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SANCTIONS AND THE EXCHANGE RATE IN TIME

Abstract

We test the predictions of recent theoretical studies of the impact of sanctions on the exchange rate. We build a database of exchange rates and sanctions spanning 1914-1945---an era when both large and small economies were targeted by multilateral sanction packages, facilitating comparisons with today's Russian war episode. We estimate the dynamic response of the exchange rate in a panel of sanction episodes at weekly frequency using local projections, conditioning on the type of sanctions taken. We tease out mechanisms through which sanctions affect the exchange rate by estimating their effects on macroeconomic variables plausibly acting as transmission channels. Our estimates tend to suggest that import restrictions, trade embargoes and asset freezes lead to exchange rate effects consistent with theory. The effects of sanctions are channeled through imports and assets freezing in line with theoretical predictions. These findings suggest that recent models of the effects of sanctions on the exchange rate do not just match developments in today's specific Russia episode but have broader applicability. Exchange rate movements are therefore not an adequate metric of the success or failure of sanctions but a reflection of the type and scale of the measures taken.

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committees, the European Central Bank or the Eurosystem.

1 Introduction

Russia's invasion of Ukraine is transforming global economic and security relations.¹ It has led to the imposition of trade and financial sanctions of a scale and scope unprecedented since World War II. It serves as a reminder of the importance of the interplay of geopolitics and international economics.

An area of particular attention is the interaction of sanctions and international finance. Brunnermeier et al. (2022) and Eichengreen (2022), as well as policy makers and market participants², have raised the question of whether sanctions will have implications for the structure of the international monetary system, by encouraging nations to bypass the US dollar and other traditional international and reserve currencies.³ Another question, on which we focus, is the effect of sanctions on the exchange rate of the targeted country. The behavior of the Russian rouble following the imposition of sanctions highlights why this is an issue of interest. When Russia invaded Ukraine on February 24th, 2022 and sanctions were imposed, the rouble initially lost more than 60% of its value against the US dollar. Subsequently, it recovered fully, however, giving rise to speculation on whether sanctions had the intended effect (see Figure A.1).⁴

Theoretical studies (Itskhoki and Mukhin (2022) and Lorenzoni and Werning (2022)) provide conceptual frameworks for understanding the impact of sanctions on the exchange rate. They show that the effects on the foreign exchange market depend on the type of sanctions⁵, as well as on their timing and intensity. Impacts might also be depend on the response of the sanctioned country—on the presence or absence of countermeasures, sanction busters and options for evasion.⁶

¹See e.g. Snower (2022).

²Including warnings by the IMF's chief economist ("Russia sanctions threaten to erode dominance of US dollar", says IMF", *Financial Times*, March 21st 2022) and subsequent analyses by Dooley et al. (2022) and Weiss (2022).

³Preliminary evidence (Berthou (2022)) looking at trade invoicing micro-data suggests this was already the case after the first round of international sanctions against Russia in 2014.

⁴See e.g. "US insists sanctions are working despite rouble's rebound", *Financial Times*, April 1st, 2022. The rouble dropped in value especially in the days after the US and the EU froze the international reserves of the central bank of Russia and the EU announced that it would "deswift" Russian financial institutions. The trough was reached on March 7th shortly after the assault by Russian forces of the Zaporizhzhia nuclear power plant. But by March 30th, the rouble had recovered its prewar value – to the surprise of many.

⁵In particular, Itskhoki and Mukhin (2022) distinguish between sanctions on exports, sanctions on imports, exit of multinationals, freezes of foreign assets, exclusions from financial markets and limits to access to safe assets. Lorenzoni and Werning (2022) distinguish between import rationing, import sanctions without rationing, and prospective asset freezes.

⁶Sanction busters are third parties that help undermine their operation (see Early (2015)). Itskhoki

Existing models make similar predictions for the effect of sanctions on the exchange rate, but their transmission channels differ. [Itskhoki and Mukhin \(2022\)](#) stress that the effect of sanctions on the exchange rate depends on the balance of currency demand and supply—sanctioning exports and freezing official reserve assets reduce foreign currency supply, while sanctioning imports reduces foreign currency demand, with the opposite effect. These predictions match developments in the rouble exchange rate: Russia’s currency recovered in mid-March from its initial depreciation at a time when tougher sanctions on imports than exports increased the supply of foreign currency—amid surging prices of oil and other commodities of which Russia is a major exporter—while the introduction of capital controls and financial repression by Russia reduced the demand for foreign currency. [Lorenzoni and Werning \(2022\)](#) emphasize another channel: sanctions that limit exports from source to target country prevent consumers in the latter from buying their preferred mix of foreign goods; consumers instead must purchase goods from countries not imposing sanctions, or else they must increase their saving in the form of foreign assets. Consumers in the target country are therefore likely to increase their consumption of domestic goods. In equilibrium, this raises the relative price of domestic goods, leading to appreciation of the real exchange rate.⁷ This prediction matches developments in the rouble exchange rate as well.

But matching developments in a specific episode says nothing about the broader applicability of these models. It doesn’t help that the evidentiary base on the transmission channels through which sanctions affect the exchange rate is decidedly limited. Then there is the presence of confounding factors. In the current instance, the imposition of sanctions against Russia coincided with the invasion of Ukraine, which in turn had implications for energy, grain and other markets. Determining whether the response of the exchange rate reflects the effect of Europe’s largest military conflict since 1945 or that of the sanctions is challenging, to say the least.⁸

and [Mukhin \(2022\)](#) consider capital controls and financial repression as tools reducing demand for foreign currency and hence putting downward pressure on the currency of the sanctioned currency. [Lorenzoni and Werning \(2022\)](#) consider the possibility that agents can legally or illegally evade restrictions and trade currency with one another, creating a black market on which the currency is traded at a price different from the official market price.

⁷A similar channel is present in the model of [Itskhoki and Mukhin \(2022\)](#), who recast the mechanism from the perspective of the goods market rather than the currency market.

⁸Consistent with this observation, [Federle et al. \(2022\)](#) find evidence of a “proximity penalty” in the stock market response to the Russian invasion of Ukraine. The closer countries are located to Ukraine (or the closer are individual firms within countries), the more negative are their equity returns in a four-week window around the start of the war.

In this paper, we use the longer history of sanctions to test the predictions of these models and tease out the underlying mechanisms. Although some of these hypotheses have been studied before, historical studies of the effect of sanctions on the exchange rate lack a conceptual framework. They rely on databases limited in scope and size, since they focus on the post-1945 period, when small economies were disproportionately targeted.⁹ This renders them ill-suited for shedding light on recent events. Moreover, existing databases often lack the granularity needed to pinpoint sanctions by type and date. Hence they are poorly suited for testing recent models emphasizing the differing effects of sanctions by type and timing.

A contribution of this paper is therefore a new database spanning the period 1914-1945. In constructing this database, we extend earlier work by [Hufbauer et al. \(2009\)](#), [Hufbauer et al. \(2010\)](#), and [Mulder \(2022\)](#). Our rationale for focusing on this earlier era is that large as well as small economies were targeted by sanctions, enabling comparisons with recent experience. We collect weekly data on 128 cases of sanctions, coding them by timing and type.

A further contribution is to expand the historical database of [Vicqu ery \(2022\)](#) on weekly exchange rate quotes for a panel of currencies to encompass the first half of World War II. Exchange rates of currencies of countries at war with Britain were not quoted in London in 1914-1918 and 1939-1945, while many currencies were subject to stringent wartime capital controls. We collect new data on weekly quotes on the Swiss market—which remained active in wartime periods and included black-market quotes. This allows us to observe movements in the exchange rate at sufficiently high frequency to pinpoint the effect of wartime sanctions.

We estimate the dynamic response of the exchange rate using local projections, controlling for country fixed effects, time fixed effects and covariates. We condition the impact on type of sanction imposed and its timing. We shed light on the mechanism through which sanctions affect the exchange rate by estimating their effects on macroeconomic variables plausibly acting as transmission channels, such as imports, exports and assets frozen.

Our data confirm that the breadth and scope of the sanctions taken against a country of the systemic importance as Russia are unprecedented since World War II. In contrast,

⁹See for instance [Wang et al. \(2019\)](#), [Laudati and Pesaran \(2021\)](#), and [Dreger et al. \(2016\)](#).

countries facing economic sanctions during World War I and the interwar period were of a size comparable to today's Russia — about 2-3% of global GDP and trade. Countries facing economic sanctions after World War II were on average 10 times smaller, accounting for about 0.2-0.3% of global GDP and trade.

Our results further suggest that the effects of sanctions on the exchange rate depend on sanctions type, consistent with theory. Import restrictions are associated with appreciation of the exchange rate and declining imports, in line with model-based predictions. The magnitude of the effect— 0.2%—is much smaller than the movements we are observing in today's rouble. This may reflect the more limited exchange rate flexibility of this earlier era. Moreover, we find that trade embargoes restricting both exports and imports do not impact the exchange rate significantly, consistent with the prior that the effects of the two types of sanctions offset. Asset freezes are associated with an exchange rate depreciation proportional to the value of assets frozen, as posited by theory. The depreciation—0.5% at its peak—persists up to two months. In contrast, the estimated response of the exchange rate to export restrictions is statistically insignificant, which points to identification challenges arising from data limitations more than to empirical rejection of the models.

Overall, our findings suggest that recent models of the effects of sanctions on the exchange rate do not just match developments in today's Russia but have broader applicability.

Our paper is related to three streams of literature. First are conceptual models of how sanctions work (see e.g. [Kaempfer and Lowenberg \(1988\)](#), [Eaton and Engers \(1992\)](#), [Eaton and Engers \(1999\)](#), [Lorenzoni and Werning \(2022\)](#), [Itskhoki and Mukhin \(2022\)](#)). Our related contribution is to test two recent theories of the effects of sanctions on the exchange rate using historical data.

Another stream is the literature examining the features of sanction policies. A landmark study here is [Hufbauer et al. \(2009\)](#) and [Hufbauer et al. \(2010\)](#). Other relevant studies include e.g. [Elliott and Hufbauer \(1999\)](#), [Clifton et al. \(2014\)](#), [Von Soest and Wahman \(2015\)](#), [Felbermayr et al. \(2020\)](#). Our paper adds to this by mobilizing new data on pre-1945 sanctions and illustrating their relevance to the case of present-day Russia.

Finally, an empirical literature attempts to estimate the international economic ef-

fects of sanctions, for instance on the direction of trade (e.g. [Haidar \(2017\)](#)), cross-border financial flows (e.g. [Besedeš et al. \(2017\)](#)) and spillbacks onto the sanctioning country (e.g. [Besedeš et al. \(2021\)](#), [Crozet and Hinz \(2020\)](#)). Recent papers have examined international fallout from Russia’s invasion of Ukraine e.g. on global equity markets ([Federle et al. \(2022\)](#)), sovereign default ([Bianchi and Sosa-Padilla \(2022\)](#)), and inflows and outflows from Russian bank accounts ([Drott et al. \(2012\)](#)). Our paper focuses on the exchange rate, examining whether the significant international economic effects emphasised in earlier studies extend to other times and places.

Section 2 introduces our new database on 1914-1945 economic sanctions. Section 3 considers the empirical framework and testable hypotheses. Section 4 reviews the estimates, while Section 5 draws conclusions for research and policy.

2 A New Database on 1914-1945 Economic Sanctions

2.1 A Primer on the History of Economic Sanctions

The 1914-1945 period is well suited for shedding light on recent economic sanctions on Russia. Neither the period before 1914 nor that after 1945 are equally apposite, as we now explain.

Prior to World War I, doctrine governing the use of sanctions was different. At that time, economic sanctions were subordinate to military policy in times of war and were intended mainly to reduce the economic strength of targeted states ([Kern \(2009\)](#)).¹⁰ Laws of war were based on the “Rousseau-Portalis” doctrine—that civilians could not be

¹⁰There were some exemptions. In the 19th century there were signs that economic pressure could be used as a weapon short of war. European nations and the US used “pacific” i.e. peaceful, blockades (also known as “gunboat diplomacy”) to intimidate other, less powerful states, protect their citizens and property abroad and enforce debt repayments. These blockades involved deployment of a naval force by a country or coalition to interrupt commercial intercourse with ports or coasts of a state with which these countries were not at war. That demonstration of force was almost always sufficient to bend the target country to their will, and ships rarely had to use firepower. Pacific blockades occurred at least 22 times between 1827 and 1913. Almost without exception, the targeted countries were small ([Davis and Engerman \(2003\)](#)). Targeted countries included small nations in Europe and emerging nations in Latin America and Asia such as Turkey in 1827; Portugal in 1831; the Netherlands in 1832–1833; Colombia in 1834; Panama in 1837; Mexico in 1838; Argentina in 1838–1840; San Salvador in 1842; Nicaragua in 1842 and again in 1844; Argentina in 1845–1850; Greece in 1850; Japan in 1853-1854, Sicily in 1860–1861; Brazil in 1862–1863; Bolivia in 1879; China in 1884–1885; Greece, again, in 1886; Zanzibar in 1888–1889; Siam in 1893; Greece, yet again, in 1897; and Venezuela in 1902–1903; see [Davis and Engerman \(2003\)](#), [Washburn \(1921a\)](#), [Washburn \(1921b\)](#), [Washburn \(1921c\)](#). Targeting countries included Austria, Britain, Chile, France, Germany, Italy, Russia and the United States.

held responsible for the actions of their governments and private property should remain inviolable in times of war (Mulder (2022)).¹¹ As a result, economic sanctions were mainly implemented through direct blockades of an enemy’s coastline and ports.¹²

Use of economic sanctions changed in early twentieth century as globalisation and advances in technology challenged traditional military techniques. Global trade and investment made it easier for enemy states to circumvent blockades by trading through neutral countries, while submarines and aerial warfare eroded the effectiveness of blockading ports and coastlines. As a result, the scope of economic sanctions increasingly extended beyond the actual area of combat, rendering it impossible for neutral states to remain insulated (see Kern (2009) and Doxey (1996)).

World War I was then a turning point. Economic sanctions played a defining role in the international order when the Allies embargoed the Central Powers (see Mulder (2022) and for detail Annex section A.3).¹³ Estimates suggest that these sanctions were responsible for more civilian deaths than both aerial strikes and chemical weapons during the conflict.

The interwar period was one of deglobalization and fragmentation into regional blocs, suggesting comparisons with today’s events. Officials believed that tools used against the Central Powers could now be used against violators of the Versailles Treaty, the principal peace treaty signed after World War I. Economic sanctions were administered by the League of Nations, the predecessor to today’s United Nations. Article 16 of the Covenant of the League authorized collective economic and military action against a state resorting to war in disregard of the provisions requiring states to settle disputes peacefully. This was seen as a measure of dissuasion to preserve the international order. Although such sanctions were more easily wielded against small countries, large countries were also targeted, or at risk of being targeted.¹⁴

¹¹For instance in the Crimean war (1853-1856) Her Majesty’s Treasury fulfilled Britain’s financial obligations to Russia, just as Russia fulfilled its. Similarly, private property was not seized in the Italian wars of independence of 1848-1849, 1859 and 1866, nor in the German wars of unification of 1866 and 1870. A contrasting example is Bismarck’s Lombardverbot against Russian securities in 1887.

¹²A blockade is a military operation that blocks all maritime movement to or from a port or coasts.

¹³The Central Powers, also known as the Central Empires, were one of two main coalitions that fought in World War I; it included the German Empire, Austria-Hungary, the Ottoman Empire and the Kingdom of Bulgaria. They were also known as the Quadruple Alliance. The Allies or Entente Powers were the other main coalition led by France, the United Kingdom, Russia, Italy, Japan, and the United States.

¹⁴Specifically, Article 16 of the Covenant of the League of Nations stressed that “should any Member of the League resort to war. . . against all other Members of the League” it would be immediately subject to “the severance of all trade or financial relations. . . and the prevention of all financial, commercial or

Sanctions adopted under the auspices of the League of Nations suffered however from lack of oversight and a failure to apply similar legal principles of liability. This changed during World War II. Decision making became more centralized amongst the Allied powers; this allowed for more effective policies targeting strategic supplies of the Axis powers and for the imposition of extra-territorial jurisdiction on third-country trade with targeted states.

Use of economic sanctions then increased dramatically after World War II (Davis and Engerman (2003)). This increase went hand in hand with a vast increase in the number of international agreements designed to protect civil, political and other human rights. Breaches served as a justification for the imposition of sanctions. In many instances, such sanctions were imposed unilaterally—frequently by the United States. Starting from the 1990s, they were also imposed multilaterally by international coalitions often led by the United States. Whether these cases are well suited for shedding light on current events is debatable, however. Between 1914 and 1945, sanctions were typically taken to disrupt military initiatives or as part of a broader war effort, similar to sanctions imposed on Russia following its invasion of Ukraine in February 2022. After 1945, in contrast, economic sanctions were applied in other contexts: of 1,101 cases between 1945 and 2021 documented in Felbermayr et al. (2020) and Kirikakha et al. (2021), almost half aimed to preserve democracy or human rights or other related goals. Almost 90% of sanctions targeted developing economies smaller than today’s Russia.¹⁵ Moreover, post-World War II sanctions imposed on large emerging economies, such as China and Soviet Russia, hit socialist or planned economies whose structure is not well suited for testing the predictions of models based on the operation of market mechanisms.¹⁶ Sanctions against large G7

personal intercourse between the nationals of the covenant-breaking State and the nationals of any other State, whether a Member of the League or not.” It further adds that “it shall be the duty of the Council [the predecessor to today’s Security Council of the United Nations] in such case to recommend to the several Governments concerned what effective military, naval or air force the Members of the League shall severally contribute to the armed forces to be used to protect the covenants of the League.” See *The Avalon Project*, Yale Law School, url: https://avalon.law.yale.edu/20th_century/leagcov.asp.

¹⁵Davis and Engerman observe that the GDP of the sender (or principal initiator) of sanctions was nearly always over ten times that of the target and in the majority of cases more than 50 times greater (Davis and Engerman (2003)). However, large advanced economies were also occasionally targeted, such as Australia, Austria, Canada, the European Economic Community, European Union, France, Germany, Italy, Japan, the Netherlands, New Zealand, Norway, Sweden, Switzerland, the United Kingdom, and the United States; more on this below.

¹⁶For example, 22 of the 24 sanction episodes against China took place before its accession to the World Trade Organization in 2001, including 7 cases after the Tiananmen Square protests of 1989. Almost half of sanctions against Russia occurred when it was still the USSR, while most of the remaining sanctions were taken after Russia invaded Crimea in 2014.

economies were imposed for reasons unrelated to war and did not feature the scope and scale of those imposed on today's Russia.¹⁷

Not even Russia's invasion of Crimea in 2014 is a clear-cut case. Although significant trade and financial sanctions were imposed, these were not accompanied by systematic sanctions affecting military equipment, inputs or assistance, unlike sanctions taken after Ukraine's invasion.¹⁸ Nor were the sanctions as intense.¹⁹

In sum, the intensity and scale of sanctions imposed on a country like today's Russia is plausibly without precedent since World War II.

2.2 Data Construction

We start by compiling a list of economic sanctions from [Hufbauer et al. \(2009\)](#) and [Mulder \(2022\)](#). We identify features of these sanctions using primary, contemporary and secondary sources, such as the archives of the League of Nations, articles in contemporary newspapers and academic journals, and scholarly accounts (see [Appendix C](#) for details on the sources).

Our database contains 128 cases of sanctions imposed during 22 episodes between 1914 and 1945 ([Appendix C](#) provides a summary of the episodes). We have information on the country targeted; the country or coalition of countries imposing the sanctions; on whether the target country attacked a third country;²⁰ on whether sanctions were actually enforced or were only threatened; on whether cases were directly linked to war operations (or not, as in cases of sanctions imposed in response to strikes);²¹ on whether sanctions were introduced for the first time against a target country or, alternatively,

¹⁷For instance, France was sanctioned by 9 countries in 1995-6 for resuming nuclear tests. The UK faced sanctions from Spain between 1966 and 1984 in the context of its territorial dispute over Gibraltar, as well as in 1982 from Argentina in the context of its territorial conflict over the Falkland (Malvinas) Islands.

¹⁸Within the G7, the US, Japan and Canada did not impose sanctions on sales of military equipment to Russia after its invasion of Crimea, although they imposed trade and/or financial sanctions

¹⁹For instance, the freezing of the official reserve holdings in dollars and euros of the Central Bank of Russia was unprecedented for a country of this size, as was Russia's "de-swifiting"—the suspension of access to SWIFT, a messaging network essential to the global interbank payment system—of major commercial Russian banks. Moreover, the measures taken are designed as "smart sanctions"—they are not intended to harm Russia as a whole but are targeted mostly at individuals, firms or banks with direct political or military ties.

²⁰These are also useful cases to look at as parallels can be drawn with today's Russia (i.e. sanctions were taken by the G7 and the EU against a target country (Russia) that invaded a third country (Ukraine).

²¹These are still useful cases to consider as a way of disentangling the exchange rate effects of sanctions from those of war operations, especially when the latter exactly coincide with the former.

whether their scale and/or intensity was increased or reduced.

We code the type of sanctions taken and the dates when they were introduced and lifted. [Itskhoki and Mukhin \(2022\)](#) argue that such timing is crucial for understanding the evolution of the rouble’s exchange rate against the dollar in the early phases of the Russian-Ukraine episode. They observe that initial sanctions imposed by the West, such as the freeze on the Central Bank of Russia’s foreign exchange reserves and threats of blocking Russian exports of gas and oil, weakened the rouble initially; but then that tougher sanctions on imports than exports, in the context of surging prices of oil and other commodities—of which Russia is a large exporter—contributed to the rouble’s subsequent recovery. Only precise dating and information on sanction type can distinguish the first response from the second.

We enumerate 6 types of sanctions: those involving a naval blockade or an embargo that broadly disrupts commercial relations; restrictions on imports of the target country;²² restrictions on exports of the target country;²³ freezes of financial (bonds, equities, direct investments, bank deposits) and real (property) assets of the target country held in the sender country;²⁴ exclusion of the target country’s government or companies from the sender country’s capital markets; and arms embargoes.

[Table B.1](#) compares our data with other databases on sanctions. Most existing databases (e.g. [Kirikakha et al. \(2021\)](#), [Felbermayr et al. \(2020\)](#), [Clifton et al. \(2014\)](#), [Von Soest and Wahman \(2015\)](#)) focus on the post-1945 period. Our data cover the period prior to 1945. This is similarly true of the list of episodes of [Hufbauer et al. \(2010\)](#), albeit with three differences. First, we have a larger number of cases; second, we provide a classification and coding of sanctions by type; third, we offer more extensive coverage of pre-1945 cases involving asset freezes, to which earlier studies (such as [Hufbauer et al. \(2010\)](#) and [Mulder \(2022\)](#)) pay less attention. This last extension is important insofar as asset freezes play a role in current sanctions on Russia.

²²This was often a ban on imports of oil, steel or iron ore or selective restrictions on specific military equipment needed to support the target country’s military and productive capacity. There were also bans on consumer goods. See [Appendix C](#) for details.

²³The aim was to reduce the target country’s ability to purchase needed supplies in global markets, while at the same time providing firms of the the sender country’s protection akin to a tariff.

²⁴This consisted mainly of the asset freezes imposed by the US under the Trading with the Enemy Act of 1917, both during World War I and World War II; see below.

2.3 Stylized Facts

Figure A.2 puts countries that faced economic sanctions in World War I on a map featuring 1914 national borders. Black denotes sanctioned countries, light grey countries that were not sanctioned. The figure highlights the war blockade imposed by the Allies on the Central Powers (the German Empire, Austria-Hungary, the Ottoman Empire and the Kingdom of Bulgaria). That blockade essentially resulted in the merchant fleet of the Central Powers being banished from the oceans. International telegraph cables were also cut, further complicating overseas trade by these nations.

A similar map for the interwar period is shown in Figure 1. Besides sanctioned and non-sanctioned countries (again in black and light grey, respectively) the map shows countries that faced threats of sanctions (in dark grey shade)—typically at the initiative of the League of Nations. It makes clear that economic sanctions no longer centered on Europe but now extended to other continents. Many of these episodes involved disputes over national borders and territorial claims—unresolved or created by post-World War I peace settlements—resembling today’s Russia and Ukraine. Countries threatened by sanctions included Yugoslavia in its conflict with Albania in 1921; Turkey during the Greco-Turkish war of 1919-1922; Italy in the context of the Corfu Incident of 1923; Turkey in its dispute with Iraq and the UK over Mosul in 1925; Greece after the Incident at Petrich of 1925; the USSR in the context of the ARCOS Affair of 1927; Japan after the Mukden Incident and its invasion of Manchuria of 1931; Germany after the introduction of the first antisemitic laws of 1933; and the USSR in the Metro-Vickers Affair of 1933.²⁵ Countries experiencing actual economic sanctions included Germany during the occupation of the Ruhr in 1923-1925; Hong-Kong during the Canton-Hong-Kong General Strike of 1925; Bolivia and Paraguay during the Chaco War of 1932-1935; and Italy after its invasion of

²⁵Yugoslavia’s conflict with Albania of 1921 followed from Yugoslavia’s support for the establishment of the Republic of Mirdita (a short-lived unrecognized republic declared in northern Albania) in its efforts to obtain a more advantageous border demarcation. The Greco-Turkish war of 1919-1922 occurred after partitioning of the Ottoman Empire and Greece and Turkey’s conflicting territorial claims over Smyrna and Anatolia. The Corfu Incident was when Italy bombarded and occupied Greek Corfu. The Mosul question was a territorial dispute between Turkey and the United Kingdom (later Iraq) over possession of formerly Ottoman Mosul Vilayet. The Incident at Petrich was a Greek-Bulgarian dispute that resulted in a brief invasion of Bulgaria by Greece near the border town of Petrich in 1925. The ARCOS Affair involved the All-Russian Co-operative Society—the main body in charge of Anglo-Soviet trade — which British authorities accused of conducting subversive activities. The Mukden Incident was a false flag operation staged on 18 September 1931 by the Japanese army as a pretext for Japan’s invasion of Manchuria. The Metro-Vickers Affair was an international diplomatic crisis precipitated by the trial of British employees of Metropolitan-Vickers by the Soviet Union on charges of economic subversion and espionage. See Appendix C for more details.

Abyssinia in 1935-1937.²⁶ In several episodes (the Petrich Incident, the Mukden Incident, Abyssinia), a coalition of countries (often under the auspices of the League of Nations) imposed or threatened to impose sanctions against a country that had invaded a third country—much as G7 and EU countries did against Russia in 2022.

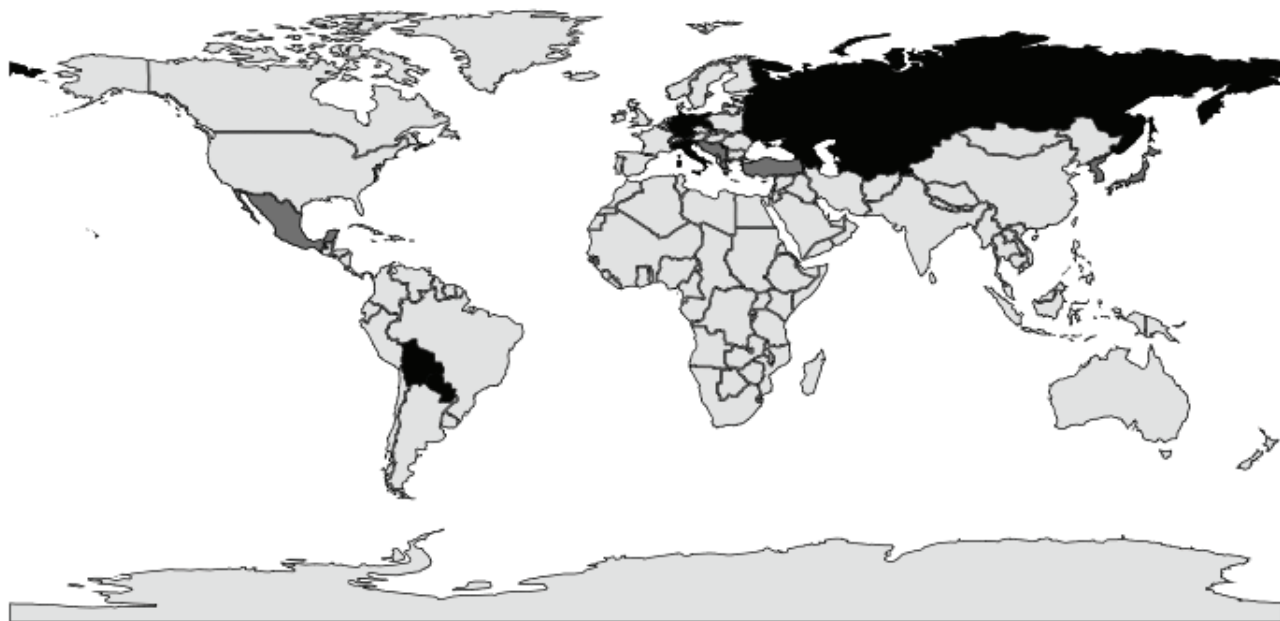


Figure 1: Countries sanctioned: 1919-1938.

Notes: The figure puts countries sanctioned during the interwar period on the map according to 1938's national borders. The black shade corresponds to countries which were targeted by economic sanctions, the dark grey shade shows countries that were threatened by sanctions and the light grey shade countries that were not sanctioned.

The map for World War II is shown in [Figure A.3](#). Blockades and other sanctions imposed on the Axis powers (Germany, Italy and Japan) and counter-blockades imposed on the UK (all shown in black) are visible. No fewer than 30 countries, including the Axis Powers, had assets in the US frozen by the Trading with the Enemy Act.

[Figure 2](#) compares the scale of sanctions over the 1914-1945 period with those after World War II. It shows the average share of global GDP (in percentages) across sanctioned countries between 1914 and 1945 (grey bars), 1945 and 2018 (blue bars) and of today's

²⁶The Occupation of the Ruhr was military occupation of Germany's Ruhr region by France and Belgium between January 1923 and August 1925 in response to Germany defaulting on reparation payments foreseen by the Treaty of Versailles. The Canton-Hong Kong strike was a strike and boycott in British Hong Kong and Guangzhou (Canton) from June 1925 to October 1926 after a shooting of Chinese protesters which led to an anti-British boycott. The Chaco War was a conflict between Bolivia and Paraguay over the control of the northern part of the Gran Chaco region thought to be rich in oil. The Italo-Ethiopian War was a war of aggression between Italy and the Ethiopian Empire (also known as Abyssinia) from October 1935 to February 1937, ending with Italy's occupation of Ethiopia. See [Appendix C](#) for more details.

Russia (red bar), respectively.²⁷

Countries facing economic sanctions during World War I and the interwar period were of a size comparable to today’s Russia—about 3% of global GDP. Countries facing economic sanctions after World War II were 10 times smaller on average, accounting for about 0.3% of global GDP.²⁸ This underscores that the breadth and scope of sanctions taken against a country of such systemic importance as Russia is essentially unprecedented since World War II.²⁹

Figure A.4 scales sanctions instead by global trade. The result is similar: countries facing economic sanctions during World War I and the interwar period accounted for similar shares of global trade as today’s Russia (about 2-3% on average).³⁰ Countries targeted after World War II were an order of magnitude smaller —accounting on average for about 0.2% of global trade.³¹

Figure 3 and Figure A.5 complement the picture, showing the evolution of the share of global GDP and global trade (in percentages) of countries sanctioned between 1914 and 2018/9. For the 1914-1945 period, the dark grey bars correspond to the share of countries targeted by actual sanctions; the light grey bars to the share of countries so threatened. For the period 1945-2018/9, the light grey line corresponds to sanctions taken from the Global Sanctions Database (Felbermayr et al. (2020) and Kirikakha et al. (2021)); the dark grey bars show filtered cases that are closest to the spirit of today’s sanctions on Russia.³² The pictures make clear that the end of World War II was a turning point. The scale of sanctions relative to global GDP or trade was large if one considers all sanction

²⁷GDP shares were estimated using data in USD 2011 from the Maddison Project (de Pleijt and van Zanden (2020)). Linearly interpolated observations or observations for the closest available years were used when GDP data were missing, typically for reasons related to war. Post-1945 cases were taken from the Global Sanctions Database (Felbermayr et al. (2020) and Kirikakha et al. (2021)).

²⁸The dark blue bar corresponds to all cases, the light blue bar to cases where the objective was to (i) “end war”, “prevent war”, or “territorial conflict” and sanction measures targeted (ii) military weaponry and trade or finance. This filter removes cases where the objective of sanctions was preserving democracy, protecting human rights, engineering policy changes or other similar goals by focusing on cases where sanctions targeted military weapons and international trade or finance, much like those on today’s Russia.

²⁹One dimension not taken into account by this measure is the breadth of the sanctions. Although on average economies smaller than Russia were targeted after 1945, the share of economic activity targeted in the countries in question was larger than the “smart” sanctions currently imposed on Russia. In addition, larger economies may have better outside options for circumventing sanctions.

³⁰Trade shares were estimated using historical data from the RICardo Project (Dedinger and Girard (2017)) for the period 1914-1938 and from the International Monetary Fund’s Direction of Trade Statistics database for the period 1945-2019.

³¹The countries in question are defined in the same way as above.

³²These cases are restricted to those where (i) the objective of sanctions was to “end war,” “prevent war,” or “territorial conflict” and (ii) measures targeted arms and international trade or financial transactions.

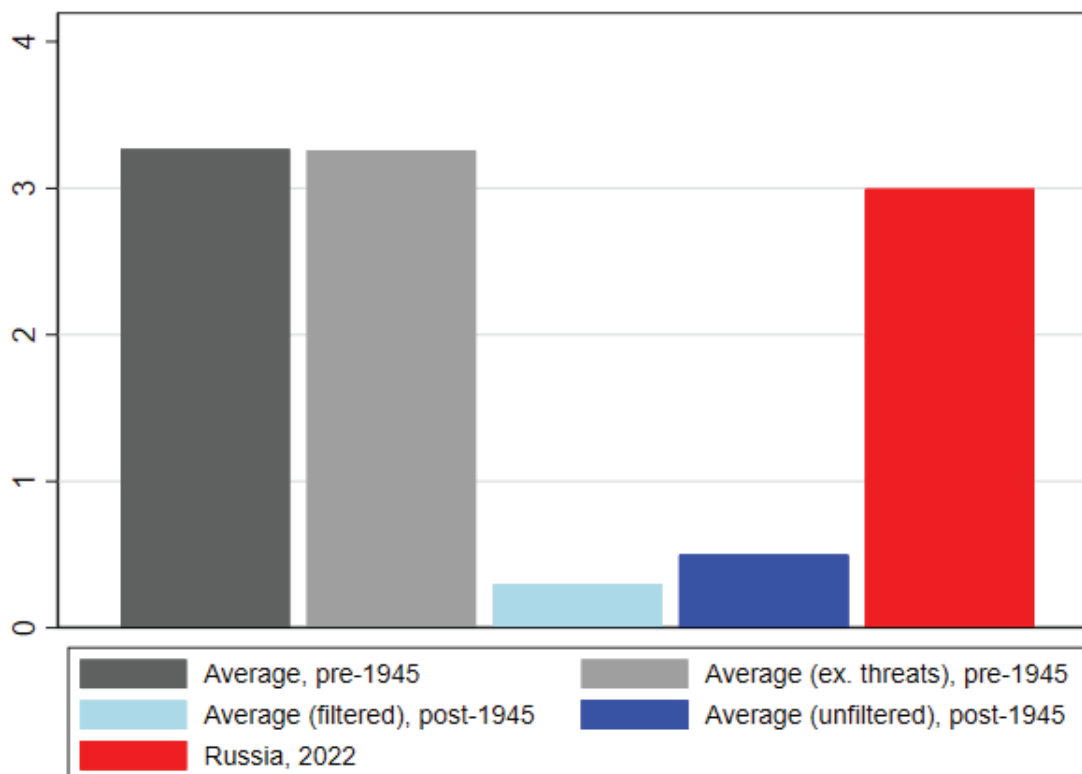


Figure 2: Average share of global GDP across sanctioned countries in selected periods. **Notes:** The figure shows the average share of global GDP (in percentages) across sanctioned countries between 1914 and 1945 (grey bars), 1945 and 2018 (blue bars) and of today’s Russia (red bar), respectively. GDP shares were estimated using historical GDP data in USD 2011 taken from the Maddison Project database (de Pleijt and van Zanden (2020)). Linear interpolated observations or observations for the closest years available were used when GDP data were missing from the database. Post-1945 cases of sanctions were taken from the Global Sanctions Database (Felbermayr et al. (2020) and Kirikakha et al. (2021)). The dark blue bar corresponds to all cases. The light blue bar to cases restricted to those where (i) the objective of sanctions was to “end war”, “prevent war”, or “territorial conflict” and (ii) measures targeted arms and international trade or financial transactions—in the spirit of today’s sanctions on Russia.

cases after 1945 (the light grey line). But these include a large number of cases where sanctions were imposed for reasons completely different from those motivating sanctions on today’s Russia. When focusing instead on cases that are close analogues (the dark grey bars), the contrast is striking. The breadth and scale of economic sanctions against today’s Russia is closer to pre-1945 than post-1945 patterns.

Finally, Figure A.6 breaks down 1914-1945 sanctions by type, distinguishing trade embargoes, import restrictions, export restrictions, asset freezes, exclusion from financial markets, and embargoes on arms. In total, there are 128 cases, of which asset freezes were the most common type, with 38 cases, followed by import restrictions (32 cases), export

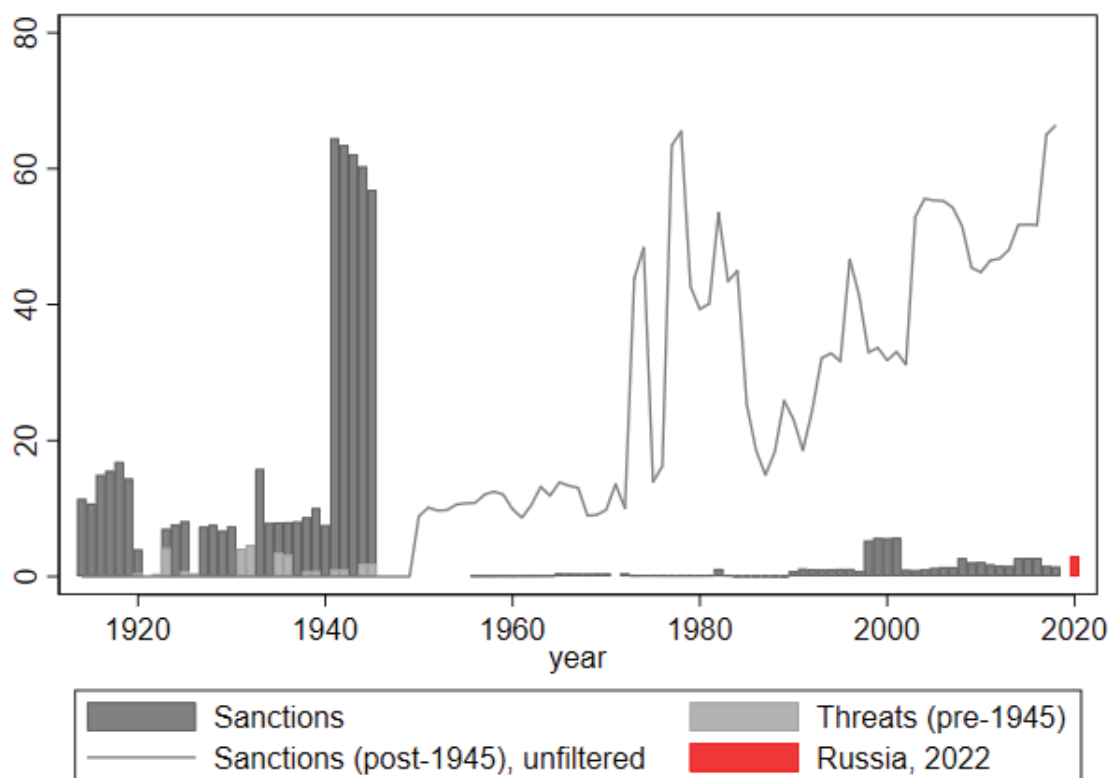


Figure 3: Share of global GDP under sanctions: 1914-2018.

Notes: The figure shows the evolution of the share of global GDP (in percentages) of countries sanctioned between 1914 and 2018. For the 1914-1945 period, the dark grey bars correspond to the share of countries targeted by actual sanctions; the light grey bars to the share of countries threatened by sanctions. Two estimates are shown for the period 1945-2018. The light grey line corresponds to all cases of sanctions taken from the Global Sanctions Database (Felbermayr et al. (2020) and Kirikakha et al. (2021)); the dark grey bars to cases restricted to those where (i) the objective of sanctions was to “end war”, “prevent war”, or “territorial conflict” and (ii) measures targeted arms and international trade or financial transactions—in the spirit of today’s sanctions on Russia. GDP shares are estimated using historical GDP data in USD 2011 taken from the Maddison Project database (de Pleijt and van Zanden (2020)). Linear interpolated observations or observations for the closest years available were used when GDP data were missing from the Maddison Project database.

restrictions (18 cases) and general naval trade embargoes (16 cases). There were 2 cases of financial market exclusion (Bolshevik Russia in 1918-1920 and Italy in 1935-1936).³³

³³Since there are so few cases we do not try to obtain empirical estimates of the exchange-rate effects of financial market exclusions below. We do not examine cases of arms embargoes either because theory provides no guidance on their predicted exchange rate-effects.

3 Empirical Framework and Hypotheses

3.1 Empirical Framework

To test the predictions of recent theoretical models, we estimate the impact of sanctions on the exchange rate using a panel local projections methodology following [Jordà \(2005\)](#) and [Jordà and Taylor \(2016\)](#). We obtain OLS estimates for each horizon $k \in [0, K]$ of the following model:

$$s_{i,t+k} - s_{i,t-1} = \alpha_i + \alpha_t + \beta_k^j \text{Sanction}_{i,t}^j + \Gamma' X_{i,t} + \varepsilon_{i,t+k} \quad (1)$$

where $s_{i,t}$ is the natural logarithm of $1 +$ the exchange rate of country i in week t defined as the number of currency i units per unit of US dollar.³⁴ We use the US dollar as numéraire instead of sterling because this allows us to keep the UK in our sample.³⁵ Direct exchange rate quotes of the currency of targeted countries against those of the targeting countries are not systematically available.³⁶ Moreover, α_i are currency fixed effects, and α_t are year fixed-effects and week fixed-effects, respectively. The β_k^j coefficients capture the dynamic response up to horizon k of the exchange rate of country i to the introduction of sanctions of type j in week t . The error term $\varepsilon_{i,t+k}$ is robust to autocorrelation and heteroskedasticity.

We use data from [Vicquéry \(2022\)](#) for our dependent variable $s_{i,t}$. [Vicquéry \(2022\)](#) digitized printed sources on the London foreign-exchange market in peacetime over two centuries. Weekly quotes for more than 40 currencies are available for the interwar period. We expand the database to World War II. During the war, exchange rate quotes of currencies of countries at war with Britain were no longer quoted in London. We therefore turn to the Swiss market, which was active in wartime, and collect data on weekly official and black-market quotes published in the Swiss press in the period 1939-1942. We use data from Global Financial Data, a commercial data provider, for World War I and the period 1943-1945.³⁷ [Appendix D](#) provides details on the data sources for

³⁴An increase in s_i therefore means that the exchange rate of currency i depreciates vis-à-vis the US dollar.

³⁵The UK was both a targeting and targeted country in this earlier era.

³⁶Exchange rates quotes are available against a few liquid currencies, including the US dollar, sterling, Swiss franc, etc. Since we have limited data on the dependant variable, we cannot estimate [Equation \(1\)](#) on a dyadic panel of observations.

³⁷Data provided by Global Financial Data lack information on the sources used and typically do not take into account parallel markets arising from capital controls.

each country in the sample by sub-period. We winsorize the data at the 1% level to deal with potential outliers and measurement errors.

$Sanction_{i,t}^j$ is a binary dummy variable equaling 1 in the week when a sanction of type j is taken against target country i and 0 otherwise, where j indicates either an import or export restriction, trade embargo, asset freeze, or exclusion from financial markets.

Along with sanctions, adverse events associated with wars, battlefield operations and other geopolitical tensions could have conceivably affected the exchange rate. We therefore include in $X_{i,t}$ two binary dummies which equal 1 in weeks when sanctions coincide with the outbreak of war or its ending, and 0 otherwise.

In robustness checks, we include in $X_{i,t}$ the monthly index of geopolitical risk of [Caldara and Iacoviello \(2022\)](#), which is available for the full sample. We include the measure of financial openness of [Quinn and Voth \(2008\)](#) and [Quinn and Toyoda \(2008\)](#) to control for the presence of restrictions on capital outflows and inflows by residents and nonresidents in country i and year t , which is available for the period 1914-1931. We control for trade openness, since the impact of sanctions on imports and exports might depend on the importance of international trade for the economy of the targeted nation.³⁸ We control for tariffs, since their impact on exports and imports is analogous to that of trade restrictive sanctions using annual panel data on the share of customs revenues (import duties) on import values from [Clemens and Williamson \(2004\)](#).³⁹ We add month fixed effects and country-year ($\alpha_i \times \alpha_t$) fixed effects as alternatives to our baseline specification which includes separate currency, year and week fixed-effects.⁴⁰ This provides multiple approaches to controlling for unobserved heterogeneity. We exclude sanctions taken by the League of Nations to examine whether their impact differs from sanctions taken by individual countries. We exclude threats of sanctions to restrict our estimates to actual sanctions.

In the next step, we analyse the economic mechanisms through which sanctions affect the exchange rate by obtaining OLS estimates of the following model:

³⁸We compute trade openness as the sum of imports and exports scaled by GDP taking data from [de Pleijt and van Zanden \(2020\)](#) and the RICardo project database [Dedinger and Girard \(2017\)](#). We used the last observations available when data were missing.

³⁹Tariffs increased globally in the wake of the Great Depression and the adoption by US Congress of Smoot-Hawley legislation in June 1930.

⁴⁰We do not consider country-week fixed effects, since they would be correlated with our sanction variables.

$$y_{i,t}^l - y_{i,t-1}^l = \alpha_i + \alpha_t + \beta^j \text{Sanction}_{i,t-1}^j + \Gamma' X_{i,t-1} + \varepsilon_{i,t} \quad (2)$$

where $y_{i,t}^l$ stands for the natural logarithm of macroeconomic variable l in country i in year t predicted by theory as a channel of transmission of economic sanction shocks. Notice the change in the frequency of the observations from weekly to annual, since most macroeconomic variables are not observed weekly. The remaining variables in Equation (2) are similar as those of Equation (1). Data on several variables relevant to the impact of sanctions on the exchange rate, such as the supply and demand of foreign currency, prices of foreign tradables, prices of domestic nontradables, etc. are not available for our sample period.⁴¹ We take annual data on exports and imports in US dollars (at constant 1913 exchange rates) from Federico and Tena-Junguito (2019) to measure $y_{i,t}^l$, which are available between 1914 and 1938 for most countries. Higher frequency data on external trade were available from e.g. Albers (2018), Ellison et al. (2020) and Mitchener et al.; however, the overlap with our sample of countries is limited.

We also make use of a survey conducted by the US Treasury in 1941 on foreign-owned assets in the United States (US Treasury Department (1945)). The purpose of this survey was to gather information for enforcing decisions by US authorities to freeze the assets of the Axis powers and other continental European countries. The data provide information on the value (in \$ million) of foreign-owned assets in the US, by countries of reported address of the owner, and by principal types of asset, as of 14 June 1941.⁴² We test whether the 1-month depreciation of the exchange rate of countries targeted by the US is positively associated with the value of assets frozen (scaled by GDP), as predicted by theory, using cross-sectional OLS.

3.2 Hypotheses

Itskhoki and Mukhin (2022) predict that export sanctions lead to depreciation of the currency of the target country i . This depreciation results from the reduction in the international purchasing power of the target country due to a reduction in the value of

⁴¹For instance, changes in official foreign exchange reserves would capture changes to the net supply of foreign currency stemming from official sources, not private sources.

⁴²The assets in question include bullion, currency and deposits; domestic securities; real property; interest in estates and trusts; foreign controlled enterprises; and other assets.

exports, which is the source of supply of foreign currency.⁴³ Since a lower supply of foreign exchange increases the value of the foreign currency and weakens the exchange rate, we expect $\beta_k^j > 0$ if $j =$ export restrictions in Equation (1) and $\beta_k^j < 0$ if $l =$ exports in Equation (2).

Sanctions on imports have the opposite effect, since they make foreign currency more abundant. Itskhoki and Mukhin (2022) predict that rationing imports reduces spending on imports and hence the demand for foreign currency. If exports remain stable, the exchange rate appreciates in order to bring the foreign exchange market into equilibrium. This appreciation results in substitution from desired but sanctioned import varieties toward less desired import varieties that are neither rationed nor demanded unless a stronger exchange rate brings down their relative price.⁴⁴ A related channel emphasized in Lorenzoni and Werning (2022) suggests that consumers in the target country will substitute from domestic varieties for desired but sanctioned import varieties. This raises the relative price of domestic goods, leading to real exchange rate appreciation. We would expect $\beta_k^j < 0$ if $j =$ import restrictions in Equation (1) and we would expect $\beta_k^j < 0$ if $l =$ imports in Equation (2).

Foreign asset freezes or exclusion from financial markets weaken the exchange rate, similar to import restrictions. A foreign asset freeze makes foreign currency scarcer. Financial autarky means that the supply of foreign currency is limited by export revenues, which makes for exchange rate depreciation.⁴⁵ Hence, we would expect $\beta_k^j > 0$ if $j =$ foreign asset freeze or exclusion from financial markets in Equation (1), and the depreciation of the exchange rate to be commensurate to the value of assets frozen.

⁴³The assumption is that exports are invoiced in foreign currency, in line with local or dominant currency pricing—these being conventional assumptions. This makes sense for Russia, which mainly exports commodities denominated in dollars.

⁴⁴This in turn reestablishes intertemporal trade balance, i.e. it satisfies the country's budget constraint.

⁴⁵Financial autarky requires foreign currency revenues from exports to be sufficient both to buy imports and satisfy domestic households demand for safe assets (if the domestic currency is unstable).

4 Preliminary Estimates

4.1 Basic Estimates

Figure A.7 shows exchange rate developments around selected sanction episodes. It plots the exchange rate (shown as solid black lines) 12 weeks before and 12 weeks after the imposition of sanctions (shown as red vertical lines). In some cases, the exchange rate depreciates after sanctions are imposed; in other cases, it appreciates; and in still other cases it remains flat. This underscores the importance of conditioning the impact on type of sanctions in order to identify their effect on the exchange rate, in line with theory.

Figure 4 therefore shows our preliminary estimates for the full sample. The figure displays the responses of the exchange rate (shown as a solid black line) in weeks 0 to 12 following the introduction of import restrictions (upper left panel), export restrictions (upper right panel), trade embargoes (lower left panel) and asset freezes (lower right panel). Positive values indicate that the exchange rate depreciates vis-à-vis the dollar. Local projections are obtained by OLS over the period 1914-1945; these control for year fixed effects, week fixed effects, and currency fixed effects. The dashed (dotted) lines are one (1.65) standard deviation confidence bands.

Import restrictions are associated with an appreciation of the targeted country's exchange rate on impact, in line with theory: restricting imports makes foreign currency relatively more abundant, as in the model of [Itskhoki and Mukhin \(2022\)](#), or leads to a substitution from desired but sanctioned import varieties towards other but less desired varieties, as in the model of [Lorenzoni and Werning \(2022\)](#), where both mechanisms lead to a stronger exchange rate to restore equilibrium. Note however that this appreciation is economically small—on the order of 0.2%, which is unsurprising given that exchange rates were heavily managed in this earlier era. It is also short-lived and disappears after one week.

In contrast, export restrictions lead to an exchange-rate response insignificantly different from zero. It could be that the theoretical prediction according to which export restrictions reduce the supply of foreign currency and thereby weaken the exchange rate is simply not confirmed by the data. Another possibility is that the effect of export restrictions is harder to identify: the imposition of export restrictions coincides with the imposition of import restrictions in almost three-quarters of the cases we consider; and

since the two types have opposite effects on the exchange rate, they net out in average coefficient estimated here.⁴⁶

This last interpretation is consistent with the response of the exchange rate to trade embargoes, which is also insignificantly different from zero. Insofar as trade embargoes limit both imports and exports, the two effects should offset, as they do.

The response of the exchange rate to asset freezes is a significant depreciation, which sits well with predictions that asset freezes make foreign currency scarce and weaken the exchange rate. The depreciation is in the order of 0.5% at its peak and persists until 4-8 weeks (depending on the significance level considered).

4.2 Robustness

In robustness checks, we control for geopolitical risk using the measure of [Caldara and Iacoviello \(2022\)](#) in [Figure A.8](#), to control for geopolitical tensions that could have affected the exchange rate. The estimated exchange rate impact of import restrictions, export restrictions, trade embargoes and asset freezes is unchanged. Next we control in [Figure A.9](#) for restrictions on capital outflows and inflows by residents and nonresidents, which might have affected the response of the exchange rate. We use the financial openness measure of [Quinn and Voth \(2008\)](#) and [Quinn and Toyoda \(2008\)](#) over the limited period (1914-1931) for which the measure is available. The results are again close to our basic findings. The estimates remain also broadly unchanged when controlling for trade openness, as in [Figure A.10](#), although the effect of import sanctions is more imprecisely estimated. It is not surprising that trade openness absorbs much of the effect of the sanctions in question, since these work through import volumes. In line with this interpretation, the estimated effects of asset freezes—which work through other transmission channels—are if anything even stronger. Controlling for trade tariffs does not affect our basic findings, though the estimated effect of import sanctions is again less robust; see [Figure A.11](#). It is understandably difficult to disentangle the effects of import sanctions from those of import tariffs, which both affect imports negatively and may lead to similar observed exchange rate effects.

Next we obtain estimates with month fixed effects (in [Figure A.12](#)) and with country-

⁴⁶Import restrictions occur in our sample more frequently than export restrictions (i.e. 32 vs. 18 cases). There are various sanction episodes where import but not export restrictions were imposed. The opposite is less frequent in our sample.

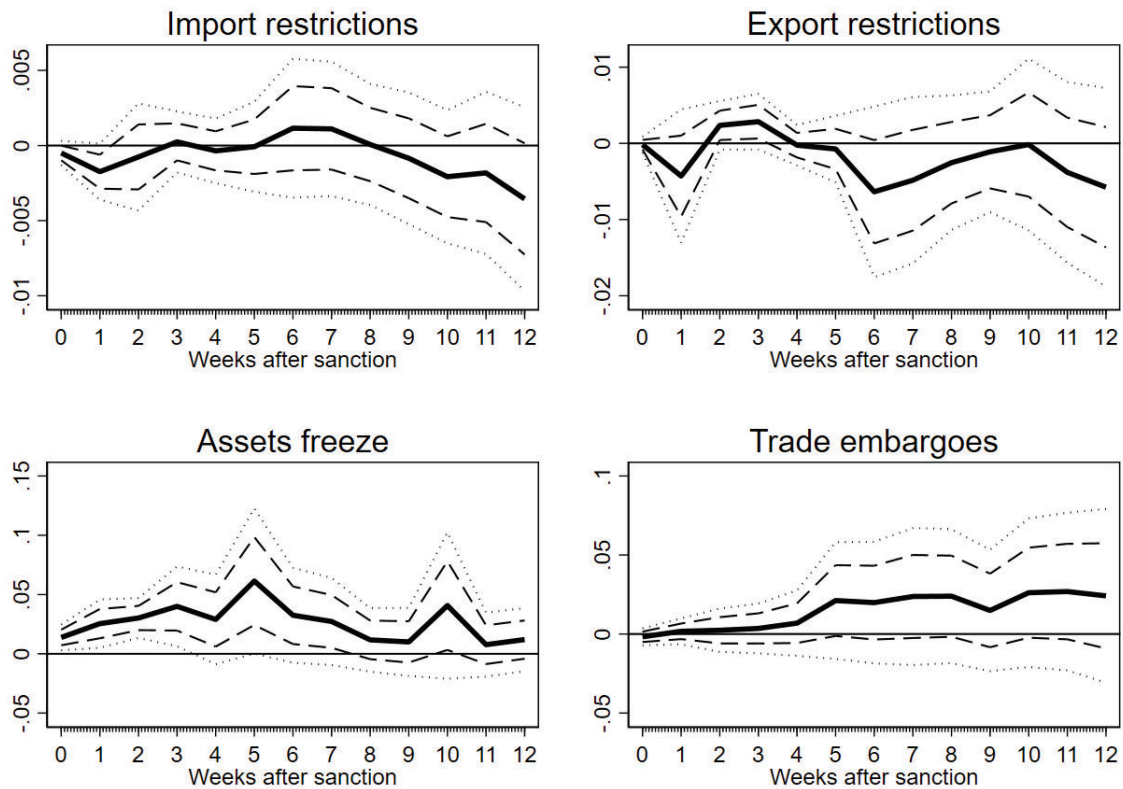


Figure 4: Basic estimates.

Notes: The figure shows the responses of the exchange rate (shown as a solid black line) in weeks 0 to 12 following the introduction of import restrictions (upper left panel), export restrictions (upper right panel), trade embargoes (lower left panel) and asset freezes (lower right panel). Positive values indicate that the exchange rate depreciates vis-à-vis the US dollar. The local projection estimates are obtained by OLS over the full sample (1914-1945); they control for year fixed effects, week fixed effects, currency fixed effects and dummies for coincidental war outbreaks and endings. 1 (1.65) standard-deviation confidence bands are shown as dashed (dotted) lines.

year ($\alpha_i \times \alpha_t$) fixed effects (in [Figure A.13](#)) in place of separate currency fixed effects and year fixed effects as alternative approaches to control for unobserved heterogeneity. The results are again close to our basic estimates.

Finally, we exclude in [Figure A.15](#) sanctions taken by the League of Nations to examine whether their impact differs from sanctions taken by individual countries, and we exclude in [Figure A.14](#) sanction threats to restrict our estimates to actual sanctions. In both cases our main results are unaltered.

4.3 Mechanisms

Next we analyze mechanisms through which sanctions affect the exchange rate by examining their impact on macroeconomic variables plausibly acting as transmission channels.

Figure A.16 shows the contemporaneous effect of import restrictions (dark grey bars) and embargoes (light grey bars) on the total imports of country i in year t . The baseline estimates of the left-hand side panel are obtained by OLS for the period 1914-1938. These control for year fixed effects, currency fixed effects, and dummies for war outbreaks and endings. The estimates of the middle panel for the same sample period control for currency fixed effects, dummies for war outbreaks and endings, and geopolitical risk. The estimates in the right-hand panel are for 1914-1931 and control for year fixed effects, currency fixed effects, dummies for war outbreaks and endings, and the financial openness measure of Quinn and Voth (2008) and Quinn and Toyoda (2008). 90% confidence intervals are shown as whiskers.

The baseline estimates and estimates controlling for geopolitical risk are consistent with the theoretical mechanisms in Itskhoki and Mukhin (2022) and Lorenzoni and Werning (2022). Import restrictions on a country lead to a fall in imports, which makes foreign currency more abundant and encourages substitution from desired but sanctioned import varieties towards less desirable domestic varieties. Both mechanisms lead to a stronger exchange rate as needed to restore equilibrium. The estimated effects are significant only at the 20% level of confidence, however. Sanctions have no effect on imports if we control for financial openness, but the estimates are obtained using only half of the sample and are therefore less reliable.

The effects of export restrictions and embargoes on total exports shown in Figure A.17 are mostly insignificant as well. It may be that exports do not react as predicted by theory. Or it may be that these effects are more difficult to identify, as discussed above. Yet another interpretation is that the effect of export sanctions on total exports is confounded by trade diversion. Exports from the target country to non-sanctioning countries might rise and offset falling in exports to sanctioning countries. This resonates with today's Russia—Russian oil sales (at premium prices) to China and India have increased in parallel to declining exports to EU countries, which have tried to reduce their dependence on Russian oil and gas.

Finally we examine whether the extent of the exchange rate depreciation that follows

asset freezes is positively associated with the value of assets frozen, again as posited by theory. [Figure 5](#) shows cross-sectional OLS estimates of the average 1-month exchange rate depreciation (in percent) of countries sanctioned by US asset freezes in World War II. Alternative asset definitions are considered, taking data from the survey conducted by US Treasury in 1941 ([US Treasury Department \(1945\)](#)). The left-hand bar shows the estimate with total assets (money, securities, real property, estates and trusts, foreign direct investments and other assets) scaled by domestic GDP; the middle bar the estimate with securities (money market instruments, bonds and equities) scaled by domestic GDP; and the right-hand side bar the estimate with money (bullion, currency and deposits) scaled by domestic GDP. 90% confidence intervals are shown as whiskers. Larger values of assets frozen are associated with more exchange rate depreciation, in line with theory. The basic estimate with total assets suggests that the magnitude of the depreciation moves one-to-one with the value of assets frozen.⁴⁷ Estimates for more specific asset categories (securities and money) point to even stronger effects.

5 Conclusion

We provide the first test of the predictions of recent theoretical studies of the impact of sanctions on the exchange rate. This involved building a database of exchange rates and sanctions spanning 1914-1945 when large as well as small economies were targeted, facilitating comparisons with today's Russia-Ukraine war episode. We estimated the dynamic response of the exchange rate in a panel of sanction episodes at weekly frequency using local projections, conditioning on the type of sanctions taken. We then examined mechanisms through which sanctions affect the exchange rate by estimating their effects on macroeconomic variables plausibly acting as transmission channels.

Our estimates suggest that import restrictions, trade embargoes and asset freezes have exchange rate effects consistent with theory. The effects of sanctions are channeled through imports and assets freezing, in line with theory. Our main results are robust when we control for geopolitical risk, financial openness, trade openness, trade tariffs, time-varying country fixed effects, and when we exclude sanctions imposed by the League of Nations or sanction threats from the estimation.

⁴⁷In other words, a 1 percentage of GDP increase in the value of assets frozen leads to a 1% stronger depreciation.

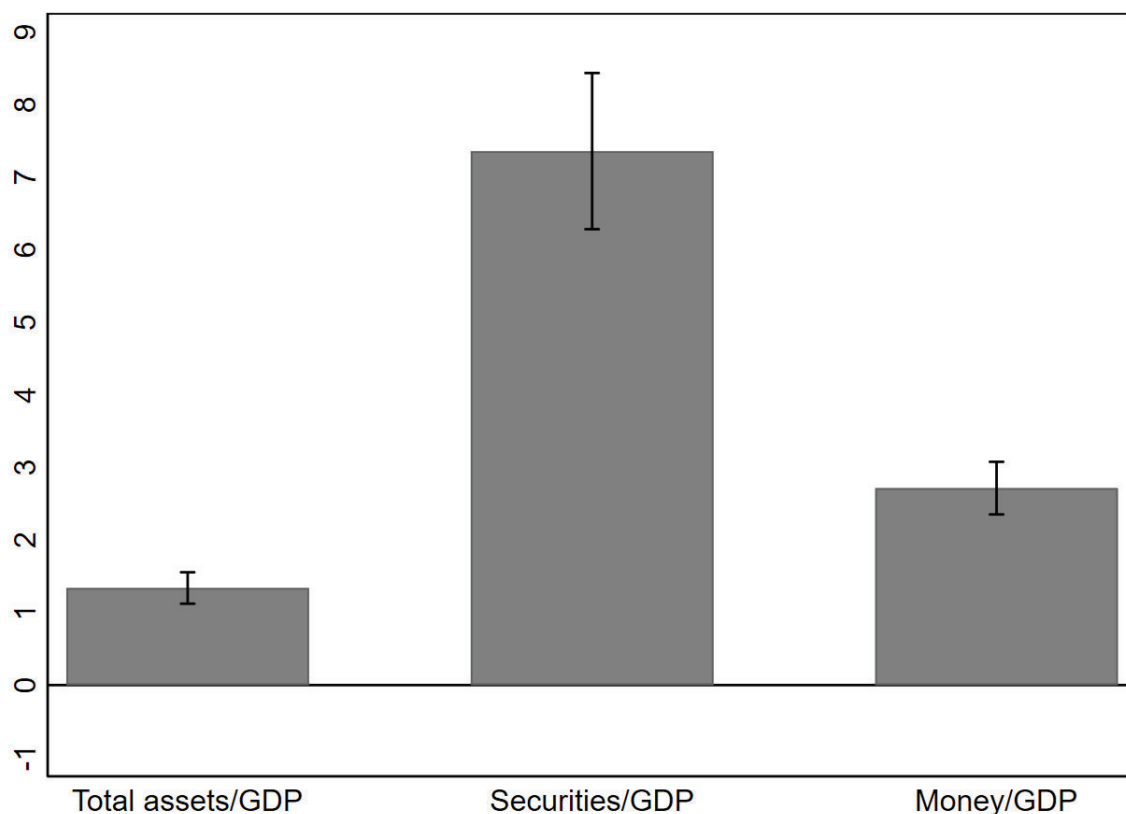


Figure 5: Transmission channels—Asset freezes.

Notes: The figure shows cross-sectional OLS estimates of the average 1-month exchange rate depreciation (in percent) of countries sanctioned by US asset freezes in World War II. Alternative asset definitions are considered, taking data from a survey conducted by the US Treasury in 1941 to estimate the value of assets held in the US by the countries sanctioned ([US Treasury Department \(1945\)](#)). The left-hand bar shows the estimate with total assets scaled by domestic GDP; the middle bar the estimate with securities (money market instruments, bonds and equities) scaled by domestic GDP; and the right-hand side bar the estimate with money (bullion, currency and deposits) scaled by domestic GDP. 90% confidence intervals are shown as whiskers.

These findings suggest that recent models of the effects of sanctions on the exchange rate do not just match developments in today’s Russia episode but have broader applicability. They suggest that exchange rate movements are not an adequate metric of the success or failure of sanctions but a reflection of the type and scale of measures taken.

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Appendix

A Figures

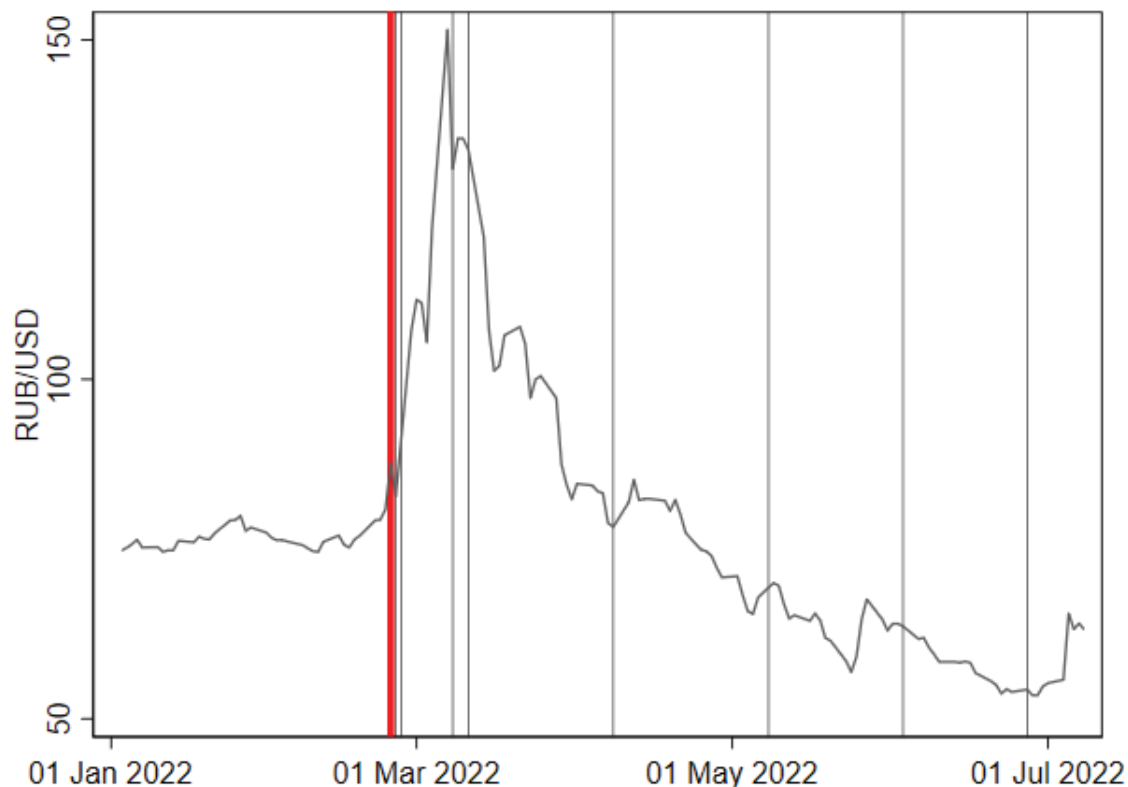


Figure A.1: Evolution of the RUB/USD exchange rate since Russia's invasion of Ukraine.

Notes: The figure shows the evolution of the RUB/USD exchange rate since Russia's invasion of Ukraine on 24 February 2022 (shown as a thick red line) and selected packages of sanctions (shown as thin black lines) adopted in the wake of the invasion:

24 February (US): Sberbank accounts closed; assets of Russian banks frozen, sanctions on state-owned entities and oligarchs. Restrictions on US exports of technology.

25 February (EU): Second sanction package. Financial sanctions on individuals and banks, restrictions on dual-use goods and technology exports.

26 February (G7): Removal from SWIFT of selected banks, freeze of Central Bank of Russia's reserves.

8 March (US): Ban on imports of Russian oil, liquefied natural gas and coal.

11 March (G7): Increases in import tariffs to eliminate Russia's WTO membership benefits.

8 April (EU): Fifth sanction package. Ban on imports of Russian coal (from August 2022). Expansion of export ban to jet fuel, quantum computers, semiconductors, and other products. Russian vessels prohibited from accessing EU ports.

8 May (G7): Phasing out dependence on Russian energy; export bans on key services; additional sanctions against Russian banks, oligarchs.

3 June (EU): Sixth sanction package. Eventual ban on imports of Russian crude oil and petroleum products.

27 June (G7): Crackdown on "back-filling" activities (finding other sources or markets for sanctioned supplies or resources)

Source: [Peterson Institute for International Economics](#).



Figure A.2: Countries sanctioned: 1914-1918.

Notes: The figure puts countries sanctioned during World War I on the map according to 1914's national borders. The black shade corresponds to countries which were targeted by economic sanctions, while the light grey shade shows countries that were not.

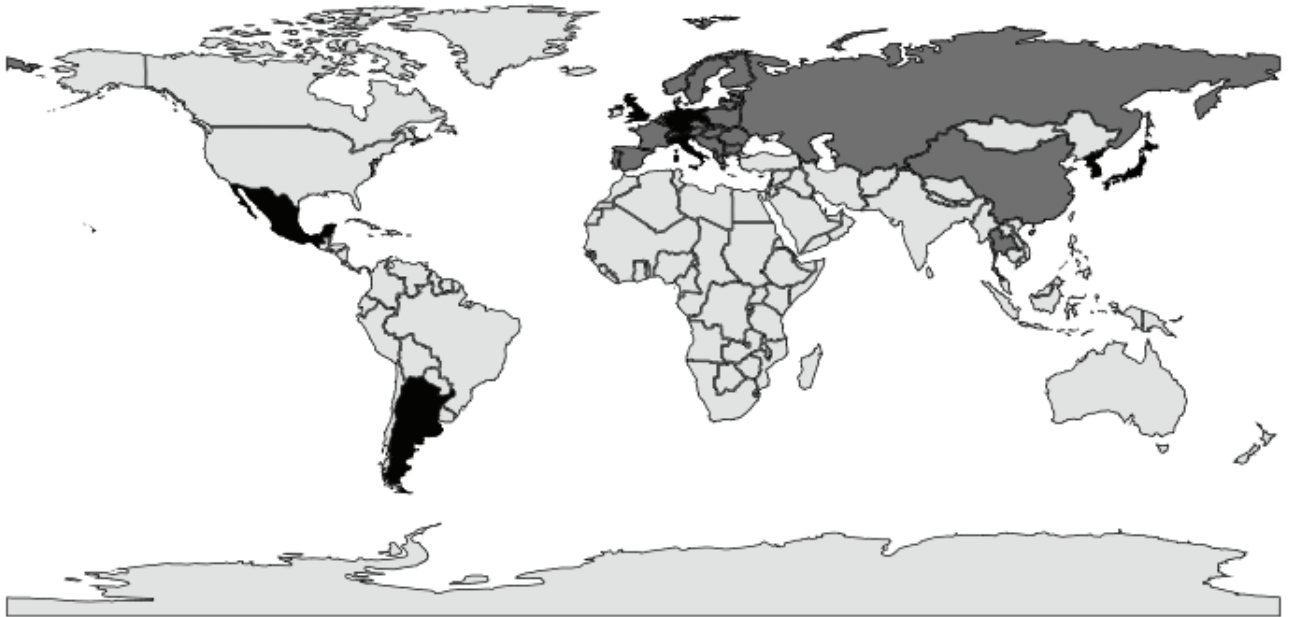


Figure A.3: Countries sanctioned: 1939-1945.

Notes: The figure puts countries sanctioned during World War II on the map according to 1938's national borders. The dark grey shade corresponds to countries which were targeted by asset freezes, the black shade shows countries that were targeted by other economic sanctions (e.g. trade restrictions) and the light grey shade countries that were not sanctioned. Sanctions for Mexico and Argentina shown on the map were threats, not actual sanctions.

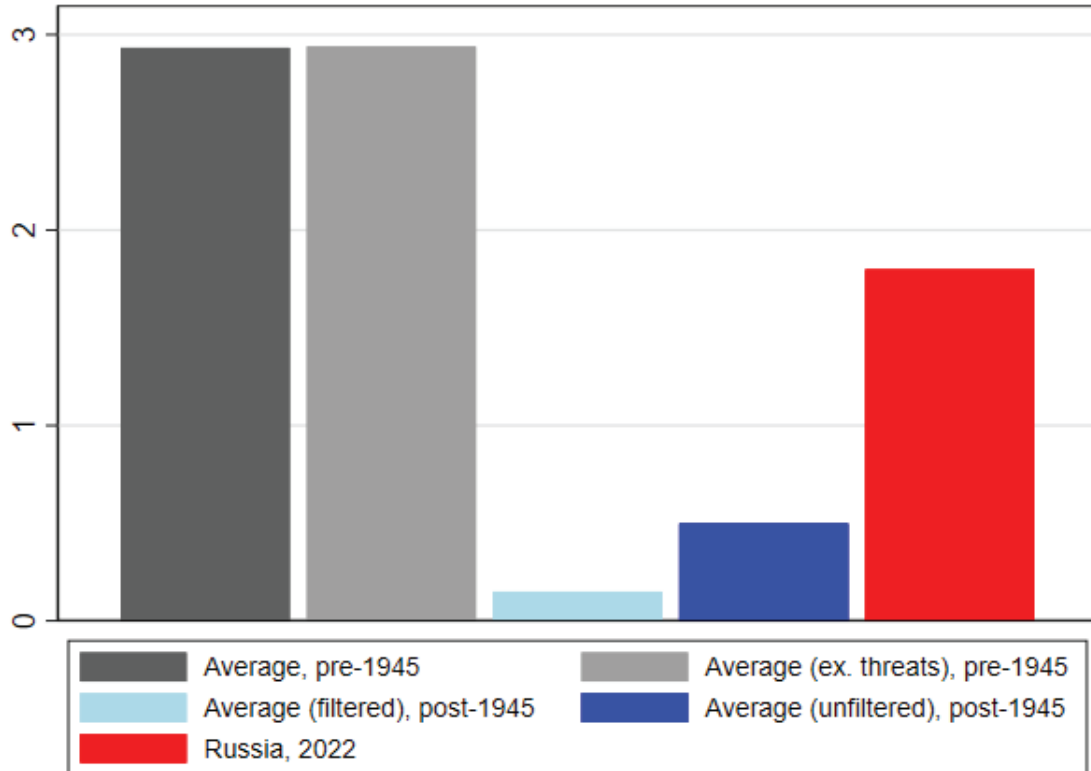


Figure A.4: Average share of global trade across sanctioned countries in selected periods. **Notes:** The figure shows the average share of global trade (in percentages) across sanctioned countries between 1914 and 1945 (grey bars), 1945 and 2018 (blue bars) and of today’s Russia (red bar), respectively. Trade shares were estimated using historical data from the RICardo Project database ([Dedinger and Girard \(2017\)](#)) for the period 1914-1938 and from the International Monetary Fund’s Direction of Trade Statistics database for the period 1945-2019. Post-1945 cases of sanctions were taken from the Global Sanctions Database ([Felbermayr et al. \(2020\)](#) and [Kirikakha et al. \(2021\)](#)). The dark blue bar corresponds to all cases. The light blue bar to cases restricted to those where (i) the objective of sanctions was to “end war”, “prevent war”, or “territorial conflict” and (ii) measures targeted arms and international trade or financial transactions—in the spirit of today’s sanctions on Russia.

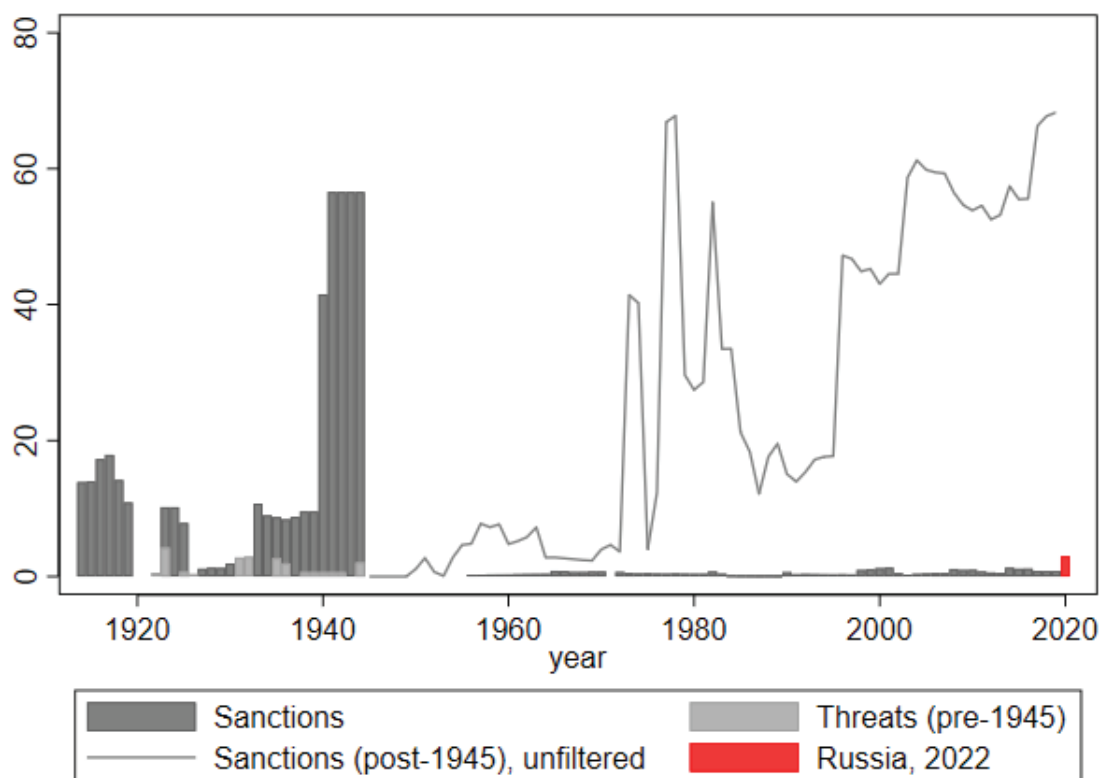


Figure A.5: Share of global trade under sanctions: 1914-2019.

Notes: The figure shows the evolution of the share of global trade (in percentages) of countries sanctioned between 1914 and 2019. For the 1914-1945 period, the dark grey bars correspond to the share of countries targeted by actual sanctions; the light grey bars to the share of countries threatened by sanctions. Two estimates are shown for the period 1945-2019. The light grey line corresponds to all cases of sanctions taken from the Global Sanctions Database (Felbermayr et al. (2020) and Kirikakha et al. (2021)); the dark grey bars to cases restricted to those where (i) the objective of sanctions was to “end war”, “prevent war”, or “territorial conflict” and (ii) measures targeted arms and international trade or financial transactions—in the spirit of today’s sanctions on Russia. Trade shares estimated using historical data from the RICardo Project database (Dedinger and Girard (2017)) for the period 1914-1938 and from the International Monetary Fund’s Direction of Trade Statistics database for the period 1945-2019.

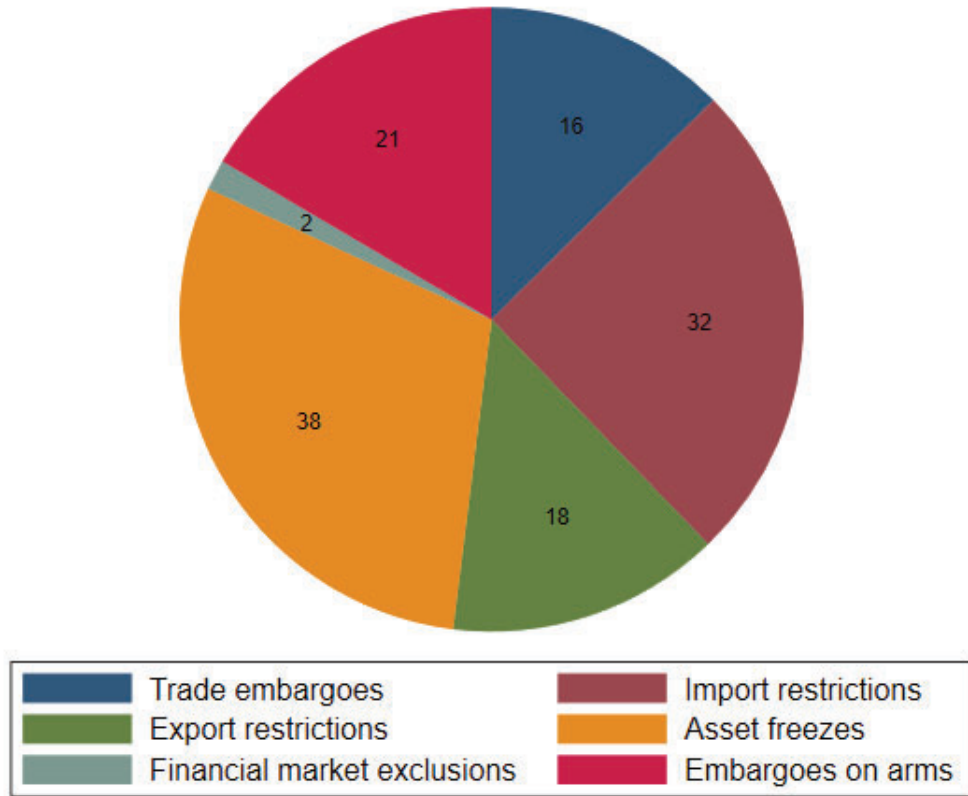


Figure A.6: Breakdown of sanctions by type: 1914-1945.

Notes: The figure breaks down sanctions by type distinguishing trade embargoes, import restrictions, export restrictions, asset freezes, exclusion of financial markets and embargoes on arms. The count of each type of sanctions is shown on its slice of the pie. There are in total 128 sanction-observations.

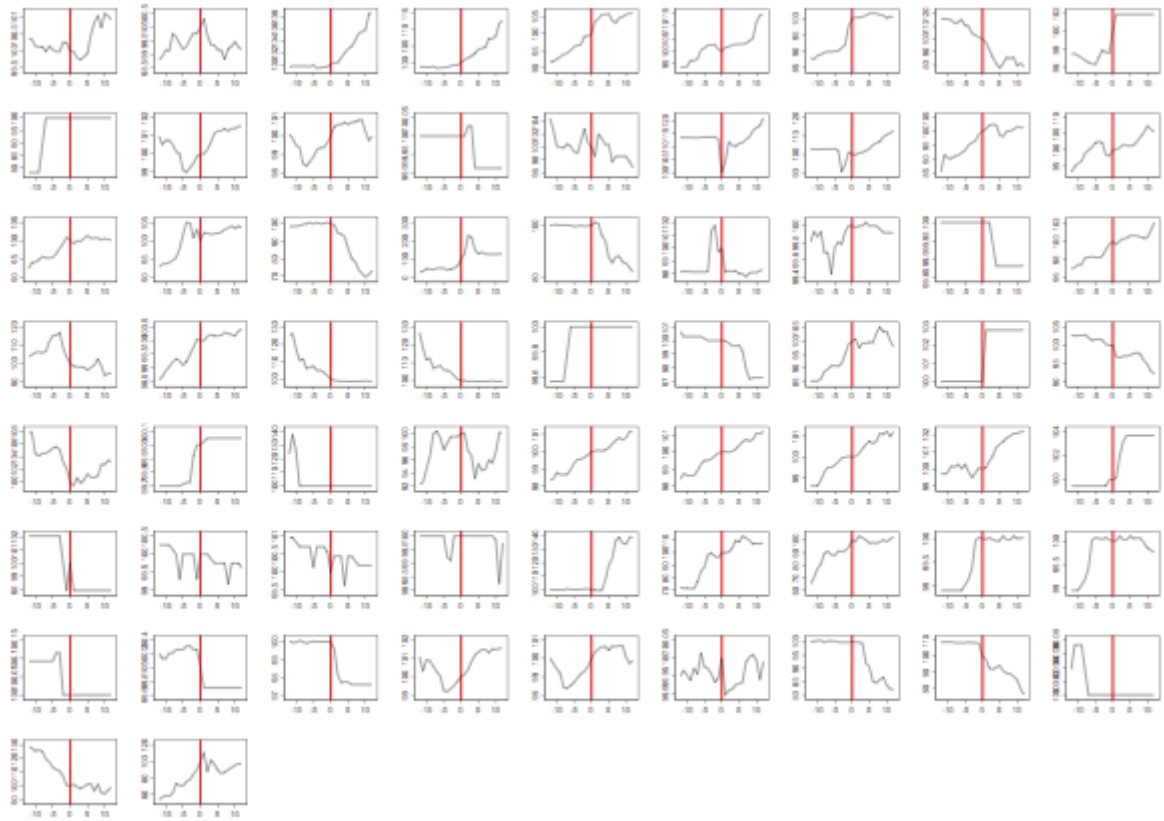


Figure A.7: Exchange rate developments around selected sanction episodes.

Notes: The figure shows the evolution of the exchange rate (shown as solid black lines) 12 weeks before and 12 weeks after the imposition of economic sanctions in selected episodes.

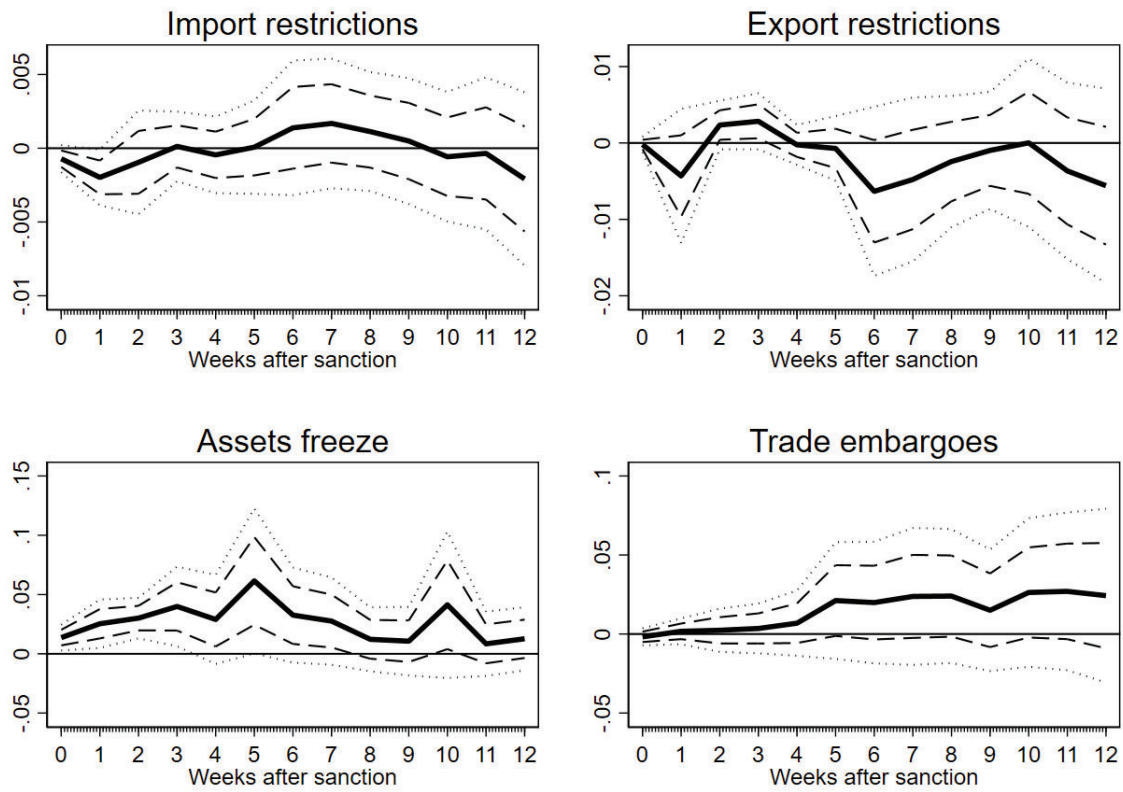


Figure A.8: Estimates controlling for geopolitical risk.

Notes: The figure shows the responses of the exchange rate (shown as a solid black line) in weeks 0 to 12 following the introduction of import restrictions (upper left panel), export restrictions (upper right panel), trade embargoes (lower left panel) and asset freezes (lower right panel). Positive values indicate that the exchange rate depreciates vis-à-vis the US dollar. The local projection estimates are obtained by OLS over the full sample (1914-1945); they control for year fixed effects, week fixed effects, currency fixed effects, dummies for coincidental war outbreaks and endings, and the index of geopolitical risk of [Caldara and Iacoviello \(2022\)](#). 1 (1.65) standard-deviation confidence bands are shown as dashed (dotted) lines.

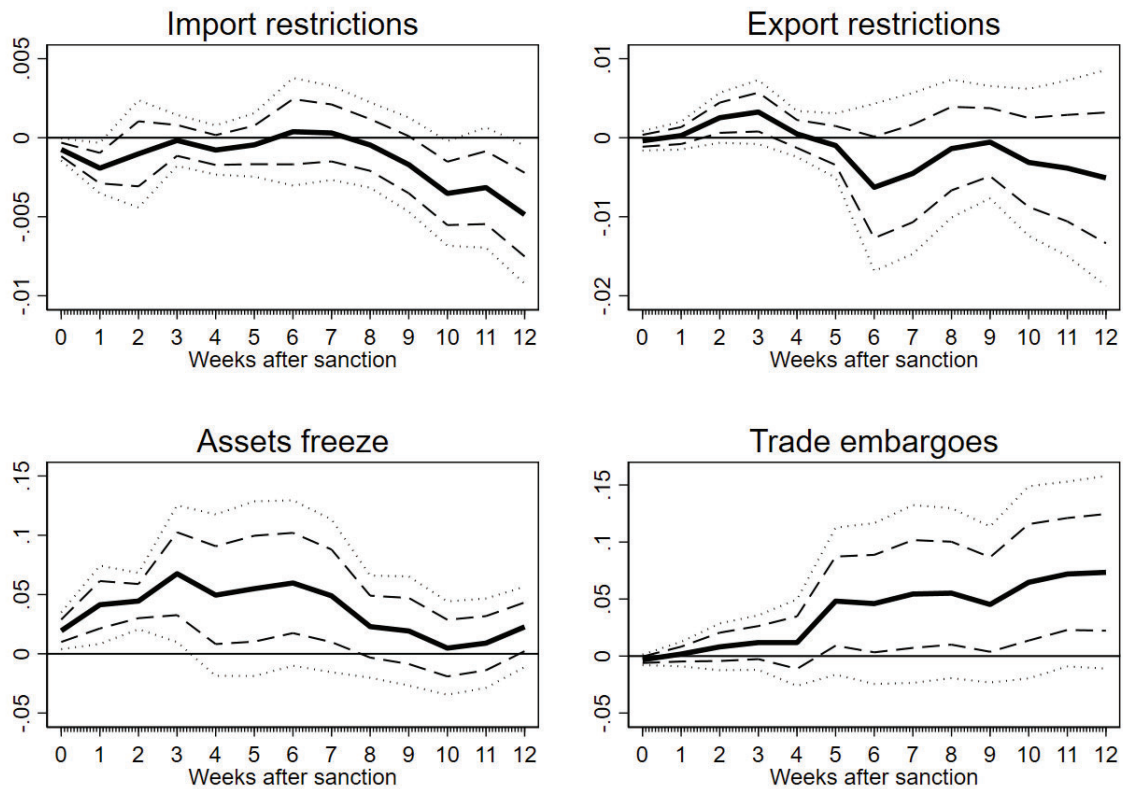


Figure A.9: Estimates controlling for financial openness.

Notes: The figure shows the responses of the exchange rate (shown as a solid black line) in weeks 0 to 12 following the introduction of import restrictions (upper left panel), export restrictions (upper right panel), trade embargoes (lower left panel) and asset freezes (lower right panel). Positive values indicate that the exchange rate depreciates vis-à-vis the US dollar. The local projection estimates are obtained by OLS over a restricted sample period (1914-1931) for which data on financial openness are available from [Quinn and Voth \(2008\)](#) and [Quinn and Toyoda \(2008\)](#); the estimates additionally control for year fixed effects, week fixed effects, currency fixed effects and dummies for coincidental war outbreaks and endings. 1 (1.65) standard-deviation confidence bands are shown as dashed (dotted) lines.

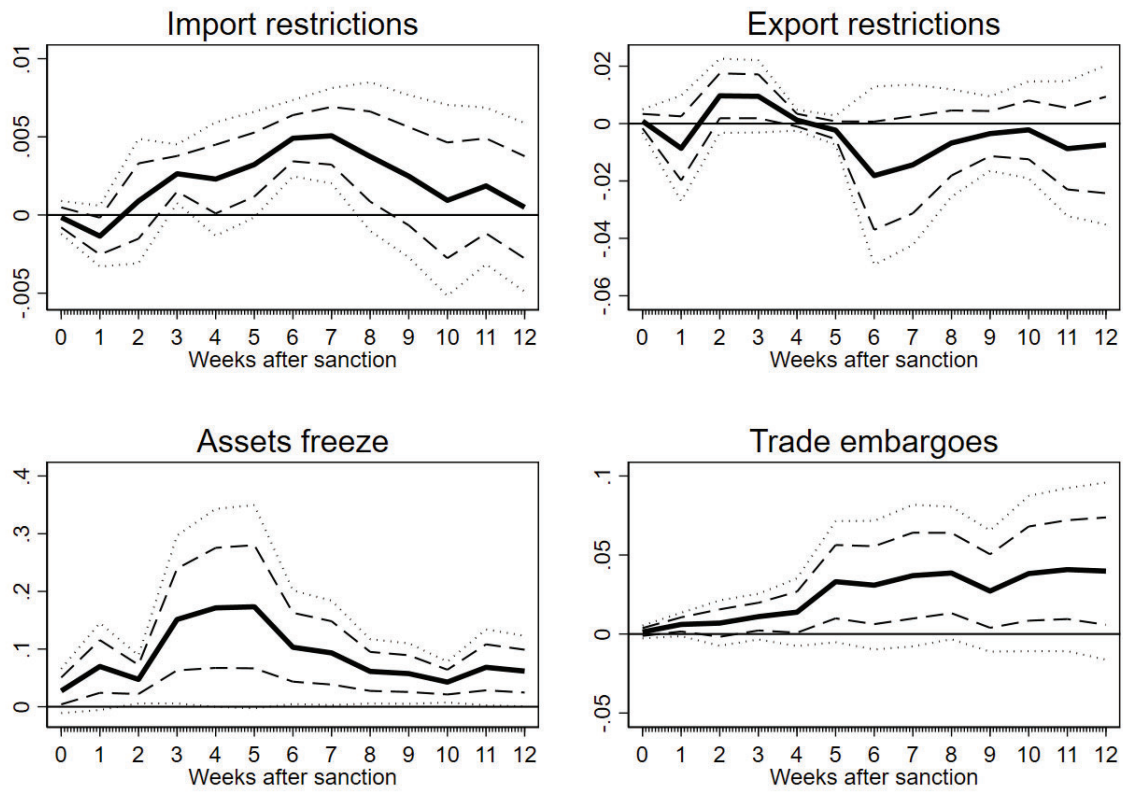


Figure A.10: Estimates controlling for trade openness.

Notes: The figure shows the responses of the exchange rate (shown as a solid black line) in weeks 0 to 12 following the introduction of import restrictions (upper left panel), export restrictions (upper right panel), trade embargoes (lower left panel) and asset freezes (lower right panel). Positive values indicate that the exchange rate depreciates vis-à-vis the US dollar. The local projection estimates are obtained by OLS over the full sample (1914-1945); they control for year fixed effects, week fixed effects, currency fixed effects, dummies for coincidental war outbreaks and endings and trade openness. 1 (1.65) standard-deviation confidence bands are shown as dashed (dotted) lines.

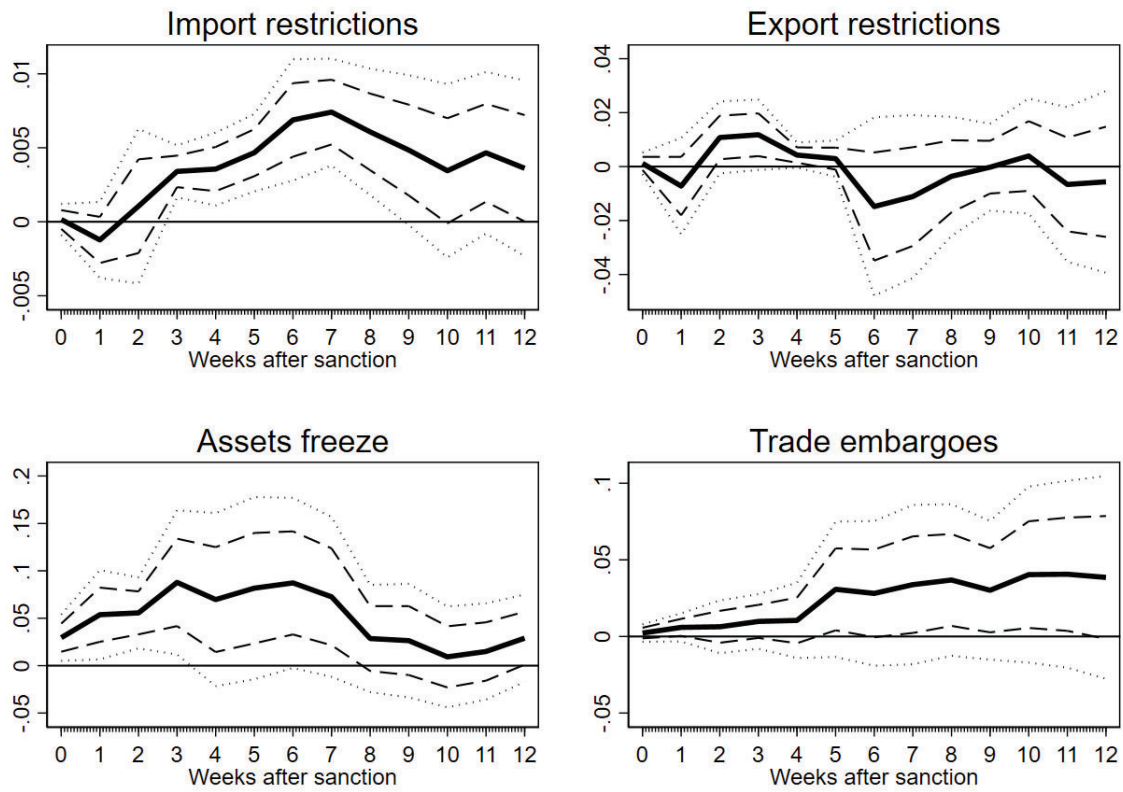


Figure A.11: Estimates controlling for trade tariffs.

Notes: The figure shows the responses of the exchange rate (shown as a solid black line) in weeks 0 to 12 following the introduction of import restrictions (upper left panel), export restrictions (upper right panel), trade embargoes (lower left panel) and asset freezes (lower right panel). Positive values indicate that the exchange rate depreciates vis-à-vis the US dollar. The local projection estimates are obtained by OLS over the full sample (1914-1945); they control for year fixed effects, week fixed effects, currency fixed effects, dummies for coincidental war outbreaks and endings and trade tariffs as available from [Clemens and Williamson \(2004\)](#). 1 (1.65) standard-deviation confidence bands are shown as dashed (dotted) lines.

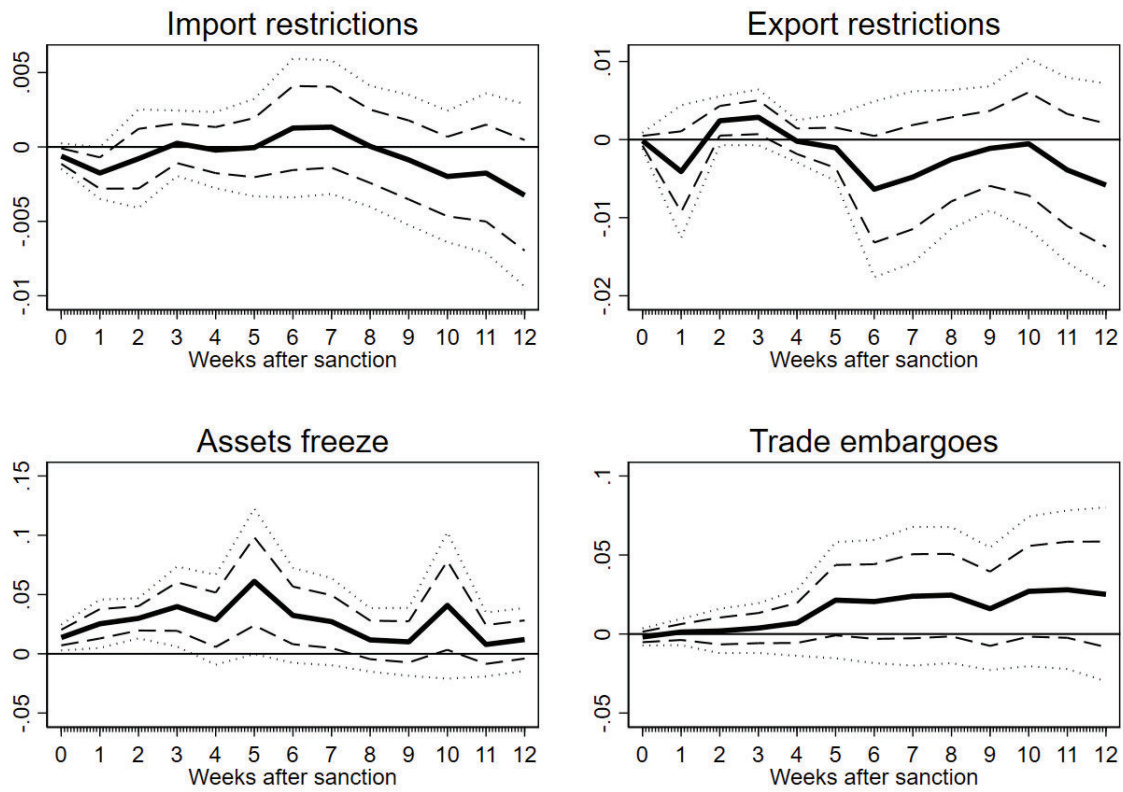


Figure A.12: Estimates controlling for month fixed-effects.

Notes: The figure shows the responses of the exchange rate (shown as a solid black line) in weeks 0 to 12 following the introduction of import restrictions (upper left panel), export restrictions (upper right panel), trade embargoes (lower left panel) and asset freezes (lower right panel). Positive values indicate that the exchange rate depreciates vis-à-vis the US dollar. The local projection estimates are obtained by OLS over the full sample (1914-1945); they control for year fixed effects, month fixed effects, week fixed effects, currency fixed effects and dummies for coincidental war outbreaks and endings. 1 (1.65) standard-deviation confidence bands are shown as dashed (dotted) lines.

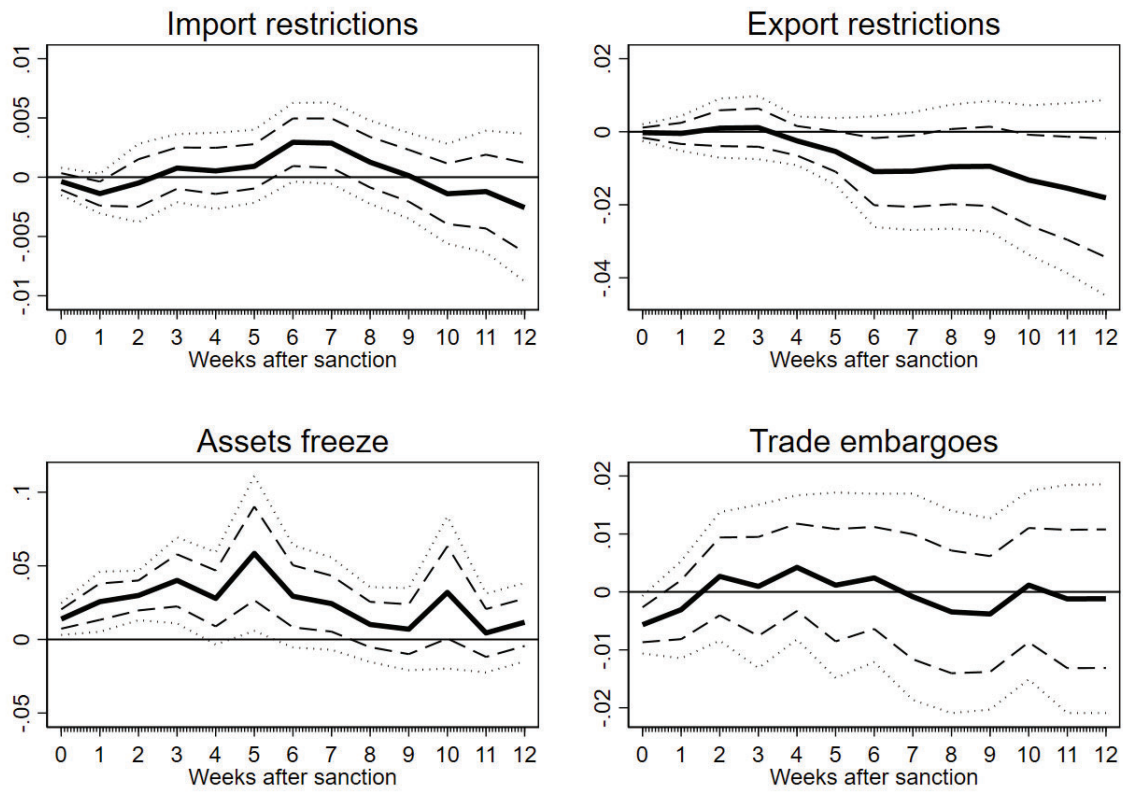


Figure A.13: Preliminary estimates controlling for country \times year fixed effects.

Notes: The figure shows the responses of the exchange rate (shown as a solid black line) in weeks 0 to 12 following the introduction of import restrictions (upper left panel), export restrictions (upper right panel), trade embargoes (lower left panel) and asset freezes (lower right panel). Positive values indicate that the exchange rate depreciates vis-à-vis the US dollar. The local projection estimates are obtained by OLS controlling over the full sample (1914-1945); the estimates control for country-year fixed effects ($\alpha_i \times \alpha_t$) and dummies for coincidental war outbreaks and endings. 1 (1.65) standard-deviation confidence bands are shown as dashed (dotted) lines.

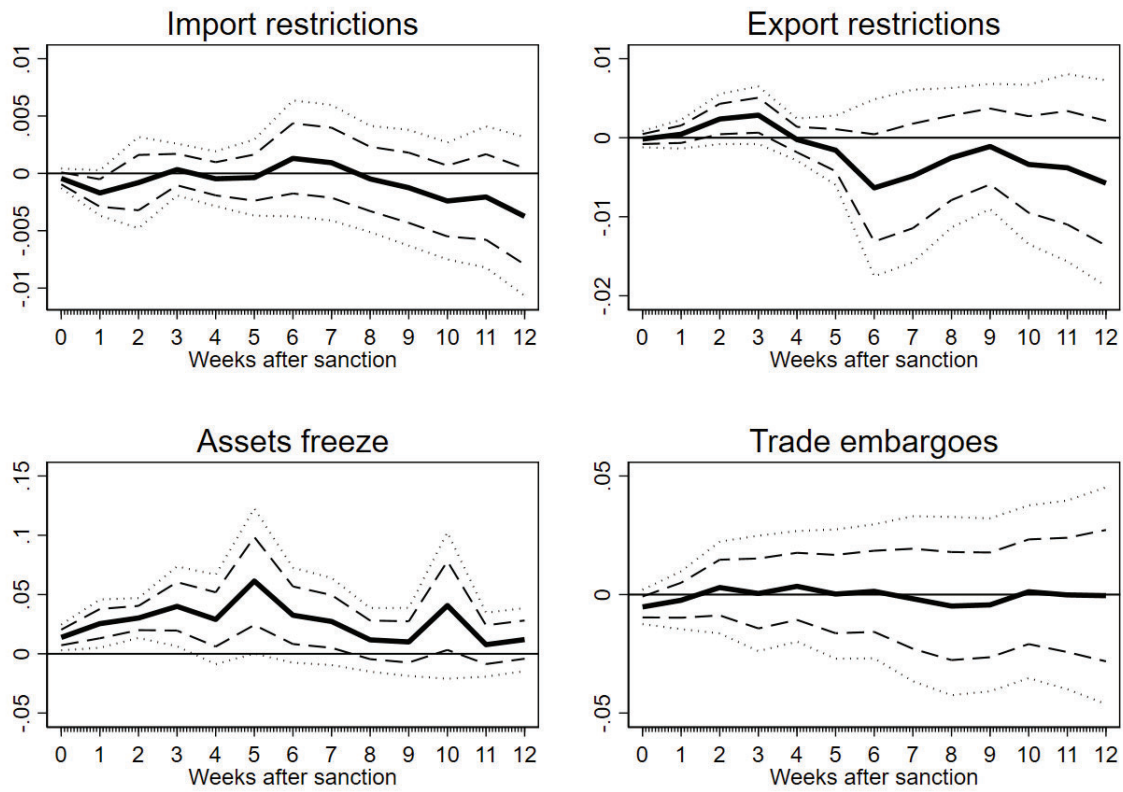


Figure A.14: Estimates excluding sanction threats.

Notes: The figure shows the responses of the exchange rate (shown as a solid black line) in weeks 0 to 12 following the introduction of import restrictions (upper left panel), export restrictions (upper right panel), trade embargoes (lower left panel) and asset freezes (lower right panel). Positive values indicate that the exchange rate depreciates vis-à-vis the US dollar. The local projection estimates are obtained by OLS over the full sample (1914-1945) excluding sanction threats; they control for year fixed effects, week fixed effects, currency fixed effects and dummies for coincidental war outbreaks and endings. 1 (1.65) standard-deviation confidence bands are shown as dashed (dotted) lines.

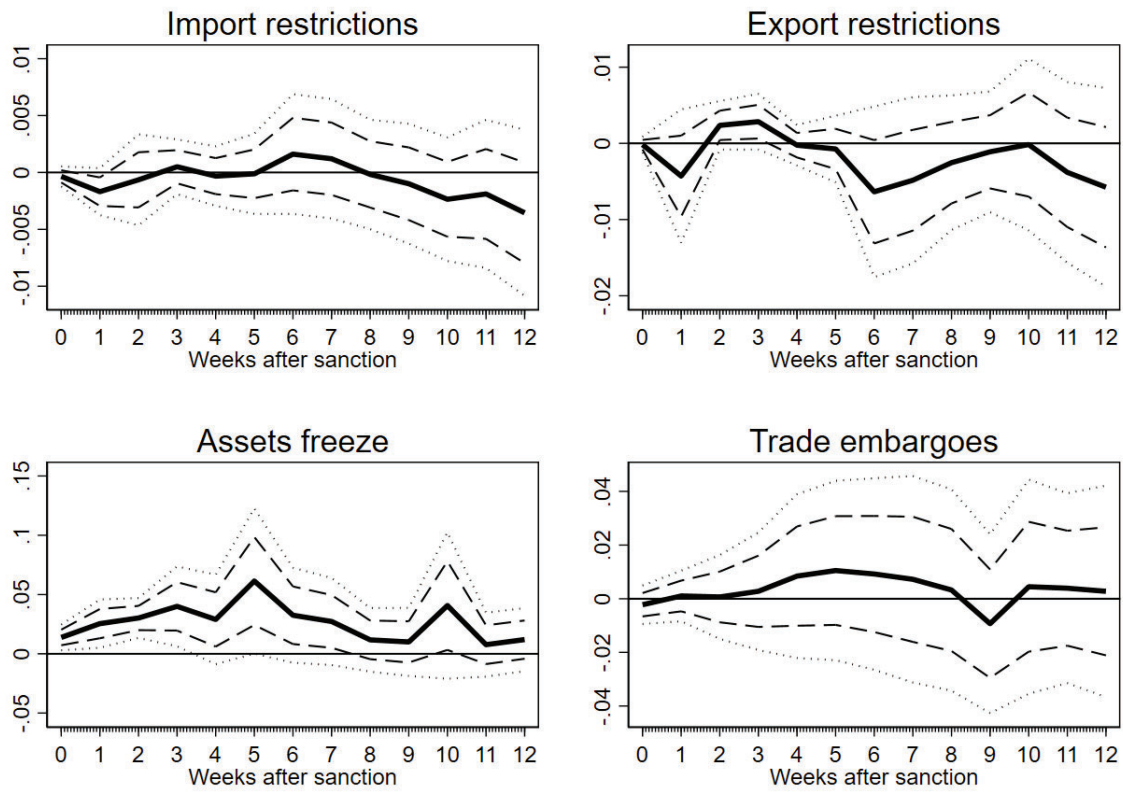


Figure A.15: Estimates excluding sanctions imposed by the League of Nations.

Notes: The figure shows the responses of the exchange rate (shown as a solid black line) in weeks 0 to 12 following the introduction of import restrictions (upper left panel), export restrictions (upper right panel), trade embargoes (lower left panel) and asset freezes (lower right panel). Positive values indicate that the exchange rate depreciates vis-à-vis the US dollar. The local projection estimates are obtained by OLS over the full sample (1914-1945) excluding sanctions imposed by the League of Nations; they control for year fixed effects, week fixed effects, currency fixed effects and dummies for coincidental war outbreaks and endings. 1 (1.65) standard-deviation confidence bands are shown as dashed (dotted) lines.

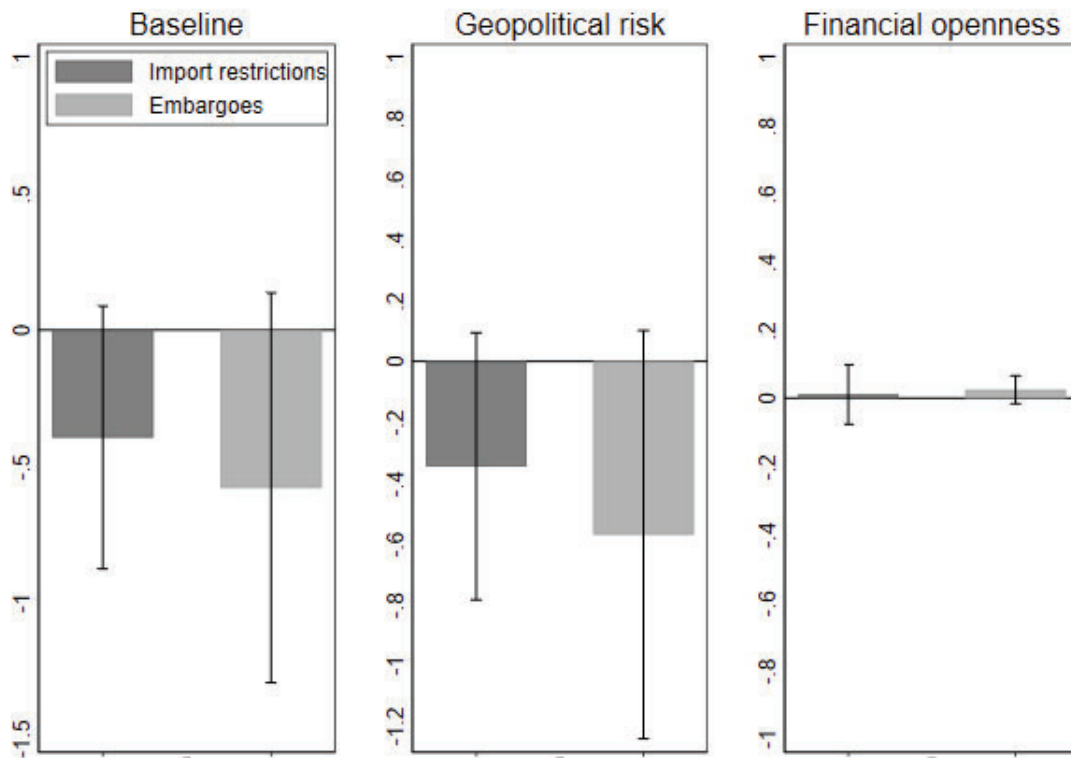


Figure A.16: Transmission channels—Imports.

Notes: The figure shows the estimated contemporaneous effect of import restrictions (dark grey bars) and embargoes (light grey bars) on total real imports in US dollars of country i in year t . The baseline estimates of the left-hand side panel are obtained by OLS on the sample period 1914-1938 and control for year fixed effects, currency fixed effects, dummies for coincidental war outbreaks and endings. The estimates of the middle panel are obtained on the same sample period and control for currency fixed effects, dummies for coincidental war outbreaks and endings and the index of geopolitical risk of [Caldara and Iacoviello \(2022\)](#). The estimates of the right-hand side panel are obtained on the sample period 1914-1931 and control for year fixed effects, currency fixed effects, dummies for coincidental war outbreaks and endings and the financial openness measure of [Quinn and Voth \(2008\)](#) and [Quinn and Toyoda \(2008\)](#). 90% confidence intervals are shown as whiskers.

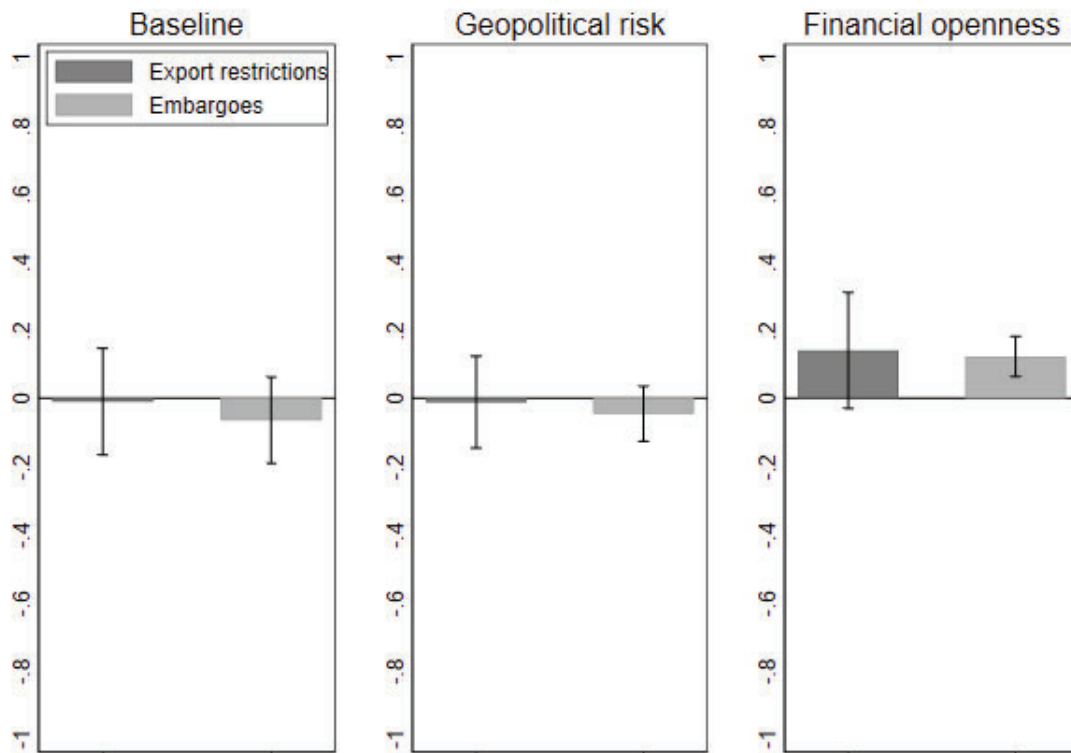


Figure A.17: Transmission channels—Exports.

Notes: The figure shows the estimated contemporaneous effect of export restrictions (dark grey bars) and embargoes (light grey bars) on total real exports of country i in year t . The baseline estimates of the left-hand side panel are obtained by OLS on the sample period 1914-1938 and control for year fixed effects, currency fixed effects, dummies for coincidental war outbreaks and endings. The estimates of the middle panel are obtained on the same sample period and control for currency fixed effects, dummies for coincidental war outbreaks and endings and the index of geopolitical risk of [Caldara and Iacoviello \(2022\)](#). The estimates of the right-hand side panel are obtained on the sample period 1914-1931 and control for year fixed effects, currency fixed effects, dummies for coincidental war outbreaks and endings and the financial openness measure of [Quinn and Voth \(2008\)](#) and [Quinn and Toyoda \(2008\)](#). 90% confidence intervals are shown as whiskers.

B Tables

Table B.1: Overview of selected existing databases on sanctions

	No. of episodes	Sample period	Data type	Frequency	Granularity of information on sanctions
Hufbauer et al. (2010)	204 (10 pre-1939)	1914-2006	Case studies	Irregular	-Uncoded lists of measures taken
Kirikakha et al. (2021), Felbermayr et al. (2020)	1,101	1950-2019	Coded classification	Annual	-Type (trade, financial, travel) -Policy objective -Perceived degree of success
Clifton et al. (2014)	1,412	1945-2005	Coded classification	Daily	-Type (economic embargo, import/export restrictions, asset freeze, termination of foreign aid, travel ban, suspension of economic agreement) -Issue at stake, Threat identity, carrots, diplomatic sanctions, economic costs, etc.
Von Soest and Wahnman (2015)	122	1990-2010	Coded classification	Annual	-Type (financial sanctions, trade embargo, non-economic sanctions) -Intensity

Notes: The table provides summary information on selected existing databases on sanctions, including the number of sanction episodes available, sample period, data type, frequency of observations, and granularity of information available.

C Episodes of Economic Sanctions

C.1 The Blockade of the Central Powers (1914-1919)

Description: The German blockade (or the Blockade of Europe) was a naval blockade by the Allies during and after World War I imposed in an effort to restrict the maritime supply of goods to the Central Powers (Germany, Austria-Hungary, and later also the Ottoman Empire and Bulgaria). The blockade went through three phases: from August 20th, 1914, a restricted blockade; from March 11th, 1915, an unrestricted blockade to prevent all goods entering or leaving Germany; and finally from April 6th, 1917, an unrestricted blockade with American collaboration.

Economic sanctions: On August 4th, 1914, Britain and France established a naval blockade of Germany and Austria-Hungary and issued a comprehensive list of contraband. Initially the measures were drawn from the London Declaration of 1909. The list contained 12 items of *absolute contraband*, i.e. goods that could be captured whenever destined for an enemy power. Concretely those referred to weapons, munitions and explosives, military equipment and clothing, armour, warships, planes, balloons and parts thereof as well as tools and machines to make or repair those items. The only change compared to the original declaration was the addition of flying machines (a technological adaptation which had been foreseen in the legal framework). There was also a 13 item list of *conditional contraband*, i.e. goods such as food and fuel that could be captured if shown to be destined for the use of the armed forces of a government department of the enemy state, excepting when the ship transporting them did not plan to enter an enemy port.⁴⁸ Already on August 20th the blockade was tightened by reserving the right to capture conditional contraband destined for the enemy, regardless of the port to which it was delivered. Following protests by European neutrals and the US, on October 29th, 1914 a new rule concerning conditional contraband stated that only those goods would be captured that were declared for known enemy agents, for no specific recipient at all, or to order. However in practise other means were found to block such transports.

On December 23th, 1914, lists were further extended to include materials for explosives. On March 11th, 1915 (after the German counter-blockade which had declared on February 4th, 1915 the seas around the British Isles to be war zones, and that any com-

⁴⁸Conditional contraband therefore could not be captured when destined for a neutral port, even if it would be then sold and shipped to the enemy over land (continuous voyage).

mercial vessel found in those waters would be destroyed), Britain and France expanded their embargo. They imposed a ban on all goods of German origin, ownership or destination. On May 27th, 1915, lathes and other machines or machine tools capable of being employed in the manufacture of munitions of war were added to the list of absolute contraband. Cotton, used for the production of uniforms and munitions was also added, but only after a deal was reached with the US, whose Southern states depended on its exports, in August 1915.

An official blockade was imposed on the Ottoman Empire from August 25th, 1915. In practice the blockade had been in effect from August 20th, 1914.) There was then a tightening on August 25th, 1915, when the blockade was extended along the Syrian coast (whereas before only the entrance to the Aegean Sea was subject). After December 3rd, 1915, the blockade of the Ottoman Empire was further tightened, such that American ships were no longer allowed to pass.

On October 16th, 1915, a blockade was proclaimed of the Aegean coast of Bulgaria. On July 11th, 1917, the United States entered into the war, and after Anglo-American negotiations the US government decided to emulate British measures of economic warfare.

The blockade was finally relaxed in the course of 1919. The blockade was partially lifted on January 17th, 1919, when the Allies allowed the importation of food under their supervision. However, food deliveries were delayed until March 8th, 1919, when the German government agreed to the restrictions imposed by the Allies. On March 10th, 1919, the blockade was lifted for Austria and on March 20th, 1919 for Bulgaria. In the case of Germany, the blockade was lifted on July 12th, 1919, following the Treaty of Versailles.

Source: Daughy and Raugh (1991), Cummings (2015), Goetter (2021), *Der Bund*, March 10th, 1919 edition, "Bulgarian Blockade Declared by Allies; All Aegan Ports Mined Against Attack", *New York Times*, 17 October 1915,
url: <https://www.nytimes.com/1915/10/17/archives/bulgarian-blockade-declared-by-allies-all-aegean-ports-mined.html?searchResultPosition=1>,
url: https://encyclopedia.1914-1918-online.net/article/naval_blockade_of_germany.

C.2 US Steel Embargo of Japan (1917-1918)

Description: The US Steel Embargo of 1917-1918 was part of US efforts to maintain control in Asia, and specifically to maintain China's integrity and the Open Door policy (the policy between China, the US, Japan, and European powers that stated each of those countries should have equal access to Chinese trade). The embargo proved partially ineffective and was abandoned after the war.

Economic sanctions: On July 9th, 1917, US President Woodrow Wilson issued an executive order embargoing exports of steel and iron and other items used in maritime construction by Japan. The intention was to hit Japan's shipping industry and its position in the business of carrying trade in the Pacific due to war-created carrying shortages. On October 12th, 1917, a war trade board was established as the sole issuer of exporter licenses to sell steel and iron to Japan. Ironically, the export embargo forced Japan to reconsider its lack of resources and develop its own supplies of iron and steel—with success. On March 18th, 1918, the embargo started to be relaxed and large purchases of Japanese cargo carriers for American steel were authorized. Japan's shipping industry and the Tokyo stock market responded positively. Being judged as ineffective in slowing down Japan's maritime strength, the embargo was abandoned de facto on November 22nd, 1918.

Source: [Safford \(1970\)](#).

C.3 Naval blockade of Greece (1916-1917)

Description: The naval blockade of Greece was established by the Entente Powers during World War I. Initially, Greece had remained neutral. However, following the surrender of a key fortress to Bulgaria, Britain and France were convinced that the Greek government was hostile to their cause. The Entente Powers responded with a naval blockade, which was further tightened after relations between Entente Powers and the royal government in Athens broke down. The blockade came to an end after King Constantine abdicated in June 1917. This led to unification of Greece under a new King and the leadership of Venizelos. From this point Greece joined World War I on the side of the Allies.

Economic sanctions: On June 7th, 1916, Britain and France declared a partial naval blockade of Greece. Greek ships were liable to be stopped and searched, while

those in Allied harbours were detained. The French took control of Thessaloniki harbour. Following a armed confrontation in Athens between the royalist government and Allied forces over the issue of Greece's neutrality, the British announced a full blockade on November 19th, 1916. This was designed to force Greece into the War, or else bring about regime change in the country. But the blockade failed in this ultimate objective. It came to an end on June 11th, 1917.

Source: Shirkey (2010), <https://drpatwalsh.com/2021/02/23/greek-independence-fact-or-fiction/>, Roudometof (2001)

C.4 The Blockade of Russia (1918-1920)

Description: The Allied Blockade of Russia was put in place in response to overthrow of the Provisional Government in Russia by Lenin and his followers. The measures did not enjoy legal status because the US refused to declare a formal blockade without a declaration of war. Moreover, the US refused a pacific blockade enforced by authority of the Allied governments or the League of Nations. In practice, however, Allied governments maintained an effective blockade resulting in the economic isolation of Bolshevik Russia.

Economic sanctions: The blockade was put in place on the day of the Armistice with Germany, November 11th, 1918. It prevented Allied nationals from engaging in commerce with Bolshevik Russia. In addition, Allied nationals had to implement the following policy: (i) refusal of sailing permits to all ships leaving from Russian ports in the hands of Bolsheviks or coming from said ports; (ii) establishment of a similar measures for all commodities destined to be sent to Bolshevik Russia by other routes; (iii) refusal of passports to all persons going to or coming from Bolshevik Russia; (iv) arrangements with a view to preventing banks from doing business with Bolshevik Russia and (v) as far as possible, refusal by each Government to its own nationals of facilities of communication with Bolshevik Russia by mail, telegraph or wireless. The blockade also implicitly covered Russian gold: Allied governments considered that they had a right to Russian gold so that they could compensate Russia's expropriated capitalists and repay its debts. This became a huge obstacle to Soviet trade, since major banks or and governments no longer could accept Soviet gold. The Baltic States were the first to breach the blockade, and their peace agreements opened the way to trade contracts between the various parties. Allied troops finally lifted the full blockade on January 16th, 1920. Initially, trade was to be

limited to that with the "Russian people" through Centrosoyuz, the All-Russian Union of Consumer Co-operative Societies. On March 16th, 1921, the United Kingdom and the Russian Socialist Federal Soviet Republic signed the Anglo-Russian trade agreement. This ended the British blockade, opening Russian ports to British ships.

Source: <https://wdc.contentdm.oclc.org/digital/collection/russian/id/829>, Gaworek (1975), <https://www.cadtm.org/Russia-Origin-and-consequences-of-the-debt-repudiation-of-February-10-1918>

C.5 US Freezes of Assets under the Trading with the Enemy Act (1917-1945)

Description: The Trading with the Enemy Act (TWEA) of October 6th, 1917, gives the US President the power to oversee or restrict trade between the United States and its enemies in times of war. It was amended in 1933 by the Emergency Banking Act to extend the president's authority to peacetime. The TWEA has served as the statutory foundation for US sanctions as a foreign policy tool. It was used extensively in World War II and since 1945.

Economic sanctions: The United States declared war on Germany on April 6th, 1917. TWEA was enacted on October 6th, 1917 and on October 22nd, 1917, President Wilson created an office with the power to confiscate assets from anyone whose actions might be considered a threat to the war effort. The aim was to seize German assets in the US and conscript German resources for the benefit of the US war effort. On December 7, 1917, the United States declared war on the Austria-Hungary Empire and seized its funds. The end of the war did not relieve foreign property owners. In 1921, under the Congressional resolution that ended the war with Germany, the US retained all seized assets; this was in the spirit of the provisions of the Treaty of Versailles, which allowed Allied nations to use enemy assets to repay their claims. Following Germany's invasion of Denmark and Norway on April 9th, 1940, President Roosevelt invoked TWEA and froze their assets held in the US to prevent the Nazis from making use of them. As other countries were invaded or dominated by the Axis, freezing was successively extended during 1940 and the first half of 1941 to their assets; this was by executive orders taken approximately on the dates of invasion or domination.⁴⁹ On June 14th, 1941, the asset

⁴⁹More precisely on: April 8, 1940: Norway and Denmark; May 10, 1940: The Netherlands, Bel-

freeze was extended to the aggressors Germany and Italy and, with the exception of Turkey, to the rest of Continental Europe and neutral countries. On July 26th, 1941, the asset freeze was extended to Japan after its invasion of Indochina, and to China on the same day, at the request of General Chiang Kai-Shek. The 1941 freeze was extended to Thailand on December 9th, and to Hong Kong on December 26th, 1941.

Sources: [Lourie \(1943\)](#), [Coates \(2018\)](#), Executive Order 8785 Freezing the Assets of Certain European Countries, June 14, 1941, <https://www.presidency.ucsb.edu/documents/executive-order-8785-freezing-the-assets-certain-european-countries>.

C.6 The Greco-Turkish War (1920-1922)

Description: The Greco-Turkish War was a conflict between Greece and Turkey during the partitioning of the Ottoman Empire following World War I, extending from May 1919 to October 1922. The Allies had promised Greece territory in Anatolia at the expense of the Ottoman Empire. Greek forces landed in Smyrna (now İzmir), on May 15th, 1919, and took control of the western and northwestern part of Anatolia. Turkish forces counterattacked and, in August 1922, the war ended with the recapture of Smyrna by Turkish forces. The Greek government accepted Turkish demands and returned to its prewar borders. The Allies abandoned the Treaty of Sèvres to negotiate a new treaty at Lausanne, which was signed on July 24th, 1923. The Treaty of Lausanne recognized the independence of the Republic of Turkey and its sovereignty over Anatolia, Istanbul, and Eastern Thrace. The Greek and Turkish governments agreed to engage in a population exchange.

Economic sanctions: The League of Nations failed to stop the Greco-Turkish war despite that economic sanctions would have been possible against either combatant. British and French officials considered whether they should impose economic sanctions on Turkey. They leaked to the press on February 8th, 1922, that they were considering a blockade of the coasts of Asia Minor. British officials kept the option of sanctions open during negotiation of the Treaty of Lausanne, notably when discussions briefly collapsed

gium, and Luxembourg; June 17, 1940: France (including Monaco); July 10, 1940: Latvia, Estonia, and Lithuania; October 9, 1940: Romania; March 4, 1941: Bulgaria; March 13, 1941: Hungary; March 24, 1941: Yugoslavia; April 28, 1941: Greece; and June 14, 1941: Albania, Andorra, Austria, Czechoslovakia, Danzig, Finland, Germany, Italy, Liechtenstein, Poland, Portugal, San Marino, Spain, Sweden, Switzerland, and Union of Soviet Socialist Republics.

in early 1923.

Source: De Fiedorowicz (1936), Larew (1973), Mulder (2022),

“Puzzle d’Asie,” *L’Intransigeant*, February 9th, 1922, p. 3,

<https://gallica.bnf.fr/ark:/12148/bpt6k789899t/f3.item.r=%22puzzle%20d’asie%22.zoom>.

C.7 The Albanian Mirdita crisis (1921)

Description: The Republic of Mirdita was a short-lived (unrecognized) republic declared in northern Albania. It existed between July 17th and November 20th, 1921. It was recognized by Greece and received Yugoslav financial and weapon support. These events coincided with international negotiations over the finalisation of the Albanian-Yugoslav border. On November 2nd, 1921, Yugoslav troops invaded Albanian territory beyond the areas they were already occupying. The League of Nations dispatched a commission composed of representatives of Britain, France, Italy, and Japan that reaffirmed Albania’s 1913 borders. At that point Yugoslavia had no choice but to withdraw its troops.

Economic sanctions: The threat of possible enforcement of Article 16 had a prohibitive influence in the Albanian-Serb-Croat-Slovene war-like struggle. On March 3rd, 1921, in a memorandum sent to the League, the Albanian government requested the Council of the League to take steps to preserve Albania’s territorial integrity, which it alleged was being violated by the Serb-Croat-Slovene state. The Secretary-General of the League then invited the interested states to send their delegates to Geneva on June 25th, 1921. The matter was presented to the Council at its meeting in June 1921. At the point Albania was the only state of the opinion that it should be the League and not the Conference of Ambassadors that should address the conflict.

The Conference of Ambassadors analyzed the Albanian issue from June until early November 1921. During this time, the situation worsened in northern Albania. The British government assessed that the situation was so serious as to justify a meeting of the Council in an extraordinary session. Consequently, the British Prime Minister asked on November 7th to immediately call the Council *"to study the situation and to take the necessary measures, according to Article 16, in case that the Serbs-Croats-Slovenes government refused or delayed to execute its obligations as defined by the agreement"*. On November 9th, 1921, Great Britain, France, Japan and Italy recognized Albania’s borders and government. The Council met on November 16th to publicly hear interested parties.

It reaffirmed the 1913 borders in line with the Conference of Ambassadors' findings. On November 17th, Yugoslavia evacuated its military forces.

Source: [de Fiedorowicz \(1936\)](#), [Krisafi \(2014\)](#), [Kohn \(1924\)](#).

C.8 The Corfu Incident (1923)

Description: The Corfu Incident was a 1923 conflict between Greece and Italy triggered by the killing of Italian soldiers in Greek territory. Italy issued an ultimatum to Greece, which was accepted only partially, and sent forces to bombard and occupy Corfu. Mussolini defied the League of Nations, and threatened to leave the League should the latter become involved in the conflict. The Conference of Ambassadors then tendered an agreement favouring Italy. This epitomized the League's weakness when dealing with large nations.

Economic sanctions: When Corfu was bombarded, the British government immediately investigated the possibility of sanctions under Article 16. The desire of the British government and public to proceed with at least some sanctions was strong. But Foreign Secretary Curzon's attempt to settle the crisis through intervention of the League of Nations was abandoned once Mussolini threatened to leave the League. Sanctions against Italy would require the approval of the League Council, and support from France was uncertain. Her Majesty's Treasury and Admiralty pointed to practical challenges of applying sanctions against Italy. The former highlighted the difficulty of implementing the complex system of control of trade and commerce, which would be resisted by the business community and be ineffective unless the US cooperated. The Admiralty claimed that an effective blockade would require a declaration of war and the concentration of the Royal Navy in the Mediterranean. The prevalent opinion in the Council was that the case was a fit one for appeal under Article 16, but fear of the repercussions from applying sanctions against a Great Power prevailed. The Great Powers preferred to utilise the fact that the Italians killed were acting on behalf of the Conference of Ambassadors and therefore to settle the dispute through this body. Following Greece's agreement, the terms of settlement were accepted by Italy on September 10th, 1923.

Source: [De Fiedorowicz \(1936\)](#), [Yearwood \(1986\)](#), [Mulder \(2022\)](#).

C.9 The Occupation of the Ruhr (1923-1925)

Description: The military occupation of Germany's Ruhr region by France and Belgium lasted from January 11th, 1923 to August, 25th, 1925. The occupation of this heavily industrialized region was a response to Germany's defaults on reparations payments foreseen by the Treaty of Versailles. It worsened Germany's economic crisis and led to acts of resistance from the German population. France and Belgium were pressured to accept the Dawes Plan of August 16th, 1924 to restructure Germany's payment of war reparations and withdrew from the Ruhr a year later.

Economic sanctions: Whether the occupation was an act of war or a sanction authorized by international law was heavily debated by contemporaries. It was observed that the League of Nations was not called upon to stop the occupation and that "the legal authorities and the Government [of Germany] did not conceal their view that the Franco-Belgian action in occupying the Ruhr was not a sanction authorised by the Treaty [of Versailles]" (De Fiedorowicz (1936), p. 119). Others claimed that Article 248 of the Treaty of Versailles indicated that "a first charge upon all the assets and revenues of the German Empire and constituent states shall be the cost of reparation", which "authorize clearly the use of the military arm in enforcing collection of the debt, without the consequences that might ensue from an actual state of war" (Smith (1924), p. 12). Either way, the occupation resulted in a reduction of Germany's export and production capabilities, with effects observationally equivalent to those of an export restriction leading to a fall in output and foreign currency supply.

Sources: Smith (1924), De Fiedorowicz (1936).

C.10 The Petrich Incident (1925)

Description: The Incident at Petrich, or War of the Stray Dog, was a Greek-Bulgarian crisis resulting in a brief invasion of Bulgaria by Greece near the border town of Petrich. This followed the killing of a Greek captain on October 18th, 1925. On October 22nd Greece sent soldiers into Bulgaria with the goal of enforcing its financial compensation demands. Bulgaria appealed to the League of Nations to intervene in the dispute. The League ordered a ceasefire, Greek troops withdrew on October 28th, and Greece was ordered to pay financial compensation to Bulgaria.

Economic sanctions: The Council of the League of Nations, the predecessor of the United Nations Security Council, discussed whether to impose economic sanctions on Greece on October 27th (Barros (1964), pp. 375-376).⁵⁰ Some members thought that the Council should act decisively on the basis of Article 16 of the Covenant of the League, which allowed members to sever all trade or financial relations with a country committing an act of war against another member. Other members thought that a blockade would be an unnecessarily dramatic response to the situation. Ultimately, the Council determined not to undertake action under Article 16. Nevertheless, the possibility of a naval demonstration against the Greeks led the League Secretariat to engage in unofficial discussions as to the form, and legal authority, under which, if the need arose, such action should be taken. But Greece gave in to Council pressure the following day on October 28th, 1925, eliminating the need for further steps.

Source: Barros (1964).

C.11 The Guangzhou-Hong Kong Strike-Boycott (1925-1926)

Description: The Guangzhou–Hong Kong strike was a strike and boycott in British Hong Kong and China’s Guangzhou (Canton) from June 1925 to October 1926. It started as a response to shooting incidents on June 23rd, 1925 in the British concession of Guangzhou in which Chinese demonstrators were killed and wounded. The incident intensified anti-British sentiment and led to a general strike and rupture of commercial relations with the British, including a full embargo of Hong Kong lasting until October 1926.

Economic sanctions: In less than a month, the situation had grown into an effective general strike and boycott of Hong Kong. As the economy came to a halt, Hong Kong became like a ghost town, and its port was idle. On September 5th, sanctions against the British were tightened further. Trade along South China routes was entirely in non-British hands, undermining the UK’s economic position in the region. The general strike-boycott had major adverse effects on Hong Kong’s trade. The government realized that it had no choice but to work more closely with leaders of the Chinese community. On July 15th,

⁵⁰The Council included four permanent members (Britain, France, Italy and Japan) and four (later nine) others elected by the General Assembly of the League for three years. The Secretariat prepared the agenda and published reports of meetings. The Council’s main function was to settle international disputes.

1926, negotiations between Guanzhou and Hong Kong for a strike-boycott settlement began. By mid-September, the Guanzhou regime made plans to end the strike-boycott unilaterally on October 10th. Protesters in Canton terminated the campaign because of the financial burden of supporting the strikers and to pacify the UK, which had taken steps towards military intervention.

Source: Global Nonviolent Action Database, Swarthmore College, <https://nvdatabase.swarthmore.edu>.

C.12 The Mosul Dispute (1925-1926)

Description: The Mosul question was a territorial dispute between Turkey and Iraq over possession of the Mosul Vilayet. The Mosul Vilayet was part of the Ottoman Empire until the end of World War I, when it was occupied by Britain. After the Turkish War of Independence, the new Turkish Republic claimed possession of Mosul. Britain brought the issue to the international arena. The League of Nations Council appointed a commission that recommended that Iraq should keep Mosul. Turkey reluctantly signed the Treaty of Ankara (also known as Frontier Treaty) on June 5th, 1926 that aimed to determine mutually satisfactory borders, while Iraq agreed to give a 10 percent royalty on Mosul's oil deposits to Turkey for 25 years.

Economic sanctions: The dispute over Mosul was referred to the League of Nations' Council for arbitration. The British government saw economic sanctions as a tool to pressure Turkey should it not abandon its claims to the Vilayet. In December 1925, British officials began analyzing the prospects for economic sanctions against Turkey. A concern was that the Mosul dispute could lead to a war with Turkey, should the Permanent Court of International Justice rule in favour of Iraq and if Turkey then rejected the verdict. Another consideration was that since Turkey had long land borders it was relatively unexposed to maritime blockade. Moreover, Turkey depended only to a small extent on seaborne trade for hard currency earnings. Despite this, Foreign Secretary Neville Chamberlain gave the impression that the three European powers on the Council (Britain, France, Italy) would support economic sanctions if needed. This encouraged Turkey not to challenge the League and to accept the resolution of the Mosul dispute, which was resolved in June 1926.

Sources: [Mulder \(2022\)](#), [Keith \(1926\)](#).

C.13 The ARCOS Affair (1927)

Description: On May 12th, 1927, British police raided the headquarters in London of the Soviet trade delegation and ARCOS (the All Russian Co-operative Society), searching for documents allegedly stolen from the War Office. The raid was a breach of the Anglo-Soviet trade agreement of 1921 that gave diplomatic immunity to official trade agents of the USSR.⁵¹

Sanctions: The House of Commons endorsed the Government's proposal to suspend the Anglo-Soviet trade agreement and to suspend diplomatic relations with the USSR on May 26th, 1927. Concerns about war between the two countries increased. Russia took measures to minimise imports from Britain, curtailing both current orders and those projected under the impending Five Year Plan. At the same time, it sought to maintain Soviet sales to Britain at as high a level as possible, thereby shifting the balance of Anglo-Soviet trade in its favour. British officials initially paid no heed to the economic repercussions. Outstanding economic questions were settled in a new Anglo-Soviet trade agreement of April 16th, 1930 under the Second Labour Government.

Sources: Owen (1971), *The Rupture with Russia: Immediate Consequences and Ultimate Dangers*, July 1927, Pamphlet published by the Anglo-Russian Parliamentary, <https://cdm21047.contentdm.oclc.org/digital/collection/russian/id/6587>.

C.14 The Mukden Incident (1931-1933)

Description: The Mukden Incident was a false flag event staged by the Japanese army as pretext for Japan's invasion of Manchuria in 1931. On September 18th, 1931, Japanese military personnel detonated a bomb near a railway line near Mukden (now Shenyang). The Japanese Army blamed Chinese dissidents and reacted with a full invasion that led to occupation of Manchuria and establishment of the puppet state of Manchukuo six months later. The deception was exposed by the Lytton Report of 1932, leading to Japan's withdrawal from the League of Nations in March 1933.

Sanctions: Whether Japan's invasion should be sanctioned was intensely discussed. US President Hoover addressed his cabinet on November 7th, 1931, with a statement

⁵¹The agreement signed on 16 March 1921 aimed to facilitate trade between the United Kingdom and the Soviet Union. It ended the British blockade and opened Russian ports to British ships. Both sides agreed to refrain from hostile propaganda. It amounted to *de facto* diplomatic recognition and opened a period of extensive trade.

in which he limited American action to “moral pressures” and ruled out economic and military sanctions as “roads to war.” Secretary of State Stimson concurred as to the “danger of a blockade leading to war.” (Current (1954), p. 520.) But with the continuation of hostilities between China and Japan, Secretary Stimson was informed that the League of Nations would probably consider sanctions on November 17th. Stimson informed his Ambassador to the League that the US would “not interfere with it,” adding that there “might be a private embargo put on here by voluntary action in refusing to trade with Japan.” (Current (1954), p. 521.) However, President Hoover refused to reverse himself on US official participation to the embargo on November 27th, given increasing opposition in the Senate. On January 7th, 1932, Secretary Stimson declared that the US Government would not recognize any territorial or administrative changes the Japanese might impose upon China (a position known as the “Stimson doctrine”). The Senate rejected an embargo on January 31st, 1932 over concerns that it would lead to war and trade losses. The League of Nations instead took two steps (De Fiedorowicz (1936), p. 128). An arms embargo was imposed on February 27th, 1932 by the British Government, affecting the export of munitions to both Japan and China. And on March 11th, 1932, the League refused to formally recognize Japan’s conquests or the new State of Manchukuo — ultimately to no avail.

Sources: Current (1954), De Fiedorowicz (1936), New York Times Archives (“Boycott of Japan Opposed in Senate, 31 January 1932), US Department of State, “Stimson Doctrine, 1932”, <https://2001-2009.state.gov/r/pa/ho/time/id/16326.htm>.

C.15 The Chaco War (1932-1935)

Description: The Chaco War was an armed conflict between Bolivia and Paraguay over the control of the Gran Chaco region that was believed to be rich in oil. A ceasefire was negotiated in June 1935, and a final truce treaty signed in 1938. Two-thirds of the Chaco region was given to Paraguay, the remaining one-third to Bolivia. During the war, both landlocked countries faced challenges in resupplying arms from their neighbours due to the imposition of multinational arms embargoes.

Sanctions: After the outbreak of the Chaco war in September 1932, an early Franco-British proposal for a League arms embargo against Bolivia and Paraguay was proposed to the Council in February 1933. But the latter was likely to be ineffectual so long as U.S.

arms manufacturers remained outside the interdiction scheme. Bolivia and Paraguay's neighbors applied diplomatic pressures to deescalate the conflict. Within the so-called A.B.C.-Peru group (Argentina, Brazil, Chile and Peru) and the group of Five Neutrals (the US, Cuba, Colombia, Mexico and Uruguay), Argentina and Chile proposed an arms embargo in 1932, but no action was taken. The League of Nations also pressured on both countries to cease hostilities, but its diplomatic efforts were unsuccessful. The League therefore created a special commission to investigate of the war. The Commission proposed a roadmap to peace on February 24th, 1934; this was rejected by both countries. The Commission then presented a formal report to the Council of the League, made public on May 12th, 1934, calling for an arms embargo on both countries. The embargo was applied by the A.B.C.-Peru group and the Five Neutrals, albeit with differing degrees of stringency. US President Roosevelt requested the Senate (on May 18th) and the House of Representatives (on May 20th) to approve a resolution to enforce the embargo, which was approved by both Houses on May 28th, 1934. By December 1934, 27 countries had banned weapon exports to Bolivia and Paraguay. League-sponsored armistice talks resulted in a ceasefire agreement, which only Bolivia accepted. The arms embargo on Bolivia was then lifted. Paraguay remained concerned that it might become the target of an Article 16 sanctions procedure and left the League in February 1935. However, the country's economy was too weakened to sustain the war, and on June 10th, 1935 a ceasefire was negotiated.

Source: [Fenwick \(1934\)](#), [De Fiedorowicz \(1936\)](#), *League of Nations Official Journal*, Special Supplement N. 124, Geneva, 1934, [Mulder \(2022\)](#).

C.16 The Metro-Vickers Crisis (1933)

Description: The Metro-Vickers Affair was an international crisis triggered by arrest of six British employees of Metropolitan-Vickers (an electrical company), and their trial by Soviet authorities in April 1933 on charges of economic “wrecking” and espionage. The trial attracted international media attention, generated public outrage over presumed violations of legal process, and resulted in the conviction of the British employees.

Sanctions: Britain first increased economic pressure by breaking off negotiations for a new trade agreement with the USSR on March 20th, 1933. It threatened a commercial embargo should the arrested men be tried and convicted. This became official British

policy on March 27th. The machinery to secure Parliamentary approval was set in motion on March 28th. With the trial ending on April 19th and the anticipated conviction of the defendants, a full embargo was imposed, to be effective one week afterwards, on April 26th. The embargo applied to basic Soviet export commodities, goods which comprised 70-80% of the Soviet Union's trade with the UK. All punitive economic measures were THEN lifted on July 1st, with the simultaneous release of the imprisoned British engineers. Two days later negotiations for a new Anglo-Soviet trade agreement resumed.

Source: [Owen \(1971\)](#).

C.17 The Anti-Nazi Boycott (1933-1941)

Description: The Anti-Nazi boycott was an international boycott of German products in response to violence and harassment by members of Hitler's Nazi Party against Jews following Hitler's appointment as Chancellor of Germany on January 30th, 1933.

Sanctions: The boycott began on March, 19th, 1933 in Europe and the US and continued until the entry of the US into the war on December 7th, 1941. Following the boycott, German imports to the US were reduced by nearly a quarter compared with the prior year, and the impact weighed heavily on the regime. But the Haavara Agreement together with German rearmament that lessened dependence on trade with the West by 1937 largely negated the effects of the Jewish boycott on Germany. Nevertheless, the boycott campaign continued into 1939. While supported by Anglo and American Jews, the boycott was never endorsed by the League of Nations or national governments.

Source: [Gottlieb \(1973\)](#).

C.18 Italy's Invasion of Abyssinia (1935)

Description: On October 1935 Italy attacked Abyssinia (now known as Ethiopia) from Eritrea, an Italian colony, without prior declaration of war. After a series of military victories by the Italians, the Abyssinian emperor Haile Selassie was forced to escape into exile on May 2nd, 1936. The country was officially annexed to the Italian kingdom on May 7th. Fighting between Italian troops, Abyssinian troops and insurgency movements continued until February 1939.

Sanctions: Economic sanctions were imposed by the League of Nations between November 1935 and June 1936. They included four chapters: i) a ban on arms trade

to both Italy and Ethiopia (adopted by the Co-ordination Committee on October 11th, 1935, amended October 16th, 1935); ii) exclusion from international debt and capital markets of the Italian state as well as companies and financial institutions resident in Italy (adopted by the Co-ordination Committee on October 14th, 1935, amended November 2nd, 1935, and November 6th, 1935); iii) a prohibition of imports of Italian goods (adopted by the Co-ordination Committee on October 19th, 1935, amended November 2nd, 1935, and November 6th, 1935); iv) an export embargo to Italy of goods instrumental to the prosecution of the war (adopted by the Co-ordination Committee on October 19th, 1935, amended November 2nd, 1935 and November 6th, 1935); and v) suspension of all bilateral trade agreements between Italy and the League members (adopted by the Co-ordination Committee on October 19th, 1935). These sanctions came into force on November 18th, 1935. Adding coal, oil, pig iron, and steel to embargoed exports was discussed on November 2nd, 1935. The decision was deferred and on January 1936 the League abandoned completely the new sanctions proposal. On March 2nd 1936 the British Foreign Secretary proposed oil sanctions, but the proposal failed on divisions between the British delegation and the French cabinet. The Co-ordination committee of the League proposed at a meeting on July 6th 1936 to lift all measures by July 15th. Its proposal was accepted by all Governments.

Sources: Ristuccia (2000), *League of Nations Official Journal*, Special Supplement N.150, Geneva, 1936.

C.19 Mexico's Expropriation Dispute (1937-1943)

Description: On March 18th, 1938 the Mexican government expropriated the assets of foreign oil companies and created a state-owned firm, *Petróleos Mexicanos* (PEMEX), to run the Mexican oil industry. The decision came after a decade of turmoil for the Mexican oil industry, with soaring profits and stock prices that facilitated the acquisition of national oil companies by foreign multinationals. By 1937 about 78% of Mexican production was controlled by US or British corporations. Lower profits also exacerbated tensions with workers, leading to strikes and protests. US firms reacted by lobbying the US government to impose sanctions on Mexico and force it to return expropriated assets or pay compensation.

Sanctions: On March 26th, 1938, Secretary of State Hull sent a letter to the Mexican

Government announcing his intention of suspending the Silver Purchase Act of 1934. Under the Act, the US government was committed to fixed annual purchases of silver from Mexico (until silver stocks reached 25% or a price of USD 1.29 an ounce). Hull also threatened to reduce the silver support price from 0.45 to 0.43 an ounce. For Mexico, revenues from the Silver Act accounted for about twice as much as revenues from oil taxation. On January 27th, 1939, Senator McReynolds proposed creating a commission to investigate the expropriation. Senator McReynolds also proposed a bill to the US Senate calling for an end to the Silver Purchase Act. The bill was never voted on but remained on the Senate floor as a means of economic pressure. Ultimately, opposition from the Treasury Department eventually forced Hull and the State Department to back down. US oil companies fought the expropriation by making extravagant demands for compensation which the Mexicans rejected. After the outbreak of World War II, the US Government pressured the oil companies to accept a settlement. On April 18th, 1942, the US and Mexican Governments finally signed an agreement whereby the Mexicans agreed to pay financial compensation to US oil firms.

Sources: Maurer (2011); *Congressional Senate Records*, January 27, 1939 Vol. 84, Part 1, "Mexican Expropriation of Foreign Oil, 1938", US Department of State, url: <https://history.state.gov/milestones/1937-1945/mexican-oil>.

C.20 Blockades of Germany and Italy (1939–1945)

Description: The Blockade of Germany (or Economic War) consisted of restrictive measures by the UK to limit supplies of goods needed by Germany and subsequently Italy to sustain their war efforts. The economic war consisted of a naval blockade, import restrictions on German goods and the preemptory purchases of war materials from neutral countries to prevent their sale to the Axis powers.

Sanctions: On September 4th, 1939, the UK declared that all merchant vessels were now liable to examination by the Naval Contraband Control Service. Although a blockade was not formally declared, the communiqué listed the goods liable for confiscation if carried, such as foodstuffs, animal feed, forage, and clothing, and articles—items known as Conditional Contraband of War. Moreover, Absolute Contraband included: all ammunition, explosives, chemicals or appliances suitable for use in chemical warfare; fuel of all kinds and all contrivances for means of transportation on land, in water or the

air; all means of communication, tools, implements and instruments necessary for carrying on hostile operations; coin, bullion, currency and evidences of debt. Britain also imposed a selective blockade on Italy. Coal was declared contraband, though Italy remained non-belligerent until June 10th, 1940. On December 4th, 1939, the UK started limiting German exports in retaliation for the damage and victims caused by the German war operations. Although this negatively affected the neutrals, British officials believed that German sea trade could be reduced sizeably by the measure, impairing Germany's access to essential goods, foreign currency and gold. Germany attempted to maintain imports with neighbouring neutral countries with which it continued to trade and barter. Neutrals secretly acted as a conduit for supplies of materials that would be confiscated if sent directly to Germany. In April, Britain began strengthening the Mediterranean Fleet to enforce the blockade. On August 17th, 1940, after the invasion of France, Germany announced a general counter-blockade of the UK. On August, 20th, 1940, Italy announced a blockade of all British ports in the Mediterranean.

Source: Neutrals and Naval Economic Warfare, *Bulletin of International News*, Vol. 16, No. 20 (Oct. 7, 1939), pp. 3-7, <https://www.jstor.org/stable/25642576>, "Total Blockade to End Nazi Trade", *New York Times*, December 5th, 1939, <https://www.nytimes.com/1939/12/05/archives/total-blockade-on-to-end-nazi-trade-allied-control-ships-at-posts.html?searchResultPosition=8>.

C.21 US Wartime Embargoes on Japan (1940-1945)

Description: Japan's expansion in Asia and the Pacific with the onset of World War II led the US to impose a series of economic sanctions. Tensions between the two countries intensified, culminating with the attack on Pearl harbour on December 7th, 1941 and the entry of the US into the global conflict.

Sanctions: Japan's War with China of 1937 and the Nanking massacre led the US to impose a "morale" (non-binding) embargo on the sale of airplanes and related materiel to nations using airplanes to attack civilian populations. The embargo was extended in 1939 to material essential to airplane manufacture and the production of aviation fuel. However, Japan's position under its 1911 Treaty of Commerce with the US precluded the adoption of retaliatory measures against Japanese commerce that were legally binding. The US withdrew from the treaty in July 1939 in order to remove lift

that legal obstacle. In response to Japan's further expansion in Asia, the US used the Export Controls Act to embargo scrap-metal shipments to Japan on July 2nd, 1940. The U.S. froze Japanese assets on July 26, 1941, and on August 1st, 1941 imposed an embargo on oil and gasoline exports to Japan. The oil embargo was an especially strong response because oil was Japan's most crucial import, a sizeable share thereof being sourced from the US. Concerns about oil shortages are believed to be among the reasons that encouraged Japanese authorities to attack Pearl Harbour.

Source: US State Department, Office of the Historian,
<https://history.state.gov/milestones/1937-1945/pearl-harbor>.

C.22 Sanctions on Peron's Argentina (1944-1947)

Description: At the outset of World War II Argentina announced its intention of remaining neutral. However, the country had a long-standing relations with Germany, including a large population of German origin. The Allies gathered intelligence that Argentina supported the Axis trade network (e.g. its acquisition of industrial raw materials) and the funding of the German state. The US administration hesitated to freeze Argentinian assets, however. When the US gathered evidence that the Argentinian regime was responsible for the overthrow of the Bolivian government (in December 1943) and was plotting similar coups in other South American countries, with Germany's support, sanctions were imposed. One year later, Argentina was among the countries investigated in "Operation Safehaven," which aimed at uncovering German attempts to move assets to neutral countries, so as to lay the basis for a resurgent Nazi state after Hitler's military defeat.

Sanctions: On January 24th, 1944, the US ambassador to Buenos Aires informed the Argentine government that the US administration would freeze Argentinian assets in the United States if the country did not sever all relations with the Axis. After an initial positive response to the ultimatum by President Ramirez, it became clear that the Argentinian government had no intentions of severing relations with Germany once Colonel Peron took power (in February 1944). Therefore, between August and November 1944, the US government introduced additional sanctions against Argentina (freezing over \$400 million of Argentine gold; ordering a deep cut in export licenses for chemicals, steel and lumber exports to Argentina; and forbidding US ships from landing at Argentine

ports after October).

Source: US State Department, *Allied Relations and Negotiations With Argentina*, https://1997-2001.state.gov/regions/eur/rpt_9806_ng_argentina.pdf.

D Foreign Exchange Data

We use the weekly dataset on foreign-exchange quotes from [Vicquéry \(2022\)](#), for the period 1918-1939. For the period 1918-1920 data are weekly averages from *The Economist*, which quoted London (and for some currencies New York or domestic market) prices as well as neutral countries' quotes for the German mark. Between 1921 and 1939 weekly averages of “telegraphic” (spot) exchange-rate prices from *The Bankers' Almanac* are used. When capital controls are enforced, both official and unofficial (black market) prices were collected. Unofficial prices are used in our analysis.

We collected new data for this paper to cover world wars periods, when the London market became less active on the back of temporary closures of financial market exchanges, capital controls and the exclusion of some belligerent countries. We collected Swiss foreign-exchange market prices for the period 1939-1942, digitising foreign-exchange tables from the Swiss newspaper *Der Bund* for every Thursday of the year. Whenever available, black-market (banknote) Swiss foreign-exchange prices, rather than telegraphic prices, are used in the analysis.

A commercial provider, Global Financial Data (GFD), is employed to cover sanctioned countries that were not reported in the London market during 1918-1939, as well as to complement our original data during the two world wars. When bridging two different sources for the same currency, prices are all converted in the contemporary currency unit.

[Appendix D](#) provides detail on sources for each country in the sample.

Table D.1: Overview of the foreign-exchange data sources by sub-period

Country	1914-1917	1918-1939	1939-1945
Argentina	GFD	Vicquéry (2022)	Der Bund
Austria	GFD*	Vicquéry (2022)	n/a
Belgium	GFD*	Vicquéry (2022)	Der Bund**
Bolivia	n/a	GFD	GFD
Brazil	GFD	Vicquéry (2022)	Der Bund
Bulgaria	GFD	Vicquéry (2022)	Der Bund
Canada	GFD	Vicquéry (2022)	Der Bund
Chile	GFD	Vicquéry (2022)	GFD
China	n/a	Vicquéry (2022)	GFD
Colombia	n/a	GFD	GFD
Czechoslovakia	n/a	Vicquéry (2022)	Der Bund**
Danzig	n/a	Vicquéry (2022)	GFD
Denmark	GFD*	Vicquéry (2022)	Der Bund
Estonia	n/a	Vicquéry (2022)	GFD
Finland	n/a	Vicquéry (2022)	Der Bund
France	GFD*	Vicquéry (2022)	Der Bund**
Germany	GFD*	Vicquéry (2022)	Der Bund**
Greece	GFD	Vicquéry (2022)	GFD
Hong Kong	GFD	Vicquéry (2022)	GFD
Hungary	n/a	Vicquéry (2022)	Der Bund**
India	GFD	Vicquéry (2022)	GFD
Italy	GFD*	Vicquéry (2022)	Der Bund**
Japan	GFD	Vicquéry (2022)	Der Bund
Lithuania	n/a	Vicquéry (2022)	GFD
Mexico	n/a	Vicquéry (2022)	GFD
Netherlands	GFD*	Vicquéry (2022)	Der Bund**
Norway	GFD*	Vicquéry (2022)	Der Bund
Paraguay	n/a	GFD	GFD
Peru	n/a	Vicquéry (2022)	GFD
Poland	n/a	Vicquéry (2022)	Der Bund**
Portugal	GFD	Vicquéry (2022)	Der Bund
Romania	n/a	Vicquéry (2022)	Der Bund
Russia	GFD*	Vicquéry (2022)	GFD
Spain	GFD	Vicquéry (2022)	GFD
Sweden	GFD*	Vicquéry (2022)	Der Bund
Switzerland	GFD*	Vicquéry (2022)	Der Bund**
Thailand	GFD	GFD	GFD
Turkey	n/a	Vicquéry (2022)	GFD
United Kingdom	GFD*	Vicquéry (2022)	Der Bund**
United States	GFD*	Vicquéry (2022)	Der Bund**
Uruguay	GFD	Vicquéry (2022)	GFD
Yugoslavia	n/a	Vicquéry (2022)	Der Bund

Notes: Digitisation of 1943-1945 Swiss market ongoing, GFD prices used in current draft. * Digitisation of Swiss black market price ongoing. ** Swiss black market “banknote” price available.