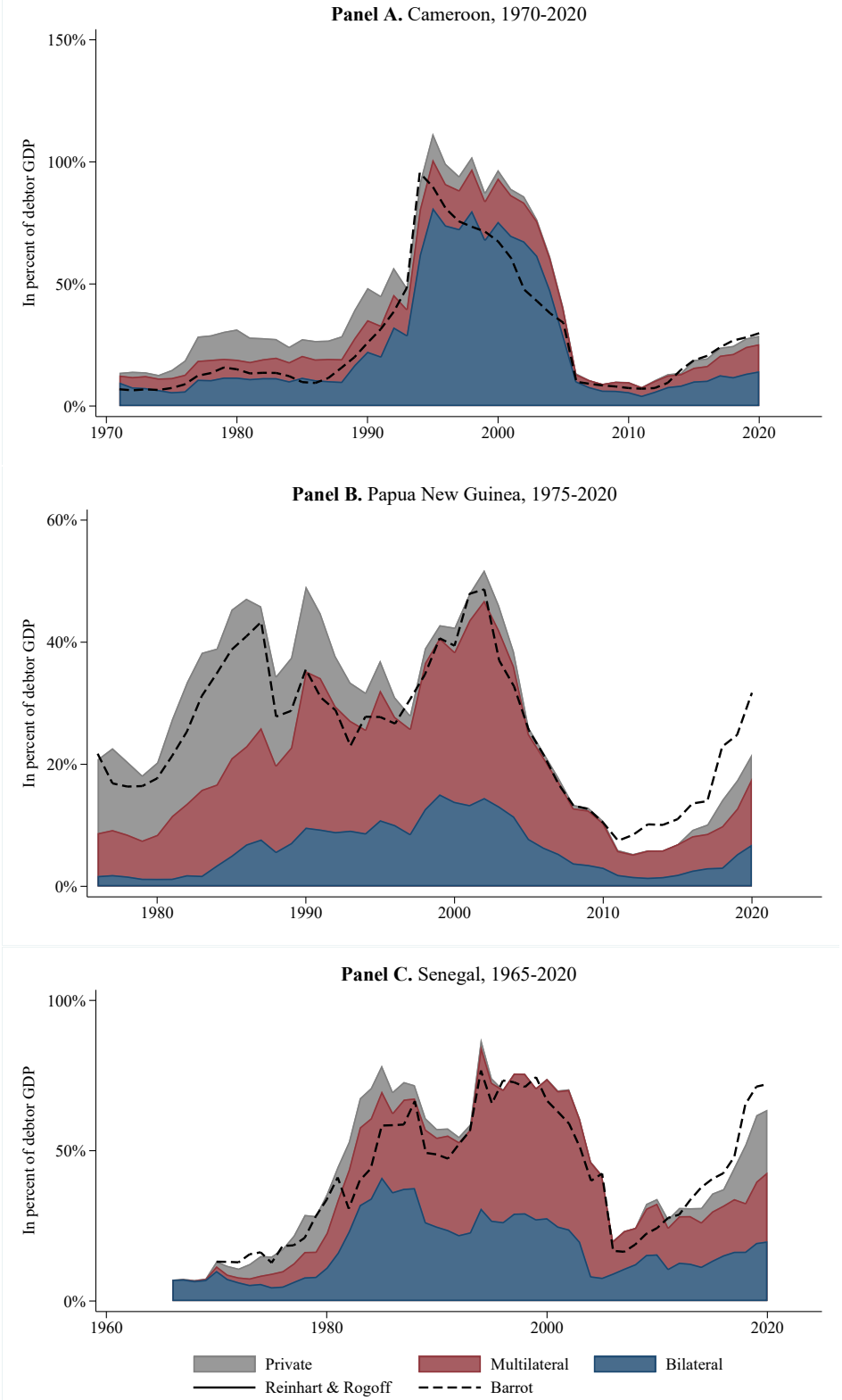
Notes: This figure shows the decomposition of external public debt in percent of debtor GDP for selected advanced economies. Blue, red and grey shaded areas show aggregate debt to bilateral, multilateral and private external creditors according to our data collection. The black solid and dashed lines present total external sovereign debt from Barrot (2023) and Reinhart and Rogoff (2009) and are shown as benchmarks.

Figure B8: External public debt stock composition in selected EMs



Notes: This figure shows the decomposition of external public debt in percent of debtor GDP for selected emerging market countries. Blue, red and grey shaded areas show aggregate debt to bilateral, multilateral and private external creditors according to our data collection. The black solid and dashed lines present total external sovereign debt from Barrot (2023) and Reinhart and Rogoff (2009) and are shown as benchmarks.

Figure B9: External public debt stock composition in selected low-income countries



Notes: This figure shows the decomposition of external public debt in percent of debtor GDP for selected low-income countries. Blue, red and grey shaded areas show aggregate debt to bilateral, multilateral and private external creditors according to our data collection. The black solid and dashed lines present total external sovereign debt from Barrot (2023) and Reinhart and Rogoff (2009) and are shown as benchmarks.

C Catalog of case studies

C.1 Defining the episodes

This appendix section describes how we define and measure wars and sovereign debt crises, and how we construct the catalog of case studies that underlies our comparison of private and official capital flows during major crises episodes in Section 2.4. We proceed as follows: Section C.1.1 explains how we define sovereign debt crises; Section C.1.2 explains how we define military conflict; and finally, Section C.2 explains how we collect data on private external capital flows for each of these episodes.

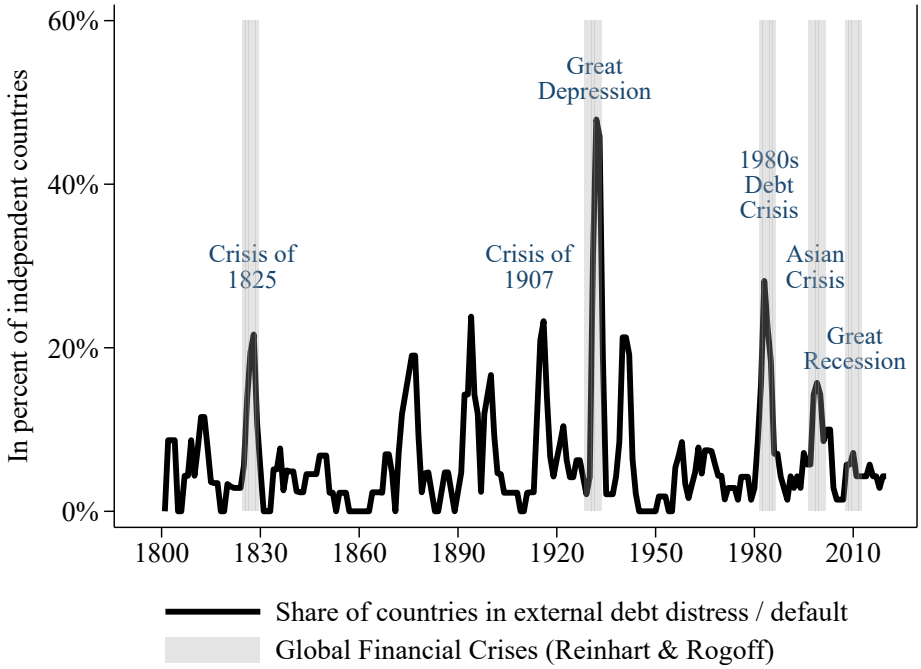
C.1.1 External sovereign debt crises

In line with the literature, our identification of external sovereign debt crises rests on two distinct criteria. First, we consider cases of outright default, i.e., missed principal and interest payments on external creditors, as measured by Reinhart and Rogoff (2009) and updated by Meyer et al. (2022). In addition, we also consider episodes of severe sovereign debt distress, measured by sharp and strong increases in sovereign bond spreads (Krishnamurthy and Muir, 2017; Aguiar et al., 2016). Specifically, we use data from Mitchener and Trebesch (2023) for 30 developing and advanced countries since 1830. Mitchener and Trebesch (2023) define a "spread crisis" if one of the following two criteria is fulfilled: (i) the sovereign bond spread of a country over US Treasuries surpasses 1000 bps. in a given quarter, (ii) the speed of a spread increase is at least in the 99^{th} percentile of quarterly spread increases. So called "spread crisis" without default have become much more prevalent over time and have come to constitute an important share of sovereign debt distress events (Mitchener and Trebesch, 2023).

While the onset of external sovereign debt crisis is thereby clearly defined, in a large number of cases the resolution of distress is much harder to date and can drag on for decades until a final resolution with creditors is reached (Reinhart and Rogoff, 2009). Of course, it is hardly credible to characterize such long default spells as disaster events and therefore seems implausible to expect persistent international support throughout such a long spell. In our main analysis, we therefore follow Reinhart and Rogoff (2009) and focus on the first three years after the onset of the default. In robustness tests presented in Appendix Section E.2, we show that none of the main conclusions of the paper is sensitive to this duration assumption.

Figure C10 shows the resulting incidence figure and plots the share of independent countries (sovereigns) in external sovereign debt distress episodes since 1800 according to our combined default and spread crisis measure. It is important to note that the denominator (of the share) rises markedly through the sample. In the early 1800s much of Latin America gains independence. The second wave of new sovereigns comes at the end of WW2, primarily in Asia; the third wave comes from Africa (mostly in the 1960s) while more recent additions date to the breakdown of the Soviet Union.

Figure C10: 200 years of external sovereign debt distress



Note: This figure shows the share of countries in an external sovereign debt distress episodes. Data is from Mitchener and Trebesch (2023), Reinhart and Rogoff (2009) and from Meyer et al. (2022). Distress episodes are assumed to last for three years.

Global debt crises: In Section 4.2, we focus our analysis on global or systemic sovereign debt crisis as defined by Reinhart and Rogoff (2009). These events are considered among the most synchronous and costly crisis events (also see Kaminsky and Vega-García (2016) or Morelli et al. (2022)). Global debt crises are distinguished from idiosyncratic and less virulent crises by four criteria:

1. At least one global financial center is mired in a severe crisis.
2. The crisis involves two or more distinct regions.
3. The number of countries in crisis in each region is three or greater.
4. The composite GDP-weighted crisis index developed by Reinhart and Rogoff (2009) is at least one standard deviation above normal.

By this definition, global debt crisis include the Crisis of 1825, the Great Depression of 1929, the Debt Crisis of the 1980s, the Asian Crisis of 1997 and the Global Contraction of 2008 with the subsequent Eurozone Debt Crisis.

C.1.2 Inter-state war

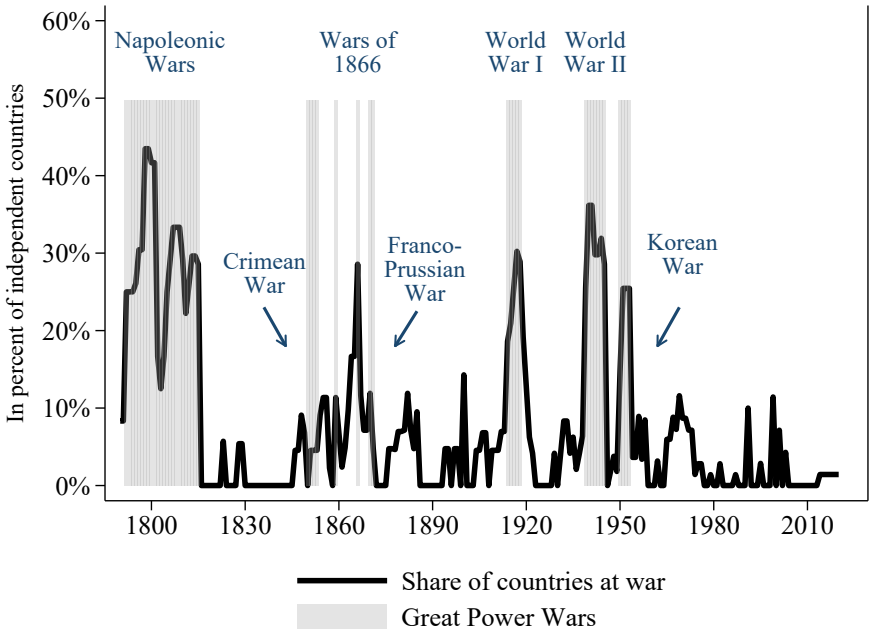
Our starting point for the identification and dating of inter-state wars is the widely used Correlates of War database, which defines inter-state wars as episodes of sustained combat between two or more

territorial states that are members of the international state system, that involve organized armed forces and that result in a minimum of 1000 battle-related fatalities over the course of a 12 months period (Sarkees and Wayman, 2010).[23] In the CoW database, war begins with the onset of sustained military combat and ends with the cessation of sustained military combat. Formal declarations of war and armistice agreements are only used as the beginning and end dates of war if they coincide with the beginning and end of military combat.

Data on inter-state military conflicts is available from the Correlates of War Project since 1816 and until 2006. As the coding of inter-state military conflicts does not cover the early 19th century and in particular the Napoleonic Wars, we extend coverage back to 1790 and update the data to 2020. For the late 18th and the early 19th century we rely on the Conflict Catalogue compiled by Brecke (1999). To update the dataset to 2020, we rely on the data collected by the Uppsala Conflict Data Program (UCDP) (Davies et al., 2023).

Figure C11 illustrates our compiled data on inter-state wars by plotting the incidence of war and associated fatalities over the 200 year horizon of our sample.

Figure C11: Incidence of inter-state military conflict, 1790 - 2020



Note: This figure shows the share of sovereign countries involved in inter-state wars for any given year since 1790 (black dashed line, left scale) as well as the incidence of Great Power Wars (grey shaded areas).

Defensive wars: In our analysis of international capital flows, we further limit the sample of inter-state wars to defensive wars, since these episodes most closely mimic the concept of national emer-

[23]The CoW database also provides data on intra-state (or civil) wars, which are defined by sustained military combat within a state and with active participation of the national government. Due to their primarily domestic character, we do not consider civil wars in our study of international official flows. Selection of civil wars would not be trivial as some are a strictly domestic affairs while other civil wars have a distinct "proxy war" nature, as major powers may provide support for opposing combatants.

gencies, the response to which we are trying to analyze. In order to qualify as a *defensive war*, a war needs to fulfill the following two conditions for a participating country:

- The war needs to be initiated by the opponent.
- The war needs to be fought on the country's own territory, i.e. its territory is attacked during the course of the war.

During the Korean War, for example, we are interested in studying international lending to Korea, but not to the United States or France, although both countries were also formal parties to the conflict. Data on both conditions can be inferred from the Correlates of War Database and the Conflict Catalogue by (Brecke, 1999).

Great Power Wars: In Section 4.2, we focus our analysis on Great Power Wars, which historically have been the most destructive and deadly instances of inter-state warfare. To measure Great Power involvement in inter-state conflicts, we follow the widely-used definition of Great Powers introduced by Levy (1983) and reproduced below. Great Powers are those states which *"possess a high level of power capabilities, which provide for reasonable self-sufficiency in security matters and permit the conduct of offensive as well as defensive military operations; participation in international congresses and conferences; de facto identification of a Great Power by an international conference or organization; admission to a formal or informal organization of Powers; participation in Great Power guarantees, territorial compensation, or partitions; and, generally, treatment as a relative equal by other Great Powers (for example, protocols, alliances, negotiations, and so forth)."*

During our sample period, the following sovereigns qualify as Great Powers:

- Austria / Austria-Hungary (1790-1918)
- China (1950-2020)
- France (1790-2020)
- Prussia / Germany (1790-2020)
- Japan (1905-2020)
- Russia / Soviet Union (1790 - 2020)
- United Kingdom (1790 - 2020)
- United States (1898 - 2020)

On the basis of this list, Great Power Wars can be defined as all inter-state wars with direct warfare between two or more Great Powers. Great Power Wars are rare. Since 1790, there have been nine cases of Great Power War: The French Revolutionary Wars (1792-1802), the Napoleonic Wars (1803-1815), the Crimean War (1853-1856), the War of Italian Unification (1859), the Austro-Prussian War (1866), the Franco-Prussian War (1870-1871), the First World War (1914-1918), the Second World War (1939-1945) and the Korean War (1950-1953).

C.2 Data on private capital flows

Our paper also gathers rich new data on private capital flows and bond issuances since 1790 in order to facilitate the comparison of official and private lending with a focus on major disaster episodes. Specifically, we focus on 36 global debt crisis and 35 Great Power War episode since 1790 for which we can gather sufficiently comprehensive data and that we analyze in detail in Section 4.2.

To identify and select cases, we follow the definitions of Great Power Wars and global debt crises presented in Appendix Section C.1 and collect private international lending data for each defensive inter-state war and each sovereign debt crisis within these disaster episodes (see Tables C5 and C6). For each of the identified war or crisis episode, the two tables list the main sources from which we collect data on cross-border lending by private creditors. Data from these main sources are cross-checked and supplemented with information from several country or episode-specific sources. We list these sources below and provide detailed information on the content and coverage of our main data sources.

Table C5: Global Debt Crises

	Crisis onset	Sources for private capital flows
The Crisis of 1825		
Spain	1824	Reinhart et al. (2016, 2017)
Colombia	1826	London Stock Exchange Yearbooks
Chile	1826	(multiple years)
Greece	1826	Kaminsky and Vega-García (2016)
Peru	1826	Reinhart and Trebesch (2015)
Argentina	1828	Fenn's Compendium (multiple years)
Mexico	1827	Fortune's Epitome (multiple years)
The Great Depression 1931		
Austria	1931	
Germany	1931	League of Nations (1943)
Hungary	1931	League of Nations MoPF (multiple years)
Poland	1931	United Nations (1948)
Finland	1931	Moody's Investor Manual
Greece	1931	(multiple years)
Bulgaria	1931	End et al. (2019)
Estonia	1931	Meyer et al. (2022)
Debt crisis of the 1980s		
Mexico	1982	World Bank World Debt Tables
Argentina	1982	World Bank Borrowing in Int.
Brazil	1983	Capital Markets
Ecuador	1982	(multiple years)
Nigeria	1982	World Bank International Debt Statistics
Philippines	1982	(multiple years)
Bolivia	1980	Horn et al. (2024)
Egypt	1984	BIS International Debt Securities
Costa Rica	1981	Statistics (multiple years)
Cote d'Ivoire	1983	
Morocco	1983	
"Asian" Crisis 1997-1998		
Indonesia	1998	World Bank International Debt Statistics
Brazil	1998	(multiple vintages)
Philippines	1998	BIS International Debt
Russia	1998	Securities Statistics
Ukraine	1998	(multiple years)
Ecuador	1998	
The Global Crisis of 2008 (with Eurozone Crisis)		
Russia	2008	BIS International Debt
Greece	2010	Securities Statistics
Ireland	2010	(multiple years)
Portugal	2011	

Table C6: Great Power Wars

	Onset of War	Sources for private capital flows
French Revolutionary & Napoleonic Wars		
Austrian Empire	1792	Riley (1980), van Bochove (2014)
Prussia	1792	Buist (1974), Marnei (2015), Krug (1861)
Spain	1792	von Hoffmann (1896)
Portugal	1792	Fenn's compendium (multiple years)
Russian Empire	1798	London Stock Exchange Yearbooks (multiple years)
Sweden	1805	
Crimean War		
Ottoman Empire	1853	SEY (multiple years) Fenn's compendium (multiple years) Fortune's Epitome (multiple years)
War of Italian Unification		
Italy	1859	SEY (multiple years) Fenn's compendium (multiple years) Fortune's Epitome (multiple years)
Austro-Prussian War		
Austrian Empire	1866	SEY (multiple years) Fenn's compendium (multiple years) Fortune's Epitome (multiple years)
Franco-Prussian War		
Prussia	1870	SEY (multiple years) Fenn's compendium (multiple years) Fortune's Epitome (multiple years)
World War 1		
Yugoslavia	1914	League of Nations (1943)
Russia	1914	Moody's Investor Manual (multiple years)
United Kingdom	1914	United Nations (1948)
Portugal	1916	Strachan (2004)
Belgium	1914	Stone (1999)
Greece	1917	Fisk (1924)
Romania	1916	
France	1914	

	Onset of War	Sources for private capital flows
Italy	1915	
World War 2		
United Kingdom	1939	League of Nations (1943)
United States of America	1941	Moody's Investor Manual (multiple years)
USSR	1941	United Nations (1948)
China	1937	Reinhart and Trebesch (2015)
Mongolia	1945	Kao (1946), Young (1963)
Greece	1940	End et al. (2019)
Yugoslavia	1941	Reinhart and Trebesch (2015)
Ethiopia	1941	
France	1940	
Belgium	1940	
Norway	1940	
Netherlands	1940	
Poland	1939	
Hungary	1941	
Finland	1939	
Korean War		
South Korea	1950	IBRD country reports (multiple years) Moody's Investor Manual (multiple years)

RRT Global Capital Flow Database: Reinhart et al. (2016, 2017) offers the most comprehensive compilation of long-run private capital flow data. Their dataset covers years 1815 to 2015 and therefore a similar time horizon than our study of official capital flows. Their measure of total global net and gross capital flows builds on different data sources and concepts. For the 19th century, their measure aggregates gross bond issuances in the main financial centers of the time and gross capital exports from the UK, as measured by Stone (1999).[24] We build on this data collection and expand it for a larger set of borrowing countries and years. To code international sovereign bonds issued in international capital markets during the 19th century, mainly on the London Stock Exchange, we make use of the following data sources.

- Clarke, Hyde. (1878). Sovereign and Quasi-Sovereign States: Their Debts to Foreign Countries. *Journal of the Statistical Society*, June 1878.
- Corporation of Foreign Bond Holders. Annual Reports: 1873-1914.
- Fenn, Charles (Various years). *Fenn's compendium of the English and foreign funds, debts and revenues of all nations.* London: E. WIlson.

[24]For all years post-WW1 they construct a net capital flow measure based on the balance of payments identity which connects net capital flows to current account balances and changes in foreign exchange reserves.

- Fortune, Thomas (Various years). *Fortune's Epitome of the Stock and Public Funds.* Various years. London: Boosey & Sons.
- Kimber, Albert (1922). *Kimber's Records of Government Debts and other Foreign Securities.* New York: A. W. Kimber & Company.
- Lindert, Peter H. and Morton, Peter J. (1989). How Sovereign Debt Has Worked. In Jeffrey Sachs (Ed.), *Developing Country Debt and Economic Performance.* NBER and University of Chicago Press.

Primary sovereign bond issuance in Amsterdam 1780 - 1820: In our case study of private and official capital flow movements prior and during the French Revolutionary and Napoleonic Wars, we examine the foreign sovereign bond issuance in the Amsterdam Capital Market between 1780 and 1820. For this market and period, no readily available data on capital exports is available. A time series of annual capital exports to European sovereigns, however, can be estimated from the rich historic accounts of the Amsterdam Capital Market written by Riley (1980) and Buist (1974). Specifically, we code all instances of primary sovereign bond issuance from the detailed case studies that Riley (1980) presents on government borrowing by Austria, Denmark, France, Germany, Poland, Russia, Spain and Portugal and the detailed data appendix presented in Buist (1974).

League of Nations (1943): To compare official and private capital flows in the inter-war era, we rely on a statistical report on capital movements in Europe published by the League of Nations (1943). This report provides estimates of the aggregate annual bond issuance by 28 European debtor countries in the financial centers of the main capital exporting countries of the inter-war period (the US, the UK, France, the Netherlands, Switzerland and Sweden). These statistics include bond issuance by both the private and the public sector, namely by central and provincial governments, by municipalities and by private corporations and covers years 1919 to 1932.

World Bank International Debt Statistics and World Debt Tables: The World Bank's International Debt Statistics provide debtor reported data on outstanding public and publicly guaranteed debt stocks and lending for around 120 developing and emerging countries since 1970. As noted above, data is available for both stocks and flows, and by creditor type. This allows to trace loan commitments by private creditors at the debtor-year level. More specifically, we make use of private commitment (series codes "DT.COM.PRVT.CD") which includes lending by bondholders, commercial banks, and other private creditors such as suppliers.

To increase country and year coverage, we do not just extract data from the most recent release of the data, but also draw on earlier vintages of the World Bank's debt statistics, including the Global Development Finance reports and the World Debt Tables (using data collected by Horn et al. (2024)).

BIS International Debt Securities Statistics: For several modern episodes, we rely on the International Debt Securities Statistics compiled by the Bank for International Settlements. This dataset captures gross security issuance by non-residents and is therefore directly comparable to our definition of official cross-border lending commitments. This data is only available since the 1990s and can therefore not be used for a longer run comparison of official and private capital flows. More specifically, we construct our measure of private capital flows from this source by aggregating at the

country and year level all bonds issued by public sector entities, in all currencies, across all interest rate types, and with maturities larger than one year.

Country and episode-specific studies: As for official loans, we cross-check and complement the data extracted from these sources by consulting dozens of country or episode-specific works. These sources include:

- Clay, Christopher (2001). *Gold for the Sultan: Western Bankers and Ottoman Finance 1856-1881.* London: I.B. Tauris.
- Kao, Ping-Shu (1946). *Foreign Loans to China.* New York: Sino-International Economic Research Center.
- Krug, Leopold (1861). *Geschichte der Preussischen Staatsschulden.* Breslau: Verlag von Edward Trewendt.
- Landes, David (1958). *Bankers and Pashas: International Finance and Economic Imperialism in Egypt.* Cambridge, MA: Harvard University Press.
- Lewis, Cleona (1938). *America's Stake in International Investments.* Washington D.C.: Brookings Institution.
- Marichal, Carlos (1989). *A Century of Debt Crises in Latin America.* Princeton: Princeton University Press.
- Miller, M.S. (1926). *The Economic Development of Russia, 1905-1914.* London: King and Son Ltd.
- Reinhart, C. M. and Trebesch, C. (2015). The pitfalls of external dependence: Greece, 1829-2015. *Brookings Papers on Economic Activity*, 2, 307–328.
- Stallings, Barbara (1987). *Banker to the Third World: US portfolio investment in Latin America, 1900-1986. Vol. 18.* University of California Press.
- Van Bochove, Christiaan (2014). External debt and commitment mechanisms: Danish borrowing in Holland, 1763-1825. *The Economic History Review*, 67(3), 652-677.
- Von Hoffmann, Otto (1896). *Die Pressische Hauptverwaltung der Staatsschulden vom Jahre 1820 bis 1896.* Berlin: Ernst Siegfried Mittler und Sohn.
- Young, Neil. 1963. *China and the Helping Hand, 1937-1945.* Cambridge, MA: Harvard University Press.
- Ziegler, Philipp (1988). The Sixth Great Power: Barings 1762-1929. London: Collins.

Data on loan terms of private cross-border lending:

In Section 4.3, we compare the financial terms of official lending to those of private lending transactions. For the purpose of this comparison, we collect data on the interest rates and the time to maturity of private cross-border lending from two distinct sources.

Meyer, Reinhart, and Trebesch (2022): Our key source for foreign bond issuance is the 200-year study of international sovereign bond markets by Meyer et al. (2022). Their data set covers all 1,552 sovereign bonds issued by foreign governments in London and New York with fixed interest rates and maturities of at least one year. Our measure for the interest rates on private cross-border lending is constructed as the issuance yield, that is the yield to maturity at the time of issuance.

World Bank Reports on the Syndicated Lending Market: During years 1976 and 1987, the World Bank published detailed annual reports on "Borrowing in International Capital Markets - Foreign and International Bond Issues and Publicized Eurocurrency Credits". These accounts provide detailed transaction-level information on the financial terms of syndicated loans and thus help us to complement the information on bond yields extracted from Meyer et al. (2022).

D Control variables and other measures of interest

D.1 Economic and financial exposure measures

Our gravity model of official cross-border lending relies on three distinct measures of bilateral exposure that proxy the economic and financial importance of the debtor country to the creditor economy. We define our exposure measure as

$$Bil.Exposure_{i,j,t} = \frac{Exposure_{i,j,t}}{\sum_{i=1}^{N} Exposure_{i,j,t}}$$

where $Exposure_{i,j,t}$ denotes the bilateral exposure between debtor country i and creditor country j in year t. Our measure therefore captures creditor country j's claims towards debtor country i as a share of creditor country j's claims towards all debtor countries. In other words, our measure captures the relative importance of debtor country i to creditor country j at a given point in time. We use three distinct data series to construct our measure.

Trade exposure from TradHist: Our primary measure uses nominal trade flow data to measure the importance of the debtor economy to the creditor economy. Bilateral exposure is defined as the sum of imports and exports and all data is from the Tradhist project (Fouquin and Hugot, 2016). In line with the above definition, this variable measures the bilateral trade between debtor country i and creditor country j as a share of country j's total trade with all countries. Data is available since 1827.

Private creditor exposure from World Bank IDS: In the regressions presented in Appendix Section E.2, we construct private sector exposure to a sovereign debtor from the World Bank's International Debt Statistics. Our exposure measure is defined as the total disbursed and outstanding public and publicly guaranteed liabilities of debtor country i to all private creditors in creditor country j (series code DT.DOD.PRVT.CD by counterparty country). In the IDS, private creditors include bondholders, commercial banks and other private credits from manufacturers, exporters, and other suppliers of goods and services. Debt includes long-term instruments with initial maturities of more than one year, denominated in all currencies and is given at nominal values. This series starts in 1970.

Banking exposure from BIS Consolidated Banking Statistics: Our third measure of bilateral economic exposure focuses on the country exposure of the banking sector and comes from the Bank for International Settlements Consolidated Banking Statistics. Our variable measures the bilateral claims of the domestic banking sector in creditor country j on all counterparties (banks and non-banks) in debtor country i. We include claims from all instruments, all maturities and all currencies as reported by banks in the creditor country on an immediate counter-party basis. Time coverage varies by reporting country but is available starting from the 1990s in most countries.

D.2 Other dyadic variables used in the gravity model

Distance: Our measures of geographic, bilateral distance are taken from the TradHist project (Fouquin and Hugot, 2016). Our preferred measure is a population weighted mean of the distance between the creditor country and the debtor country (*"distw"*; see Mayer and Zignago (2011) for details), but all results are robust to using different measures of geographic distance, e.g., the geographic distance between capitals or shortest maritime distance between two countries.

Regime type and political distance: To measure regime type and to calculate the "political distance" between two countries, we rely on data from the Polity Project. Specifically, we use a composite measure of political regime characteristics from the Polity5 dataset (variable "polity2"). This measure summarizes autocratic and democratic characteristics of a political regime and assigns a unified score on a range from -10 (strongly autocratic) to +10 (strongly democratic). In our gravity model of cross-border official lending, we use this variable to create a "political distance" measure that is defined as the absolute distance between the polity2 regime type of the creditor and the debtor country. This variable has the great advantage of being uniformly available for independent states since 1800.

Cultural proximity: To account for cultural proximity between creditor and debtor countries and to proxy for variations in enforcement costs and informational asymmetries, we again use data from the TradHist project (Fouquin and Hugot, 2016). More specifically, we rely on two distinct but highly correlated dummy variables to measure cultural and linguistic ties between two countries: Our first measure is equal to one if at least one language is spoken by 9 percent of the population in both countries (variable *Comlang* in the TradHist database). Our alternative measure is equal to one if the two countries share a colonial history, i.e., if one of the countries was a colony of the other country at some point in the past (variable *EverCol* in the TradHist database). Data is available since 1827.

Alliances: Our measure of formal alliances is drawn from the Correlates of War Project. Specifically, we consider a country pair an alliance if at least one of the following two conditions is fulfilled:

- The two countries have signed a formal defense pact or entente agreement as measured by Singer and Small (1966), Gibler and Sarkees (2004) and Gibler (2009). In a defense pact, states commit to intervene militarily on the side of any treaty partner that is being attacked. In an entente agreement, countries pledge consultation and / or cooperation in a national emergency such as an armed attack (Gibler and Sarkees, 2004).
- The two countries fight on the same side of an inter-state war as measured by Sarkees and Wayman (2010).

This data is available since 1816 and until 2012.

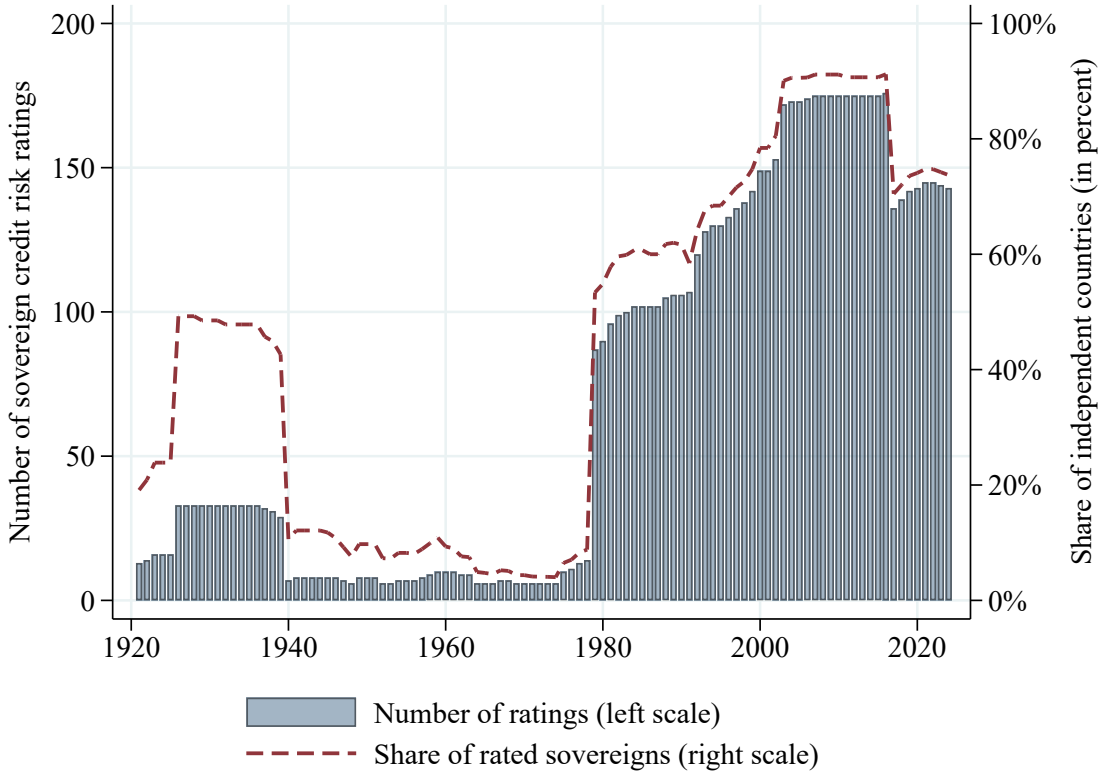
D.3 Credit Ratings

To study the correlation of private and official loan terms with recipient country credit risk, we rely on a comprehensive database of country risk ratings that spans much of the 20th century. The data combines the sovereign credit risk ratings of major rating agencies such as Moody's, Standard & Poor's

and Fitch and country risk assessments published by Institutional Investor Research (II Research). To ensure comparability across rating scales and sources, all ratings are mapped to a numerical scale from -4 to 20 following the approach of Reinhart et al. (2017). For countries and years, for which there is more than one credit rating available, we calculate an unweighted average of available ratings across different agencies.

Our starting point for data collection are the credit ratings compiled by Reinhart et al. (2017), which cover the modern era since roughly 1980. With few exceptions (included in our sample), sovereign credit ratings were not published between 1940 and the mid 1970s. We complement this dataset with information on sovereign bond specific risk ratings from the Moody's Manual, which we systematically search all the way back to the Inter-War Era. Figure D12 summarizes the coverage of our database by plotting the number of sovereign risk ratings and the share of rated sovereigns by year since 1920. Despite significant gaps in the post-WW2 era, when only few cross-border sovereign bonds were issued, our dataset is likely to cover the near-universe of all sovereign risk ratings published in the 20th and early 21st century (see Gaillard (2012) for a detailed discussion of the long-run variation in sovereign rating activity).

Figure D12: Coverage of sovereign credit risk ratings



Notes: This figure shows the coverage of our newly compiled sovereign risk ratings database. It shows the share of rated sovereigns (red dashed lines, right scale) and the number of rated sovereigns (blue bars, left scale) since 1920.

D.4 Miscellaneous

Foreign exchange rates and price deflators: We convert all local currency amounts into USD, using the long-run exchange rate series collected by Reinhart and Rogoff (2009) and by Denzel (2010). When showing or using constant USD values, we rely on the US Consumer Price Index to transform nominal amounts into their 2020 real USD equivalents. To build a 200+ year time series of the US CPI, we use data from Carter et al. (2006) for years 1790 to 1960 and update this series with CPI data from the Bureau of Labor Statistics (downloaded from data repository at the St. Louis Fed, series code "CPIAUCSL", yearly average).

GDP: Data on real GDP, population and real GDP per capita are taken from the Maddison Project Database (Bolt and van Zanden, 2020) and are available for our full sample period starting from 1790 for a subset of countries. Data on nominal GDP is from the TradHist project (Fouquin and Hugot, 2016) for years 1827 to 2014. We update the series until 2024 by using data from the World Bank's World Development Indicators (series code NY.GDP.MKTP.CD).

To scale our 200-year panoramic graph of official lending (Figure 1), we additionally require nominal GDP series for the UK until 1790. For this purpose, we use an additional long-run time series of British GDP (excluding Northern Ireland) compiled by Broadberry et al. (2015) and Thomas and Dimsdale (2017).

Geopolitical risk: To measure geopolitical risks, we rely on the widely used Geopolitical Risk Index (GPRI) developed by Caldara and Iacoviello (2023). The GPRI is a news-based measure of adverse geopolitical events and associated risks that is constructed by counting the share of newspaper articles on a monthly basis that discuss adverse geopolitical events or threats on the basis of a dictionary-based method.

Trade data: As explained above, our primary source for import and export data for years after 1827 is the TradHist Project Fouquin and Hugot (2016). In selected exercises, for example when scaling official and private lending flows in major crisis and war episodes as in 2.4, we need even longer run series for selected countries. For this purpose, we expand the aggregate imports time series at the country level from Fouquin and Hugot (2016) with data from Federico and Tena Junguito (2016) and from Mitchell (2013). We also make use of the following country-specific sources:

Behre, Otto (1905). *Geschichte der Statistik in Brandenburg-Preußen.* Berlin.

Departamento del Fomento General del Reyno y de la Balanza de Comercio España (1803). *Balanza del comercio de España con las potencias extrangeras en el año de 1792.* Madrid : En la Imprenta Real.

Edvinsson, Rodney and Gad, Christopher (2018). Assessing trade in the mercantilist era: evidence from a new database on foreign trade of Sweden-Finland, 1738-1805. *Scandinavian Economic History Review*, 66(3), 226–245.

Heinrich Storch (1803). Supplementband zum fünften, sechsten und siebenten Theil des historisch statistischen Gemäldes des Russischen Reichs. Riga: Hartknoch.

Kutz, Martin. 1974. *Deutschlands Aussenhandel von der Französischen Revolution bis zur Gründung des Zollvereins.* Wiesbaden: Franz Steiner Verlag.

Otruba, Gustav. 1950. *Der Außenhandel Österreichs: unter besonderer Berücksichtigung Niederösterreichs nach der älteren amtlichen Handelsstatistik.* Wien: Bergland Verlag

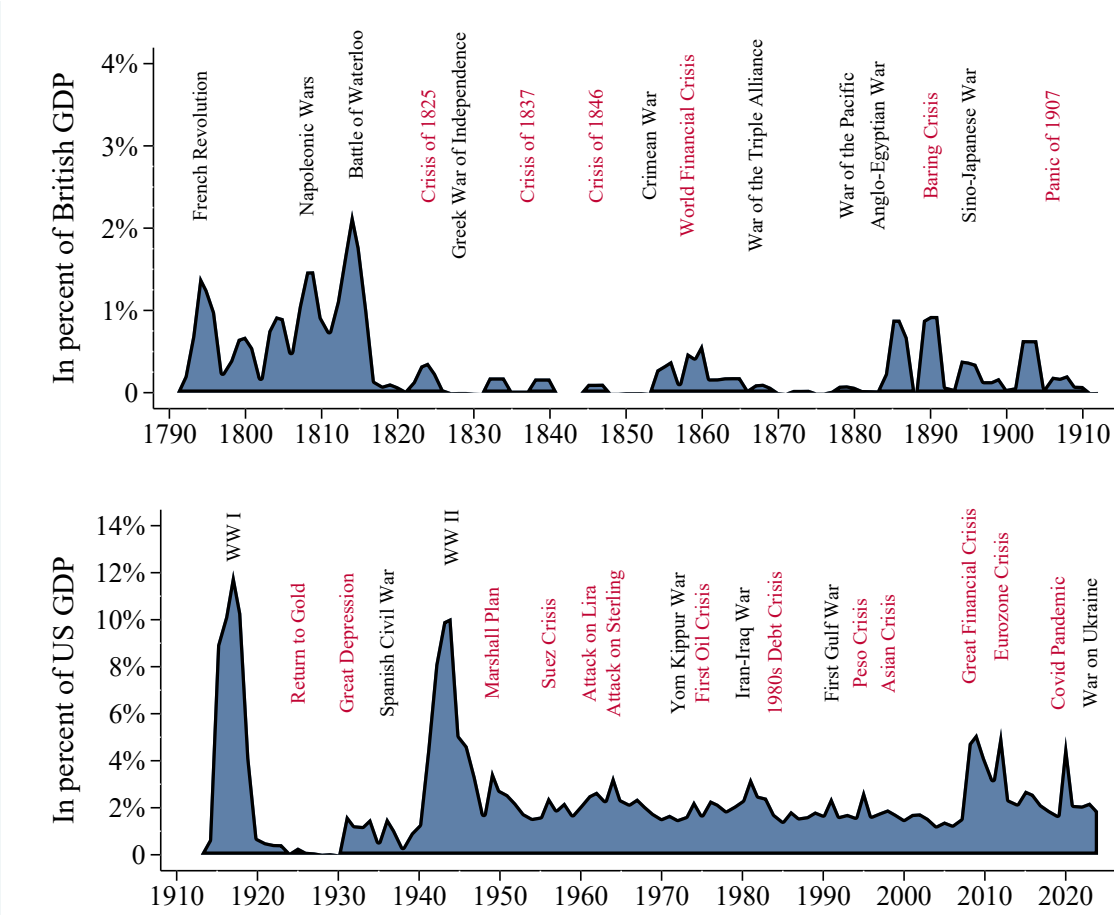
Pfister, Ulrich 2015. The quantitative development of Germany's international trade during the eighteenth and early nineteenth century. *Revue de l'OFCE*, 4(140), 175-221.

E Additional results

This section provides additional background material, additional descriptive statistics and data visualizations, as well as results from robustness exercises to our main gravity model specification.

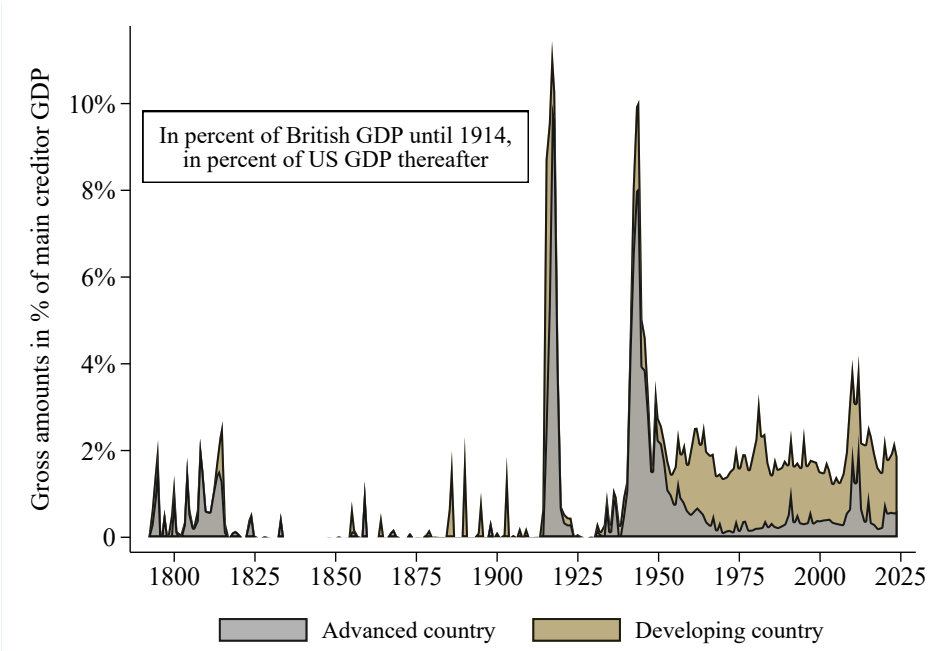
E.1 Additional figures and descriptive statistics

Figure E13: Official lending in war and peace, 1790 - 2024



Note: This figure shows all gross official commitments through grants, loans, swaps and guarantees in percent of British GDP (until 1914, Panel A) and in percent of US GDP (Panel B). The blue area combines lending by bilateral creditors (including central banks) and multilateral creditors. To smooth the series, we show a three year moving average in Panel A. Annotations in red refer to financial crises, annotations in black refer to wars. All data is from our new official lending database (see Appendix A.5 for details).

Figure E14: Recipients of official sovereign lending 1790 - 2024



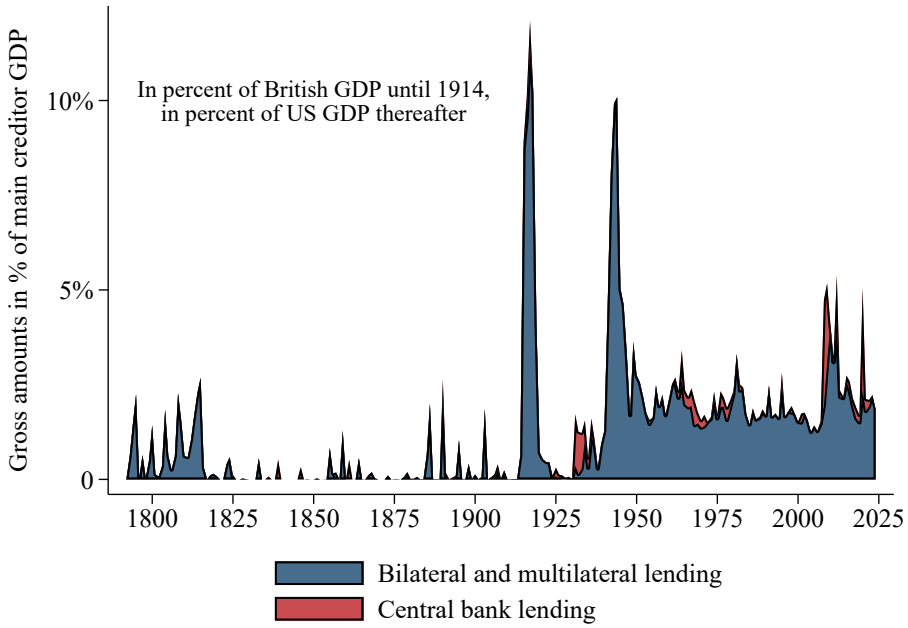
Note: This figure shows gross official commitments through grants, loans and guarantees in percent of British GDP (until 1914) and in percent of US GDP thereafter to advanced and developing country recipients. The country classification follows the World Bank and is as of 2020. The graph excludes central bank lending. All data is from our new official international lending database (see Appendix A for details).

Table E7: Incidence and size of international official rescue lending, 1790 - 2020

	Wars		Sovereign debt crises	
	Probability of external rescue lending *(in percent)*	Average size of external rescue lending *(in % of imports)*	Probability of external rescue lending *(in percent)*	Average size of external rescue lending *(in % of imports)*
Long 19th century (1790 - 1913)	22%	69%	11%	65%
Inter-War (1914 - 1945)	66%	542%	36%	77%
Post-WW2 (1946 - 2020)	100%	180%	100%	102%

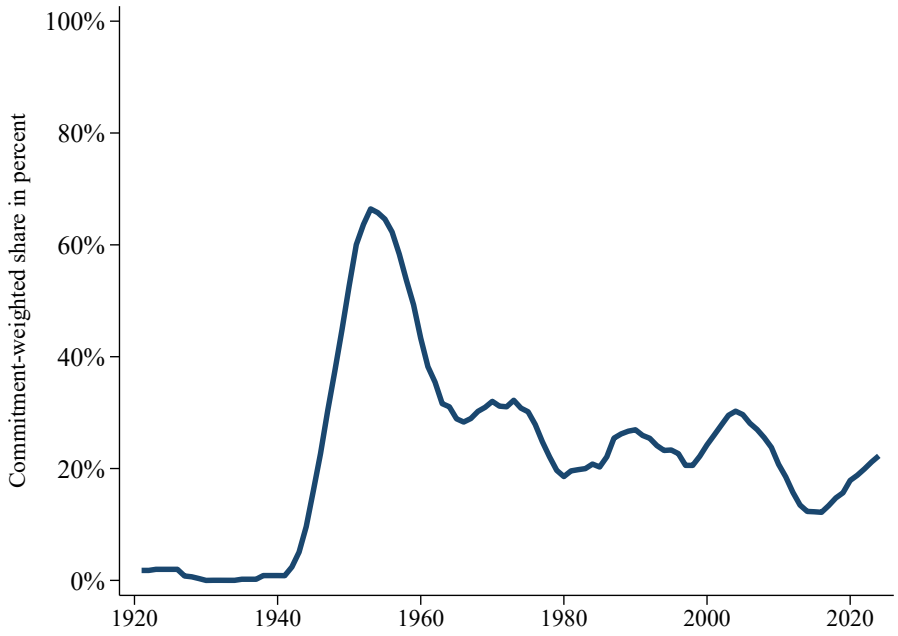
Note: This table shows the incidence and size of international official lending during defensive inter-state wars and sovereign debt crises as defined in Section 4.1. Columns (1) and (3) show the probability of receiving any form of foreign official lending during the first 3-years after the onset of a war or a debt crises. Columns (2) and (4) show the average size of foreign official lending during the 3-year window in percent of the country's pre-crisis imports, conditional on the existence of foreign financial support.

Figure E15: Government and central bank cross-border lending, 1790-2024



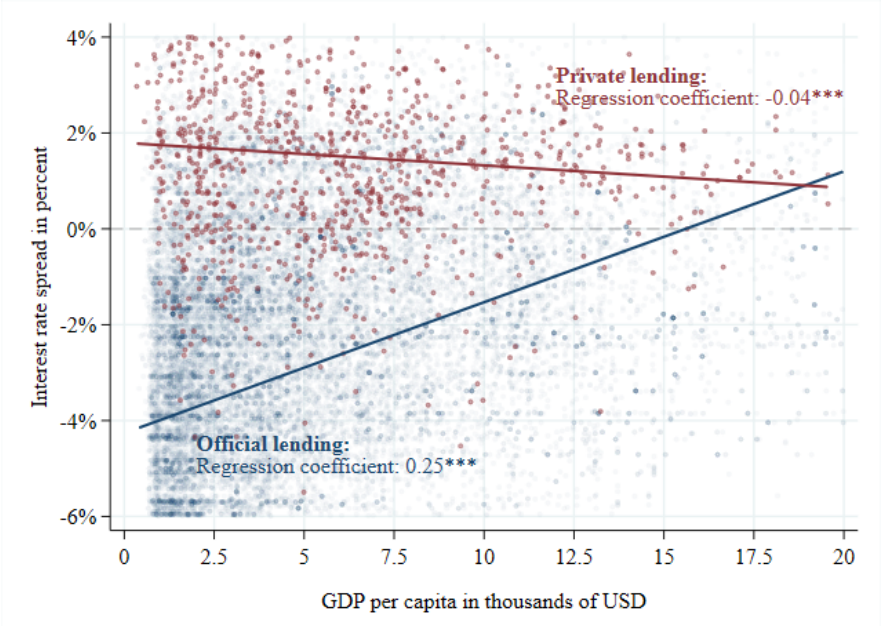
Note: This figure shows all gross official commitments through grants, loans and guarantees in blue and cross-border lending by central banks in red. Cross-border central bank lending includes credits to foreign central banks as well as bilateral swap line drawings. Credit with maturities of less than one months are excluded. The series are expressed in percent of British GDP until 1914 and in percent of US GDP thereafter.

Figure E16: Share of grants in total official lending, 1920 - 2024



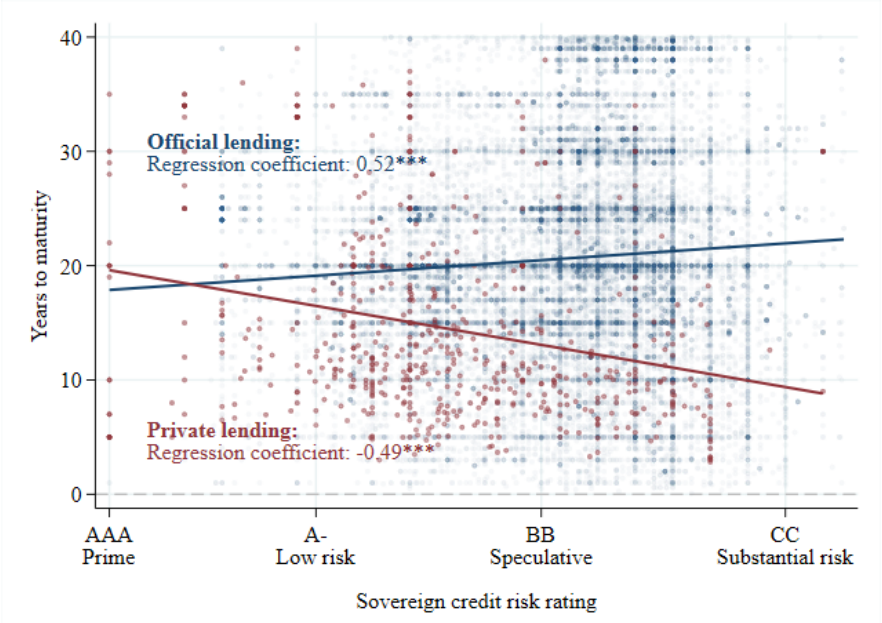
Note: This figure shows the share of grants in total official lending since 1920. The series is a commitment-weighted average and has been smoothed by applying a five-year moving average. The spike during the 1950s is driven by US Marshall Plan Lending to Europe which was mostly in the form of grants.

Figure E17: Official vs private interest rate spreads by debtor country income



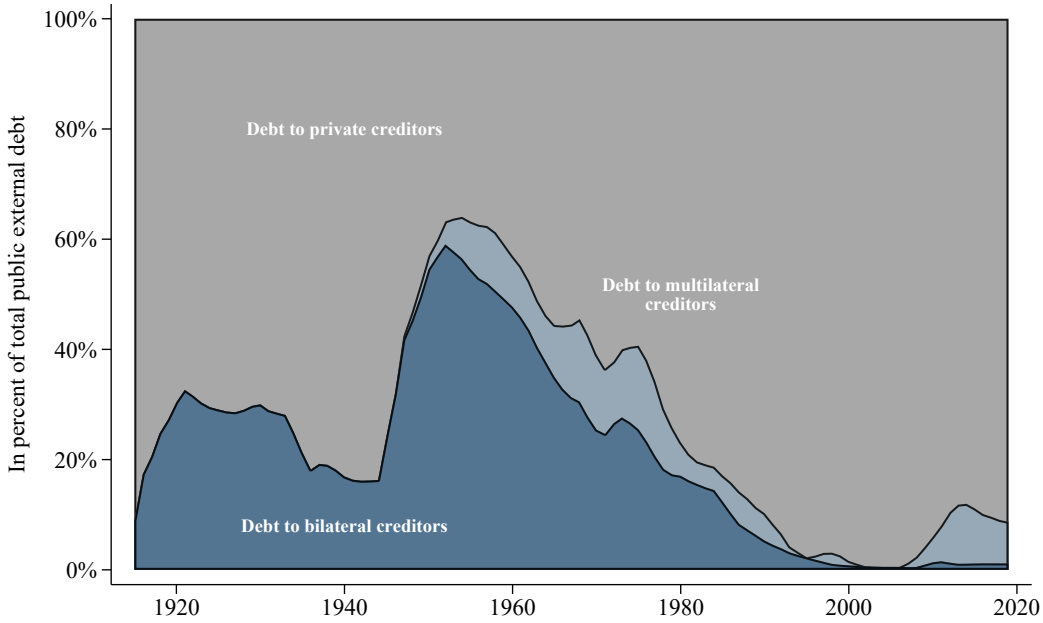
Note: This figure shows instrument-level interest rate spreads on private international lending (red dots) and official international lending (blue dots) from our novel international lending database. Interest rates for private bonds are measured as issuance yields. Spreads are calculated with respect to 10-year US government bond yields. The blue and red lines show bivariate regressions of the interest rate spread on GDP per capita which is from the Maddison Project (Bolt and van Zanden, 2020). Official grants, which account for around 20 percent of official sovereign flows, are excluded (see Appendix Figure E16 for details).

Figure E18: Official versus private loan maturity by debtor country credit risk



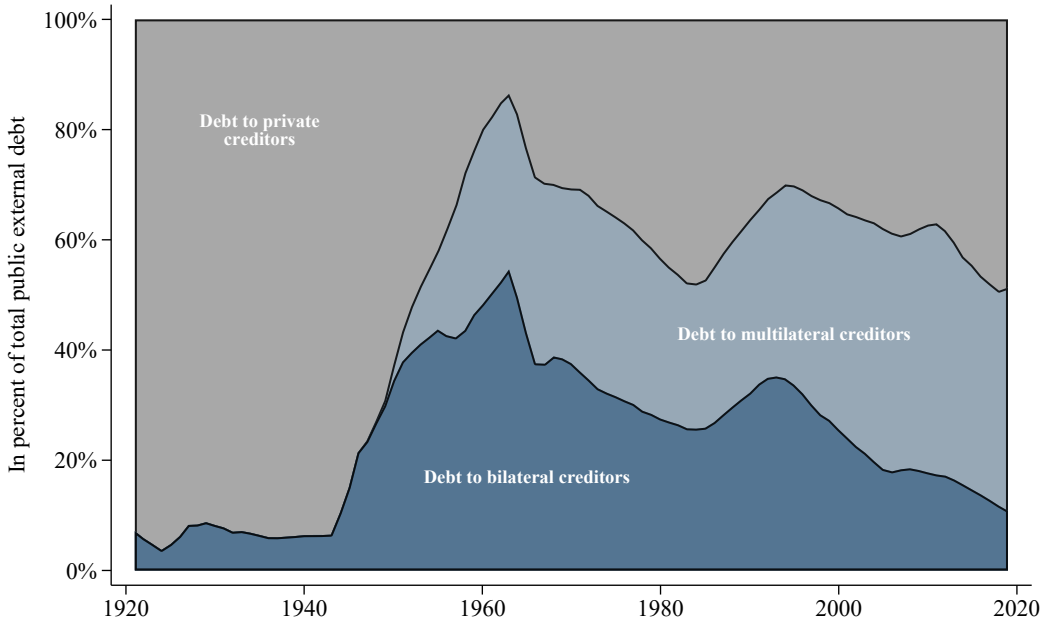
Note: This figure shows instrument-level data on years to maturity on private international lending (red dots) and official international lending (blue dots) from our novel international lending database. The blue and red lines show simple bivariate regressions of maturity on sovereign credit risk ratings which we compile from different sources (see Section D.3).

Figure E19: External public debt composition in AEs – unweighted averages



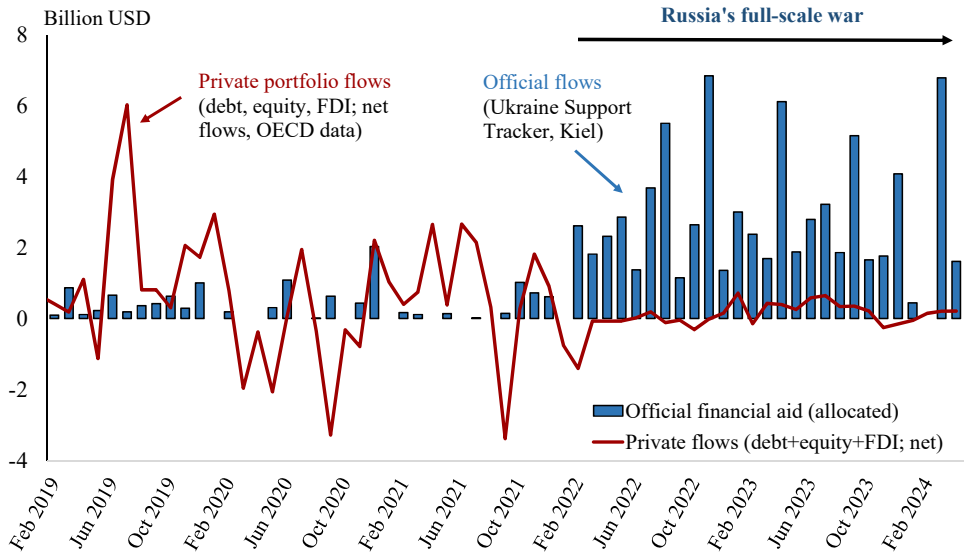
Note: This figure shows the average share of external public debt owed to private, bilateral and multilateral creditors since 1910 and for the full sample of 28 advanced countries, for which we have collected data. See Appendix Section B for details.

Figure E20: External public debt composition in EMDEs – unweighted averages



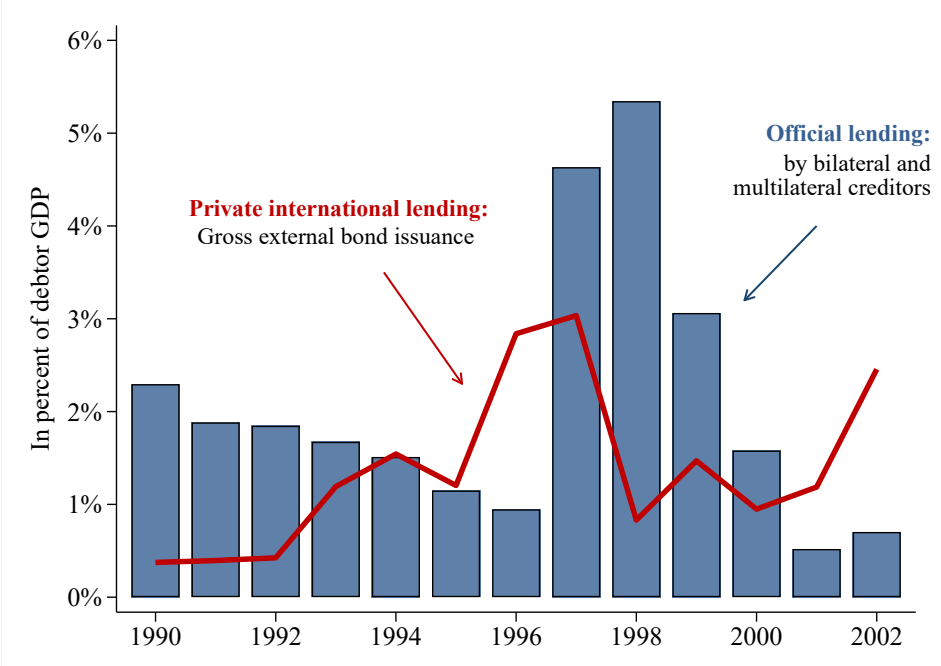
Note: This figure shows the average share of external public debt owed to private, bilateral and multilateral creditors since 1910 and for the full sample of 112 developing and emerging market countries, for which we have collected data. See Appendix Section B for details.

Figure E21: Official and private capital flows during Russia's war on Ukraine



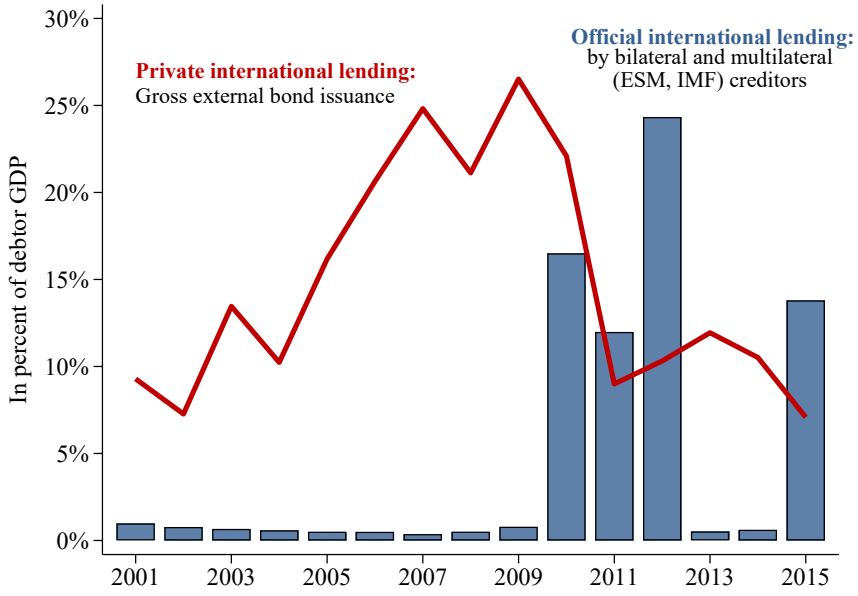
Note: This figure shows private capital flows (debt, equity and FDI flows from the OECD, in red) and official flows (allocated financial aid from Trebesch et al. (2023), in blue) to Ukraine during the months before and after Russia's full scale War. Both series are given in billions of USD.

Figure E22: Official and private capital flows during the Asian Crisis 1997



Note: This figure shows average private international lending (gross issuance of external public debt securities from the BIS International Debt Securities Statistics, in red) and official international lending (bilateral and multilateral commitments from our database, in blue) during the Asian Crises. See Appendix C.1 for details.

Figure E23: Eurozone crisis - private vs official flows



Note: The blue bars show official international lending through grants, loans and guarantees. The red bold line shows external sovereign bonds issued by continental European sovereigns. Both series show averages in percent of debtor country GDP. See Appendix Sections A.5 and C.2 for details.

E.2 Additional information and robustness tests for gravity model

This appendix section provides additional information, descriptive statistics and three different types of robustness checks for the results obtained from the 200-year augmented gravity model shown in Section 5. We confirm that (i) the use of alternative model specifications, (ii) alternative event horizons for wars and sovereign debt crises, and (iii) alternative exposure measures do not significantly alter our main conclusions.

E.2.1 Gravity regression sample

Our 200-year augmented gravity model presented in Table 2 in the main text is based on the following sample of creditor and debtor countries. All countries enter the sample in the year of their independence (provided that all necessary data is available).

Creditor countries: To minimize the number of zero observations in the dependent variable, we focus our regression analysis on the twenty largest bilateral creditors over the past 200 years. The twenty largest bilateral lenders are defined by total bilateral official lending (loans, guarantees and grants) over the full 240-year sample in constant USD. Our main results are robust to estimating the model on datasets with larger sets of creditor countries.

Table E8: Creditor country regression sample

Country	Coverage	Country	Coverage
Australia	1901–2012	Kuwait	1962–2012
Belgium	1830–2012	Netherlands	1830–2012
Canada	1867–2012	Norway	1905–2012
China	1830–2012	Russia	1830–2012
Denmark	1830–2012	Saudi Arabia	1932–2012
France	1830–2012	Spain	1830–2012
Germany	1830–2012	Sweden	1830–2012
Italy	1830–2012	Switzerland	1830–2012
Japan	1830–2012	UAE	1972–2012
UK	1830–2012	USA	1830–2012

Note: This table shows the creditor countries included in the 200-year gravity regressions presented in Section 5. They represent the twenty largest bilateral creditors during years 1830 to 2020 in constant 2020 USD. Russia includes lending by the Soviet Union.

Recipient countries: At the recipient end, we include all debtor countries in our database of official lending (see Section A.6 for a complete list) with available data on all necessary regressors, starting from their year of independence. The final regression sample in Table 2 therefore contains an unbalanced sample of 165 recipient countries.

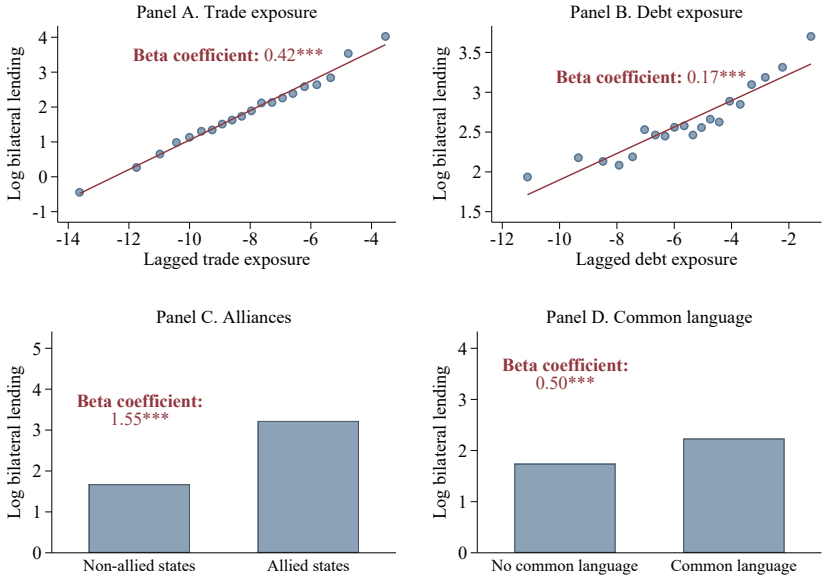
Final sample: Our combined sample therefore includes roughly 3,250 unique creditor-recipient dyads over up to two centuries. After data points with missing covariates and singletons have been accounted for, we arrive at a regression sample of around 166,240 dyad-year observations.[25]

E.2.2 Descriptive evidence

Figure E24 takes a preliminary look at the data that underlies our augmented 200-year gravity regressions. Panels A and B show a bin scatter plot of official lending flows and the bilateral measures of economic and financial exposure (in logs and lagged by one year). We also show beta coefficients from linear regressions of bilateral lending on the lagged exposure variable. The figure shows that - in line with our regression results and theoretical priors - higher trade (higher debt exposure) is associated with higher bilateral lending flows. Also, military alliances and a shared language come with significantly more official assistance. The same is true for a joint colonial history (not shown in Figure E24).

Figures E25 and E26 provide further descriptive evidence with a focus on how alliances and economic exposure drive bilateral lending during wars and debt crisis. In line with the interaction terms estimated in Table 2 in the main text, we see in the raw data that lending by allies is particularly high during war and that lending by high-exposure creditors is particularly high during debt crises.

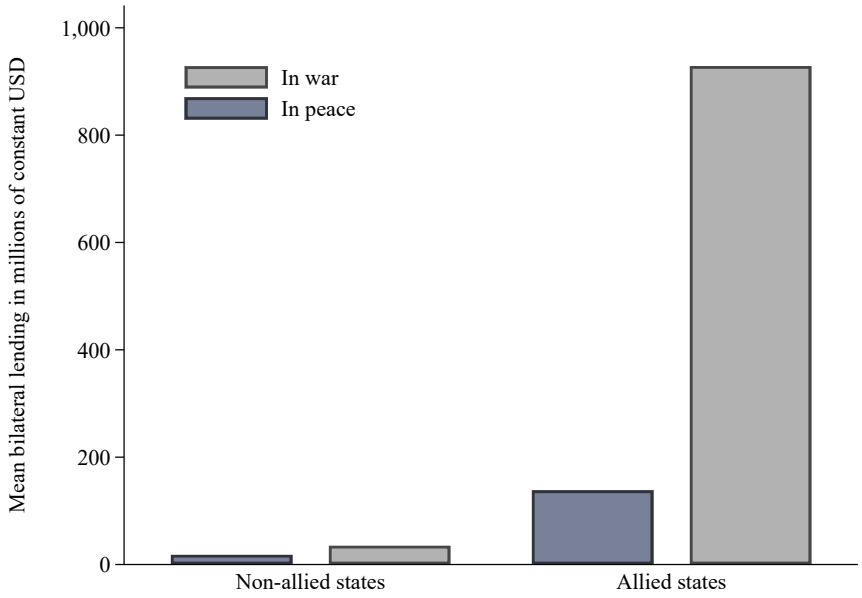
Figure E24: Correlates of official lending – political and financial ties



Note: This figure illustrates the correlation between the (log) of bilateral lending and lagged bilateral economic, financial and political ties. Panel A focuses on the bilateral trade, Panel B on the debt exposure of private creditors, Panel C on alliances, and Panel D on whether the two countries share a common language. Panels A and B show binned scatter based on 20 equally sized bins. Each blue dot represents the conditional mean of trade / debt exposure within one of these bins. Fitted lines and regression coefficient show the results of simple bivariate OLS regressions. See text and Appendix Section D.1 for details on variable definitions and data sources.

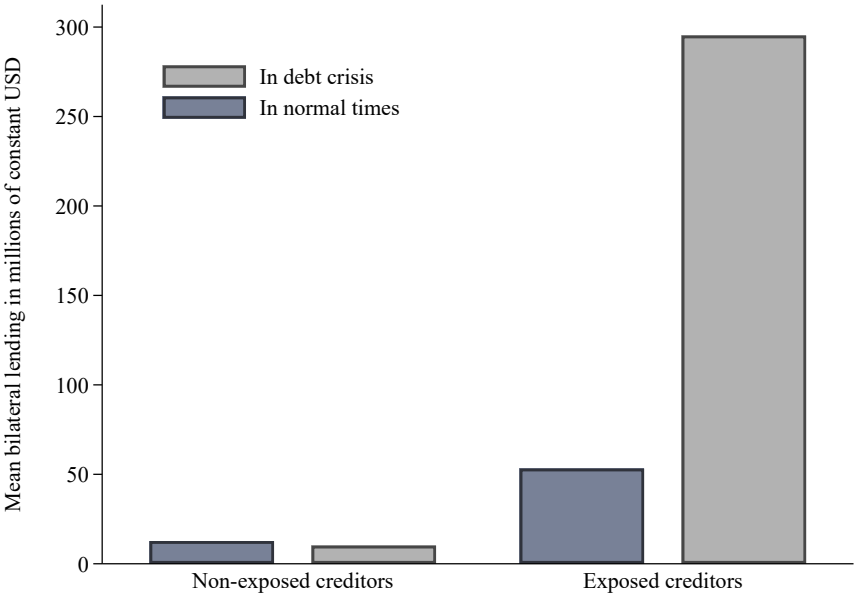
[25] See Santos Silva and Tenreyro (2006) and Correia et al. (2020) for a discussion on how PPML regressions treat singleton data points.

Figure E25: Official lending, wars, and alliances, 1820-2012



Note: This figure shows conditional average bilateral lending amounts through loans, grants and guarantees in millions of constant USD by allied and non-allied countries and in war and peace. Gray bars show conditional averages for three-year windows around the onset of inter-state war, while blue bars give the conditional average in non-war years. See Appendix Sections D.1, C.1.2, and A.5 for details on variable definitions and data sources.

Figure E26: Private exposure and official lending, 1820-2020



Note: This figure shows conditional average bilateral lending amounts through loans, grants and guarantees in millions of constant USD by exposed and non-exposed creditors during debt crises and normal times. To identify exposed and non-exposed creditors we divide the sample at the median exposure level. Gray bars show conditional averages for three-year windows around sovereign debt crises, while blue bars give the conditional average in non-crisis years. See Appendix Sections D.1, A.5, and C.1.1 for details on variable definitions and data sources.

E.2.3 Alternative model specifications

This appendix subsection presents robustness checks for our 200-year augmented gravity model of official lending. Tables E9, E10 and E11 present results from our main gravity model when estimating OLS or logit models instead of the PPML model presented in the main text (columns 1 and 2), and when including more extensive sets of fixed effects (columns 3 to 6). Table E9 focuses on the main specification, while Tables E10 and E11 add interaction effects between inter-state wars and alliances and economic exposure and sovereign debt crises.

Table E9: Alternative model specifications I

	Dep. variable: Bilateral official lending					
	(1) OLS	(2) Logit	(3) PPML	(4) PPML	(5) PPML	(6) PPML
Trade exposure	0.28***	0.14***	0.39***	0.29***	0.46***	0.39***
	(0.02)	(0.02)	(0.09)	(0.05)	(0.12)	(0.03)
Alliance	-0.15	0.56***	0.74***	0.58***	0.57**	0.37***
	(0.12)	(0.11)	(0.16)	(0.15)	(0.25)	(0.09)
Distance	-0.41***	-0.19***	-0.01	-0.07		0.00
	(0.07)	(0.06)	(0.15)	(0.12)		(0.07)
Common language	0.87***	0.73***	0.72***	0.63***		0.47***
	(0.10)	(0.08)	(0.17)	(0.17)		(0.09)
War	0.18	0.38***	0.78***	0.49***	0.76***	
	(0.14)	(0.12)	(0.24)	(0.19)	(0.25)	
Sov. Debt Crisis	0.06	0.21***	0.38***	0.51***	0.28**	
	(0.05)	(0.04)	(0.11)	(0.14)	(0.11)	
Observations	43549	166846	166846	158340	125472	112853
Controls	✓	✓	✓	✓	✓	✓
Debtor FE	✓	✓	✓	✓		
Creditor FE	✓	✓	✓	✓		
Year FE				✓		
Pair FE					✓	
D-Year FE						✓
C-Year FE						✓

Notes: Model 1 uses the log of real bilateral lending commitments as the dependent variable. Model 2 uses a dummy variable that is equal to one for non-zero lending amounts as the dependent variable. Models 3 to 6 use real bilateral lending in constant USD as the dependent variable. All explanatory variables enter with lagged values. All models include additional time varying controls and different types of fixed effects. Robust standard errors, clustered at the creditor-debtor dyad, are shown in parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level.

Table E10: Alternative model specifications II

	Dep. variable: Bilateral official lending				
	(1) OLS	(2) Logit	(3) PPML	(4) PPML	(5) PPML
Trade exposure	0.28***	0.14***	0.38***	0.29***	0.43***
	(0.02)	(0.02)	(0.09)	(0.05)	(0.12)
Alliance	-0.17	0.54***	0.69***	0.55***	0.51*
	(0.12)	(0.11)	(0.17)	(0.16)	(0.27)
Distance	-0.41***	-0.19***	-0.01	-0.07	
	(0.07)	(0.06)	(0.15)	(0.12)	
Common language	0.88***	0.74***	0.73***	0.64***	
	(0.10)	(0.08)	(0.17)	(0.17)	
War	0.45	1.74***	1.79***	0.70	1.73***
	(0.44)	(0.40)	(0.62)	(0.50)	(0.58)
Sov. Debt Crisis	0.06	0.20***	0.35***	0.50***	0.27**
	(0.05)	(0.04)	(0.11)	(0.14)	(0.11)
Trade exposure * War	0.06	0.20***	0.28**	0.07	0.28***
	(0.05)	(0.05)	(0.11)	(0.08)	(0.11)
Alliance * War	1.67***	1.69***	1.01***	0.40	1.25***
	(0.43)	(0.45)	(0.36)	(0.35)	(0.46)
Observations	43549	166846	166846	158340	125472
Sample	1820 - 2012	1820 - 2012	1820 - 2012	1820 - 2012	1820 - 2012
Controls	✓	✓	✓	✓	✓
Debtor FE	✓	✓	✓	✓	
Creditor FE	✓	✓	✓	✓	
Year FE				✓	
Country Pair FE					✓

Notes: Model 1 uses the log of real bilateral lending commitments as the dependent variable. Model 2 uses a dummy variable that is equal to one for non-zero lending amounts as the dependent variable. Models 3 to 5 use real bilateral lending in constant USD as the dependent variable. All explanatory variables enter with lagged values. All models include additional time varying controls and different types of fixed effects. Robust standard errors, clustered at the creditor-debtor dyad, are shown in parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level.

Table E11: Alternative model specifications III

	Dep. variable: Bilateral official lending				
	(1) OLS	(2) Logit	(3) PPML	(4) PPML	(5) PPML
Trade exposure	0.27***	0.14***	0.38***	0.28***	0.45***
	(0.02)	(0.02)	(0.09)	(0.05)	(0.12)
Alliance	-0.15	0.54***	0.72***	0.53***	0.53**
	(0.12)	(0.11)	(0.16)	(0.15)	(0.26)
Distance	-0.41***	-0.19***	0.01	-0.05	
	(0.07)	(0.06)	(0.15)	(0.12)	
Common language	0.87***	0.73***	0.72***	0.63***	
	(0.10)	(0.08)	(0.17)	(0.17)	
War	0.18	0.38***	0.76***	0.47**	0.74***
	(0.14)	(0.12)	(0.23)	(0.19)	(0.25)
Sov. Debt Crisis	0.77***	0.37**	1.00***	1.30***	0.73**
	(0.20)	(0.16)	(0.34)	(0.41)	(0.30)
Trade exposure * Debt Crisis	0.10***	0.02	0.14**	0.18**	0.13***
	(0.03)	(0.02)	(0.06)	(0.07)	(0.05)
Alliance * Debt Crisis	0.06	0.40	0.26	0.36	0.62**
	(0.18)	(0.25)	(0.26)	(0.26)	(0.24)
Observations	43549	166846	166846	158340	125472
Sample	1820 - 2012	1820 - 2012	1820 - 2012	1820 - 2012	1820 - 2012
Controls	✓	✓	✓	✓	✓
Debtor FE	✓	✓	✓	✓	
Creditor FE	✓	✓	✓	✓	
Year FE				✓	
Country Pair FE					✓

Notes: Model 1 uses the log of real bilateral lending commitments as the dependent variable. Model 2 uses a dummy variable that is equal to one for non-zero lending amounts as the dependent variable. Models 3 to 5 use real bilateral lending in constant USD as the dependent variable. All explanatory variables enter with lagged values. All models include additional time varying controls and different types of creditor and debtor fixed effects. Robust standard errors, clustered at the creditor-debtor dyad, are shown in parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level.

E.2.4 Alternative event horizons for wars and sovereign debt crises

As discussed in Section C.1, we construct dummy variables for the first three years of inter-state wars and sovereign debt crises. Here we show that our main results are robust to using different timing conventions. Table E12 shows that the estimated coefficients remain highly significant and similar in magnitude when we limit our disaster dummies to a 2-year horizon or when we extend them to a 4-year horizon. Results are also robust to including the full war and sovereign default spell.

Table E12: Alternative event window definitions

	Dep. variable: Bilateral official lending			
	(1) PPML	(2) PPML	(3) PPML	(4) PPML
Trade exposure	0.39***	0.39***	0.39***	0.40***
	(0.07)	(0.09)	(0.09)	(0.08)
Alliance	0.73***	0.74***	0.74***	0.75***
	(0.15)	(0.16)	(0.16)	(0.17)
Distance	-0.02	-0.01	-0.01	-0.00
	(0.13)	(0.15)	(0.15)	(0.15)
Common language	0.67***	0.72***	0.72***	0.71***
	(0.17)	(0.17)	(0.17)	(0.17)
Sov. Debt Crisis - all years	0.32**			
	(0.15)			
War - all years	2.19***			
	(0.45)			
Sov. Debt Crisis - 2 years		0.41***		
		(0.13)		
War - 2 years		0.52**		
		(0.26)		
Sov. Debt Crisis - 3 years			0.38***	
			(0.11)	
War - 3 years			0.78***	
			(0.24)	
Sov. Debt Crisis - 4 years				0.33***
				(0.10)
War - 4 years				1.16***
				(0.26)
Observations	166846	166846	166846	166846
Sample	1820 - 2012	1820 - 2012	1820 - 2012	1820 - 2012
Controls	✓	✓	✓	✓
Debtor FE	✓	✓	✓	✓
Creditor FE	✓	✓	✓	✓

Notes: PPML regression results using gross bilateral lending commitments as dependent variable (in real USD). All explanatory variables enter with lagged values. The models include creditor and debtor fixed effects and additional time varying controls (debtor and creditor GDP, democracy, population). Robust standard errors, clustered at the creditor-debtor dyad, are shown in parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level.

E.2.5 Alternative exposure measures

The augmented 200-year gravity model presented in the main text relied on bilateral trade flows to measure the economic exposure of the creditor economy to the recipient country. Bilateral trade data has the key advantage of being available for a broad cross-section of countries and for nearly two centuries. For more recent decades, more granular data is available to measure the financial and economic exposure of creditor economies to the recipient economy and therefore the potential spillover effects that could emerge from a sovereign debt crisis. In Appendix Section D.1, we provide details on

how we construct alternative exposure measures that focus on exposure through debt holdings (from the World Bank's International Debt Statistics) and on exposure through bank linkages (from the BIS Consolidated Banking Statistics). Tables E13 and E14 shows that our main results hold, when we integrate these alternative exposure measures into our gravity model.

Table E13: Sovereign debt crisis, bailouts and debt exposure, 1970-2012

	Dep. variable: Bilateral official lending, 1970-2010		
	(1) PPML	(2) PPML	(3) PPML
Debt Exposure	0.26***	0.12***	0.11***
	(0.06)	(0.02)	(0.02)
Sov. Debt Crisis		0.31**	0.83**
		(0.15)	(0.34)
Distance		-0.51***	-0.50***
		(0.11)	(0.11)
Alliance		-0.06	-0.07
		(0.23)	(0.23)
Common language		1.09***	1.09***
		(0.20)	(0.20)
Debt exposure * Sov. Debt Crisis			0.15**
			(0.07)
Observations	21205	20348	20348
Sample		1970 - 2012	1970 - 2012
Controls		✓	✓
Debtor FE		✓	✓
Creditor FE		✓	✓

Notes: PPML regression results using gross bilateral lending commitments as dependent variable (in real USD). All explanatory variables enter with lagged values. The models include creditor and debtor fixed effects and additional time varying controls (debtor and creditor GDP, democracy, population). Robust standard errors, clustered at the creditor-debtor dyad, are shown in parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level. For details on the debt exposure variable see Appendix Section D.1.

Table E14: Sovereign debt crisis, bailouts and banking exposure, 1984-2012

	Dep. variable: Bilateral official lending, 1984-2010		
	(1)	(2)	(3)
	PPML	PPML	PPML
Bank exposure	0.28***	0.30***	0.29***
	(0.05)	(0.05)	(0.06)
Sov. Debt Crisis		0.32*	-1.88**
		(0.18)	(0.77)
Distance		-0.77***	-0.73***
		(0.13)	(0.12)
Common language		1.12***	1.11***
		(0.26)	(0.26)
Bank exposure * Sov Debt Crisis			0.27***
			(0.10)
Observations	21721	19742	19742
Sample	1984 - 2012	1984 - 2012	1984 - 2012
Controls		✓	✓
Debtor FE		✓	✓
Creditor FE		✓	✓

Notes: PPML regression results using gross bilateral lending commitments as dependent variable (in real USD). All explanatory variables enter with lagged values. The models include creditor and debtor fixed effects and additional time varying controls (debtor and creditor GDP, democracy, population). Robust standard errors, clustered at the creditor-debtor dyad, are shown in parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% level. For details on the bank exposure variable see Appendix Section D.1.

Appendix References

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