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ABSTRACT

GEOECONOMICS

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We review the literature on geoeconomics, defined as the field of study that links economics and geopolitics (power rivalry). We describe what geoeconomics is and which questions it addresses, focusing on five main subfields. First, the use of geoeconomic policy tools such as sanctions and embargoes. Second, the geopolitics of international trade, especially work on coercion and fragmentation. Third, research on the geopolitics of international finance, which focuses on currency dominance and state-directed capital flows. Fourth, the literature on geopolitical risk and its spillovers to the domestic economy, e.g. on investments, credit, and inflation. Fifth, the economics of war, in particular research on trade and war and on military production. As geopolitical tensions grow, we expect the field to grow substantially in the coming years.

Keywords: Geoeconomics, geopolitics, political economy, power, trade, international finance, war, sanctions, coercion

JEL Classification: F01, P45, D74, H56, N40, F1, F2, F3

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1 Introduction

We are witnessing a major transformation of the international political and economic order, with the weakening of U.S. hegemony, the emergence of new powers in Asia, and new external wars, such as Russia's attack on Ukraine. These developments raise challenging questions for the discipline of economics. What do rising geopolitical tensions imply for growth, investments, or inflation? Will China's rise lead to further economic integration or rather to a fragmentation of global finance and trade into competing blocks? What are the economic costs of great power rivalry, rearmament, and war? And what are the drivers and consequences of using "economic weapons" such as sanctions and embargoes? This paper reviews the rapidly growing body of research that addresses these and related questions.

A central aim of this survey is to describe what "geoeconomics" is, both as a concept and as a field of research. We take a broad view and define geoeconomics as the study of the interlinkages between geopolitics and economics. We then frame what we consider to be the major subfields of the broader field of geoeconomics. We begin with geoeconomic policy tools, like sanctions, given that most research in the past years has focused on this area. We then review the literature linking (i) geopolitics and international trade, and (ii) geopolitics and international finance. Another growing body of work examines geopolitical risks and their spillovers to the domestic economy. Finally, we cover the economic literature on security and war, in particular the trade and war debate, as well as studies on the economic costs of war, war finance, and military procurement. Each of these subfields links economics closely to issues of power rivalry and security.

It is challenging to survey a field of research that is only beginning to emerge and consolidate. We address this challenge by zooming in on recent papers that have been particularly highly cited and/or that were presented at newly established conferences on the topic, in particular the Kiel-CEPR Annual Geoeconomics Conference (launched in 2022) and the NBER Sumer Institute session on International Economics and Geopolitics (launched in 2024). Examples of these works include Broner, Martin, Meyer, and Trebesch (2024), Caldara and Iacoviello (2022), Clayton, Maggiori, and Schreger (2023, 2024), Eichengreen, Mehl, and Chitu (2018), Federle et al. (2024), Horn, Reinhart, and Trebesch (2021, 2024), Itskhoki and Mukhin (2022), Kleinman, Liu, and Redding (2024), Liu and Yang (2024), Mayer, Mejean, and Thoenig (2024), Pflueger and Yared (2024), or Thoenig (2024). In addition, we often refer to older literature on the subject, including from the inter-war years or the Cold War.

The research we cover builds on a long history of thought. Many past thinkers have spent their lives studying economic warfare, the politics of economic interdependence, or the causes and consequences of geopolitical shocks. This is also true for economic scholars.

Leading economists such as John Hicks, Albert Hirschmann, Leonid Kantorovich, John Maynard Keynes, Wassily Leontief, Joan Robinson, Thomas Schelling, or John von Neumann all made important contributions to what we would now call geoeconomics.[1] Be-

1. See for example Hirschman (1945, 1958), Keynes (1940), Neumann and Morgenstern (1944), and

tween the 1920s and 1970s, they studied questions of economic coercion, optimal deterrence, war finance, arms races, or critical bottlenecks in supply chains and industrial production (see the overviews in Bollard, 2020, 2023 and Guglielmo, 2008).[2] Their contributions on these topics have often been forgotten, overshadowed by the more famous work on peacetime issues. But given the world around us today, it is time to unearth their insights.

We also emphasize that geoeconomics is by definition cross-disciplinary. Thus far, economists working on questions related to geopolitics often remained siloed in their respective research area, be it in international trade, political economy, finance, economic history, defense economics, or development. The newly forming field of geoeconomics therefore has the potential to act as a bridge between various disciplines and fields of specialization, combining a broad mix of theories, methods, and data.

Given the broad scope of geoeconomics, this survey is far from complete. There are many relevant papers and books, old and new, that we could not cover in these few pages, including great work from other disciplines. We have chosen to focus on important contributions in economics, while recognizing that there is a large, influential, qualitative literature in political science and international relations on geoeconomic questions, e.g. on how globalization is being "weaponized" (see e.g. Luttwak, 1990; Blackwill and Harris, 2016; Farrell and Newman, 2019; Drezner, Farrell, and Newman, 2021).

We wrote this survey with one primary audience in mind: those interested in studying geoeconomic questions, especially graduate students and younger scholars. Most economists today (including ourselves) have only limited training or expertise on questions of security, war, or international political tensions. But given the growing security concerns, this is likely to change, just as it did during the turbulent decades of the 20th century when a generation of economists turned to these issues. Looking ahead, we therefore expect the field of geoeconomics to grow considerably – and this paper is an attempt to make sense of it.

The remainder of this paper is structured as follows. In Section 2, we start with a discussion on definitions and concepts, ranging from "geoeconomics" to "geopolitical risk", or "geoeconomic fragmentation". Section 3 focuses on policy tools like sanctions and embargoes. Sections 4 and 5 focus on the geopolitics of international trade and finance, respectively. Section 6 is on geopolitical risk, while Section 7 focuses on the economics of war and the military. Section 8 concludes with an outlook on future research.

2 What is Geoeconomics?

We define geoeconomics as *the field of study that examines the links between geopolitics and economics*. Geopolitics, in turn, can be understood in the context of international power rivalry, with a classic definition being "the study of rivalries for power or influence

Schelling (1960).

2. Paul Samuelson emphasized the crucial role that economists played in wars of the 20th century, going as far as calling World War II an "economists' war" (cited in Guglielmo, 2008).

over territories and the people who inhabit them" (Lacoste, 2006). Geoeoeconomics is thus concerned with how international political rivalry (including war) shapes economic policies and outcomes – and vice versa.

Our definition is similar to that of Thoenig (2024), who defines geoeconomics as "the study of the interaction between trade, diplomacy, and geopolitics". It also resembles Chatam House's definition of geoeconomics "as the interplay of international economics, geopolitics and strategy" (Schneider-Petsinger, 2020).

Our definition is broader than that of Clayton, Maggiori, and Schreger (2023), who define geoeconomics as a strategy in which "governments use their countries' economic strength from existing financial and trade relationships to achieve geopolitical and economic goals". Their framework focuses primarily on economic power and economic warfare, while ours deliberately extends to issues of actual warfare as well – including military finance, arms production, or the economic drivers and consequences of external wars. Our definition is also broader than that of Blackwill and Harris (2016), who define geoeconomics as "the use of economic instruments to promote and defend national interests [and] advance geopolitical goals". They mainly focus on geoeconomic policy tools such as sanctions, which we see as a very important, but not the only subfield of geoeconomics. In fact, their definition is similar to what political scientists used to call "economic statecraft", which the classic book by Baldwin (1985) defines as "the use of economic means to pursue foreign policy goals". We see geoeconomics not simply as a reincarnation of the older concept of economic statecraft, but rather as a new, broad field that combines questions of geopolitics and war with questions of international economics.

In the bigger picture, geoeconomics is an emerging subfield of political economy. While political economy studies the relationship between politics and economic outcomes in general, geoeconomics focuses mainly on the international dimension.[3] In fact, many geoeconomic studies focus on how international economic exchange interacts with international politics, in particular with conflict risks and the global balance of power. Crucial subquestions in the field of geoeconomics include how geopolitical considerations influence economic policy-making and how international geopolitical risks affect the domestic economy as well as cross-border trade in goods and assets.

The concept of *geopolitical risk* has been defined by Caldara and Iacoviello (2022) as "the threat, realization, and escalation of adverse events associated with wars, terrorism, and any tensions among states and political actors that affect the peaceful course of international relations". Geopolitical risk thus captures potential and realized shocks to the military and diplomatic relations between countries.

Another concept frequently found in this literature is that of *great powers*, which political scientists and historians have defined as countries that extend their influence far beyond their own borders, be it through military, trade, or finance (e.g., Kennedy, 1987). In this body of research, the list of great powers since 1800 typically includes Austria-Hungary, China, France, Great Britain, Prussia/Germany, Russia, Italy, Japan, and the

3. Geoeconomics as it is defined here is thus closely related to International Political Economy, which can be defined as "politics of international economic exchange" (Lake, 1993).

U.S. (see e.g. Waltz, 1979).

In addition, there is the increasingly used term of *geoeconomic fragmentation*, which Aiyar et al. (2023) define as “a policy-driven reversal of global economic integration often guided by strategic considerations”. Geoeconomic fragmentation can thus be understood as a form of strategic disintegration out of geopolitical motives.

3 Geoeconomic Policy Tools

Countries can employ a large variety of economic policy tools to advance their geopolitical objectives. While some of these instruments are openly labeled and widely considered as geopolitical, the link to geopolitical objectives is less obvious for others. Blackwill and Harris (2016, p. 10) for example list not only “trade policy, investment policy, economic sanctions” as geopolitical policy tools, but also add “the cybersphere, aid, monetary policy, and energy and commodity policies” to this list. What is common to all these instruments is that states use their economic capacity to achieve geopolitical goals.

In the rest of this section, we introduce key policy tools and their treatment in the geoeconomics literature.

3.1 Sanctions

Sanctions are the best-known geoeconomic policy tool, and also the best-understood, thanks to a large and rapidly growing literature (for excellent reviews see Bergeijk, 2021; Felbermayr, Morgan, Syropoulos, and Yotov, 2021; Morgan, Syropoulos, and Yotov, 2023).

Sanctions can be defined as a “restrictive policy measures that one or more countries take to limit their relations with a target country in order to persuade that country to change its policies or to address potential violations of international norms and conventions” (Morgan, Syropoulos, and Yotov, 2023, p. 3). They range from trade sanctions, financial sanctions, military sanctions, arms sanctions to travel sanctions.

The idea to use sanctions to achieve geopolitical goals can be traced through history and geography: the Athenian Empire imposed economic sanctions upon its rival Megara in the 5th century BCE, the Byzantine Empire enforced a trade embargo on Egypt and Syria in 692, and Napoleon put an embargo on the British Empire into effect (Juhász, 2018). In the wake of World War I, the use of sanctions increased considerably – an “economic weapon” used during war, but also seen as an alternative to war that potentially deters future conflict (Mulder, 2022).

Building on classic models of sanctions (Kaempfer and Lowenberg, 1988; Eaton and Engers, 1992), the theoretical literature examines the costs associated with sanctions for both the sender and target countries, and offers guidance on how to implement them effectively (Souza, Hu, Li, and Mei, 2024; Johnson, Rachel, and Wolfram, 2024; Clayton, Maggiori, and Schreger, 2023; Sturm, 2024; Itskhoki and Ribakova, 2024).

The empirical research on sanctions started in earnest with the seminal work on sanction effects by Hufbauer, Schott, and Elliott (1990). Since then a large literature has emerged on the determinants and effects of sanctions, supported by new comprehensive sanctions data, such as by the Global Sanctions Database by (Felbermayr et al., 2020).[4] The overwhelming majority of papers study the effects of sanctions on the target country, in particular the effects of trade sanctions (Felbermayr et al., 2020; Dai et al., 2021; Kohl, 2021), financial sanctions (Cipriani, Goldberg, and La Spada, 2023; Drott, Goldbach, and Nitsch, 2024), sanctions on central bank assets (Krahnke, Minesso, Mehl, and Vansteenkiste, 2024), smart sanctions targeted at individual firms or persons (Ahn and Ludema, 2020; Draca, Garred, Stickland, and Warrinnier, 2022; Nigmatulina, 2023), or the interaction of several types of sanctions (Bayer, Gilch, and Saidi, 2024), with overall mixed results (for a discussion see, e.g. Kohl, 2021). A more recent strand of research also considers the effect of sanctions on the sending country (Crozet and Hinz, 2020; Besedeš, Goldbach, and Nitsch, 2021), as well as on how third countries adjust to sanctions (Corsetti, Demir, and Javorcik, 2024).

The recent literature on sanctions uses increasingly rich, granular data, for example at the level of individual firms or bank accounts (for a particularly comprehensive analysis on sanctions effects in Russia see Egorov, Korovkin, Makarin, and Nigmatulina, 2024). Granular data also allows to evaluate new types of “smart sanctions” that were targeted at specific companies or persons (Ahn and Ludema, 2020; Draca, Garred, Stickland, and Warrinnier, 2022; Nigmatulina, 2023). This trend towards micro-level analyses deepens our understanding of the losers and winners of sanctions, and also facilitates the identification of causal effects.

In addition, there is a growing body of work on financial sanctions, e.g. (Cipriani, Goldberg, and La Spada, 2023; Drott, Goldbach, and Nitsch, 2024; Krahnke, Minesso, Mehl, and Vansteenkiste, 2024) , as well as on the role of sanctions for currency markets and the exchange rate, partly motivated by the G7 sanctions against Russia after February 2022. Itskhoki and Mukhin (2022), for example, show that the impact on the exchange rate depends on the type of sanctions imposed, with asset freezes and export sanctions resulting in depreciation, while sanctions on imports resulting in appreciation.Eichengreen et al. (2023) show evidence consistent with this theory, not just for Russia today, but also in a broader historical context. Sanctions may also undermine the position of the Dollar as a reserve and trade invoicing currency, as shown by Berthou (2023), Bianchi and Sosa-Padilla (2023), Chupilkin, Javorcik, Peeva, and Plekhanov (2023), and McDowell (2023). This relates to the broader literature on financial hegemony and dollar dominance covered in Section 5.1 (see also Steil and Litan, 2008).

3.2 Embargoes and Blockades

There is renewed interest in the economics of embargoes and blockades, during which the sender completely halts economic exchange with the target. Embargoes and blockades can be seen as a particularly drastic form of sanctions that mainly occur during wars and armed conflicts, and their economic effects have been studied by Irwin (2005), Etkes and

4. For an overview and discussion of this and other datasets refer to Portela and Charron (2023).

Zimring (2015), Fetzer, Feld, Lambert, and Garg (2024), Lambert (2012), Mulder (2022), and Juhász (2018), among others. Russia's full-scale invasion of Ukraine in 2022 brought embargoes back to the forefront of public debate in Europe.

In "the Great German Gas debate" of 2022, economists focused on the cost of imposing a full embargo on Russian gas imports (for a discussion see Moll, Schularick, and Zachmann, 2023) . For Germany, some economists predicted a GDP decline of up to 12% (e.g. Krebs, 2022), while others, in particular Bachmann et al. (2022), pointed to the power of substitution effects and predicted only a mild recession. Eventually Bachmann et al. were proven right, as German GDP barely shrunk after Russia (not Germany) imposed a unilateral gas embargo.

3.3 Tariffs and Trade Agreements

Tariffs and trade agreements are additional instruments in the geoeconomic toolkit of governments. Both Hufbauer, Schott, and Elliott (1990) and Felbermayr et al. (2020) see tariffs as a distinct category from sanctions. This is because classic trade policy measures such as tariffs or anti-dumping are regarded as primarily protectionist and targeted at audiences at home, while sanctions primarily aim to punish foreign countries. Felbermayr et al. (2020) recognize, however, that in an era of increasingly weaponized trade policies, the line between the two policy tools is becoming increasingly blurry.

The US-China trade war of the past decade offers new lessons on the (geo)political use of tariffs (for an overview see Fajgelbaum and Khandelwal, 2022). Fetzer and Schwarz (2020), for example, show that Chinese tariffs were targeted to hurt US regions with high voting shares for Donald Trump, while Fajgelbaum, Goldberg, Kennedy, and Khandelwal (2019) show that US import tariffs were higher for products made in politically contested counties in the US, suggesting tailored protectionism.

Geopolitical considerations also drive the design of trade agreements (Eichengreen, Mehl, and Chițu, 2021). At the same time, there is evidence trade agreements increase geopolitical alignment between countries (Vicard, 2012).

3.4 Export and Investment Controls

Export controls give governments the right to limit exports of certain goods or technologies to other countries. These controls are often motivated by national security interests, but are also believed to have negative side effects on innovation, competitiveness, investment, and trade. There is little research focusing specifically on export controls, so that many open questions remain. Crosignani, Han, Macchiavelli, and Silva (2024) shows that US-imposed export controls successfully disrupted the supply of goods to Chinese firms, but at the cost of major collateral damage. Affected firms in the US lost revenues, profitability, and stock market capitalisation, with little evidence for reshoring. On the other hand, Chinese-imposed export controls of rare earth elements led to innovation and long-term productivity growth in downstream sectors abroad (Alfaro, Fadinger, Schymik, and Virananda, 2024).

A related tool is investment screening. Over the past decade, many countries have introduced mechanisms to monitor and restrict investments. These new policies were often motivated by the growing number of foreign takeovers in critical sectors, in particular by Chinese state-controlled firms. The literature on this topic remains limited, but recent evidence shows that these restrictions have negative effects on inward investment flows (e.g. Eichenauer and Wang, 2024), as well on the probability of foreign takeovers and shareholder value (Frattaroli, 2020).

3.5 Sabotage, Espionage, and Cyberattacks

A particular aggressive geoeconomic tool is sabotage. It can range from purely economic forms of sabotage, e.g. targeting specific foreign firms through sanctions that reduce their productivity (Liu, Rotemberg, and Traiberman, 2024), to industrial espionage (Glitz and Meyersson, 2020; Glitz, Keita, and Quentel, 2023), or even military sabotage, e.g. via the destruction of critical infrastructure, such as the destruction of North Stream 2, or via targeted bombings. While there is some research on the economic effects of targeted bombings during war (which we discuss in Section 7.2), the economic and geopolitical consequences of sabotage more broadly are not understood yet.

Cyberattacks and hacking can also be regarded as a geoeconomic tool of states and quasi-state actors. A small but growing literature shows the large economic damage of these activities. Firms exposed to cyberattacks experience declines of stock returns and profits (Jamilov, Rey, and Tahoun, 2023). Cyberattacks can also have large spillover effects across industries (Jamilov, Rey, and Tahoun, 2023) and even to other countries through multinational firms (Crosignani, Macchiavelli, and Silva, 2023).

3.6 Foreign Aid

Foreign aid can take many forms, such as humanitarian aid, disaster relief, development assistance, military aid, export credit subsidies, or grants and loans. In contrast to sanctions, states seldom declare their geopolitical goals when sending humanitarian aid to other countries. Empirical analyses, however, indicate that geopolitical considerations shape both the direction and timing of foreign aid and lending flows (Alesina and Dollar, 2000; Kuziemko and Werker, 2006; Faye and Niehaus, 2012; Dreher et al., 2022). While foreign aid can help countries to achieve their geopolitical goals, it can also have unintended geopolitical consequences, such as an increasing the risk of conflict in recipient countries (Nunn and Qian, 2014).

4 Geopolitics and Trade

4.1 International Power and Trade – From Mercantilism to Hirschman's Economic Coercion

Many influential thinkers, including Kautilya, Niccolò Machiavelli, Adam Smith, David Ricardo, John Stuart Mill, and Susan Strange, have studied the relationship between international trade and power. The central trade-off has remained the same through the ages: Economic integration can strengthen national power, but also exposes a country to new dependencies and risks.

In his seminal book on power and trade, Albert Hirschman (1945) provides a sweeping history of economic thought on the topic. He starts with mercantilist ideas according to which more wealth always translates to more national power – typically at the expense of rival powers. Leading mercantilists like Jean Baptiste Colbert in the 17th century saw international trade as a zero-sum game and therefore favored heavy government intervention to avoid trade deficits and dependency. Over the course of the 18th century, this mercantilist worldview gave way to the liberal school of thought, led by Adam Smith and Hume, which emphasized the large gains from trade both in economic and political terms.[5] Hirschman (1945) emphasizes that, despite the rise of liberalism, some core ideas of mercantilism resurfaced again and again, especially in times of geopolitical upheaval.

One recurring mercantilist idea is that larger, militarily stronger, or more competitive countries can extract gains from trade from comparatively weaker powers. Late 19th century thinkers like Sering emphasized that "there exist between national economies relations of exploitation and of subjugation" (Sering, 1900). This is consistent with Findlay and O'Rourke (2007), who offer a broad historical account of such dependencies and the fight over resources and trade rents during the past 1000 years.

Hirschman's 1945 book, written under the impression of Nazi Germany's ruthless foreign aggression, is centered on this view. It offers an in-depth analysis of the mechanisms of international economic coercion and rent extraction, particularly by threatening to disrupt trade or financial relations with another country. The core themes of this book and Hirschman's ideas on trade policy as an "alternative to war" have returned to the forefront of public debate today, motivated in large part by China's increasing assertiveness, Donald Trump's transactional "America First" trade policy, and the large-scale sanctions against Russia since 2022. It is therefore not surprising that many of the influential recent contributions in geoeconomics build on Hirschman's work.

Clayton, Maggiori, and Schreger (2023) present "a framework for geoeconomics". In their model, a large, hegemonic country overcomes the notorious problem of limited enforceability of international contracts. The key mechanism is to coordinate joint threats with other countries, also by leveraging the amplification of shocks through input-output networks. The hegemon uses these coordinated sanctions to act as a global enforcer, for example by threatening to cut off access to global payment systems or critical technology. In this world, a hegemon has a dual role. It uses its power to extract global rents that makes smaller countries worse off. But the hegemon also provides a global public good by facilitating the enforcement of cross-border contracts, which helps to expand global production and welfare.

Clayton, Maggiori, and Schreger (2024) build on this framework, focusing in particular

5. A central idea of liberal thinkers is that economic integration can help promote peace, as mutual dependencies and commercial ties increase the opportunity cost of war (see Section 7.1 for a more detailed discussion on the relationship between trade and war).

on the response of countries that seek to preempt coercion and rent extraction by the hegemon. They emphasize a trade-off. Individually, small countries can gain security by decoupling their economies from the hegemon's trade and financial networks. But if many countries do this in an uncoordinated fashion, this can set off a "fragmentation doom loop" that shrinks the global gains from trade.

Sturm and O'Connor (2024) and Kooi (2024) have a similar focus on how countries react when faced with increased risk of geoeconomic coercion and conflict. In both papers, countries strategically use financial subsidies and trade policies at home to be better prepared for future conflict abroad. These models help rationalize why governments choose to support certain domestic industries out of forward-looking geopolitical motives, even though such support may seem inefficient in peacetime.

The notion of economic coercion also plays a central role in the paper by Liu and Yang (2024), which combines theory with a comprehensive empirical effort to measure international power and bilateral political linkages. A key finding in their paper is that rising geopolitical tensions can motivate countries to strategically expand their international power through trade networks.

4.2 Hegemony, Alignment, and Globalisation

Another reviving debate is that on hegemony and globalization. How do superpowers shape the global trading system? And what are the economic implications of a shift from a hegemonic to a more multipolar world? During the Cold War era of the 1970s and 1980s these questions were studied extensively, with research spanning economic history (e.g. Kindleberger, 1973, 1986), political science (e.g. Gilpin, 1981), and the "world system" school of sociology (e.g. Braudel, 1984; Wallerstein, 1989).

Kindleberger (1973), in particular, developed the concept of "hegemonic stability" according to which an integrated global economic system requires a hegemon to underpin it. Gilpin (1975) and Krasner (1976) further developed this idea, stressing that hegemons favor integration out of self-interest rather than out of altruism. A hegemonic power with a large, efficient economy is bound to benefit from integration, which then leads it to uphold integration through the use of military and political power blocs. Recent work takes up these ideas and formalizes them.

Broner, Martin, Meyer, and Trebesch (2024) present a model of hegemonic globalization in which trade increases with political alignment. The presence of a large hegemonic country prompts alignment around the hegemon, thereby supporting global trade and welfare. The rise of a second, large power, however, may cause globalization to unravel. Empirically, they test their theory using a newly compiled dataset of bilateral and multilateral treaties across 200 years. They find that hegemons drive treaty-signing and that countries that sign treaties with a hegemon trade more, not just with the hegemon, but also with other countries that are aligned with the hegemon. A world with a single, large hegemon is likely to experience deeper globalization.

The link between political alignment and trade is also explored in Kleinman, Liu, and Redding (2024). They show that countries that trade extensively with each other are also more likely to be politically aligned with each other. Empirically, they measure economic exposure using detailed trade data and exploit China's entry into the global trading system to show a causal effect of economic exposure on (re-)alignment. In related work, Hinz (2023) shows that geopolitical considerations can drive a country's decision to integrate economically with another country.

4.3 Fragmentation, Decoupling, and Supply Chain Risks

The current debate on **trade fragmentation** has its roots in the "deglobalization" discussion of the late 2010s and early 2020s. Researchers like Colantone, Ottaviano, and Stanig (2022) speak of a "global backlash" against globalisation, while Irwin (2020) sees globalisation in retreat for the first time in decades. Based on detailed data, however, Antràs (2020) and Goldberg and Reed (2023) both refute the idea that the world economy has entered a phase of deglobalization. Instead, they point to the surprising resilience of global trade and rather see a pattern of "slowbalization", meaning a slowdown in the growth of global trade after two decades of rapid expansion.[6]

At the same time, both Antràs (2023) and Goldberg and Reed (2023) point to Ukraine's attack on Ukraine as the start of a new era of geopolitical turmoil, with heightened risks to globalisation and free trade. Goldberg and Reed (2023), for example, emphasize that "national security is the most powerful argument against unconstrained, market-driven globalization to date." As Irwin (2023) points out, this statement resonates with Adam Smith who famously wrote "defence, however, is of much more importance than opulence".

In line with this, there is now a rapidly growing body of empirical papers studying signs of geoeconomic fragmentation, decoupling or "friendshoring" (for a survey see Aiyar, Presbitero, and Ruta, 2023).[7] To study geopolitical fragmentation the literature uses various measures of geopolitical distance between countries. A common approach has been to use differences in countries' voting patterns in the United Nations General Assembly, e.g. using votes on the Russian war against Ukraine (e.g. Bolhuis, Chen, and Kett, 2023; Gopinath, Gourinchas, Presbitero, and Topalova, 2024; IMF, 2023). The paper by Fernández-Villaverde, Mineyama, and Song (2024) constructs a more comprehensive fragmentation index by combining a broad range of sub-indicators such as trade openness, trade restrictions and sanctions, geopolitical risk or conflicts. Based on this indicator, they find that geopolitical fragmentation has negative effects on GDP, industrial production, investment, and asset markets, with particularly severe impacts on emerging economies.

The overall take away from this small but growing literature is that trade flows are increasingly being redirected along geopolitical lines, although there is disagreement on how large this divergence really is. Moreover, fragmentation is found to be economically costly (e.g. Attinasi, Boeckelmann, and Meunier, 2023; Góes and Bekkers, 2023; Hakobyan,

6. Others paint a more pessimistic picture, pointing to the rapid rise in global trade restrictions (Aiyar et al., 2023) and to the political backlash against globalization.

7. Aiyar et al. (2023) define geoeconomic fragmentation as "a policy-driven reversal of global economic integration often guided by strategic considerations".

Meleshchuk, and Zymek, 2023; Javorcik, Kitzmüller, Schweiger, and Yıldırım, 2024). Another strand of literature focuses on connector countries, that cultivate links with partners from different geopolitical blocs (see for example Aiyar and Ohnsorge, 2024).

A related and influential literature focuses specifically on **global value chains**, which are at the core of today's globalized economy (for excellent surveys see Antràs and Chor, 2022; Baldwin and Freeman, 2022). In recent years the positive view on global value chains has been overshadowed by concerns about supply chain risks, including geopolitical risks.

Researchers are therefore increasingly focusing on supply chain vulnerabilities, be it in conflict regions such as Ukraine (Korovkin, Makarin, and Miyauchi, 2024) or in the context of the US-China trade war (e.g. Antràs and Staiger, 2012; Blanchard, Bown, and Johnson, 2024; Grossman, Helpman, and Redding, 2024). Alfaro and Chor (2023), among others, show evidence for a "great reallocation" of US supply chains, with a shift away from China and toward closer allies such as Mexico and Vietnam. A key strength of this line of work is the accessibility of rich and representative micro data. Smirnyagin and Tsyvinski (2022) and Liu, Smirnyagin, and Tsyvinski (2024), for example, study supply chain disruptions based on the universe of US seaborne imports, with more than 200 million shipment-level observations. It is only a matter of time before this type of data is used to better understand the role of geopolitical risk shocks in global trade.

5 The Geopolitics of International Finance: Currencies and Capital Flows

The link between finance and power has fascinated scholars for a long time. Political scientists, sociologists and historians have repeatedly returned to the question of structural power in the international financial system (see e.g. Kennedy, 1987; Tilly, 1990; Helleiner, 1994; Strange, 1996; Hardt and Negri, 2000; Frieden, 2006). Here we focus on two main branches of literature that link geopolitics and international finance: (i) currency dominance and (ii) state-driven capital flows. This literature was pioneered by Barry Eichengreen, among others, and is now gaining broader traction.

5.1 Currency Dominance and Financial Hegemony

The question of financial hegemony and currency dominance is seeing a notable revival, mostly with a view to the US Dollar's dominant role in global trade and finance. Classics in this field include Eichengreen (1996), Eichengreen (2011) and the work by Ilzetzki, Reinhart, and Rogoff (2019). For excellent recent surveys see Gopinath and Itskhoki (2022) and Gourinchas, Rey, and Sauzet (2019). Many recent contributions study the drivers and consequences of US dollar usage in trade invoicing and currency markets, partly motivated by the seminal work of Gopinath et al. (2020) and Gopinath and Stein (2021). Other influential work focuses on the role of the US Dollar as an issuance currency in debt markets (e.g. Maggiori, Neiman, and Schreger, 2019), as well as the unique ability of the United States to produce safe assets (e.g. Farhi and Maggiori, 2018).

Several recent papers turn to history to learn about currency dominance and hegemony. The recent paper by Coppola, Krishnamurthy, and Xu (2023), for example, looks back four centuries and shows that, both then and now, investors seek deep, liquid asset markets. This liquidity channel helps to explain the long spells of dominance by the Dutch florin, the British pound, and the US dollar, respectively.[8]

The surprising persistence of global anchor currencies is also explored in Chahrour and Valchev (2022), who emphasize the role of trade collateral, as well as Mukhin (2022) who focuses on complementarities in price setting and input-output linkages. These papers are in line with Kennedy (1987), who argues that currency dominance is surprisingly resilient, and often the last of the great power privileges to fall. The British pound, for example, still dominated global trade and finance in the early 1920s, although the UK's military and economic dominance had long waned.

Looking ahead, the big question lurking behind much of this work is whether and when the hegemony of the US dollar will come to an end (Rey, 2019). The decline of US hegemony has been wrongly predicted many times before (e.g. Kennedy, 1987; Wallerstein, 2003), and for the time being, the US Dollar continues to be preeminent. However, given historical experience and the ongoing rise of Asian economic powers, it may only be a question of time. Eichengreen (2011), Gourinchas (2019) and Mukhin (2022), all agree that the current US-dominated system will ultimately give way to a new global equilibrium, and they see the most likely outcome as being a multipolar order of regional currencies.

If history is any lesson, geopolitical forces will play a central role in a transition away from the Dollar (Eichengreen, Mehl, and Chitu, 2018; Ikenberry, 2001; Doshi, 2021). Early signs of such a shift are already apparent, as China has strategically expanded its footprint in the global financial system. Over the past 15 years, China has launched a global network of currency swap lines that offer access to liquidity to other central banks (Bahaj and Reis, 2022). China opened its government bond market to foreign investors (Clayton, Santos, Maggiori, and Schreger, 2024). Unnoticed by many, China has also become an international lender of last resort to countries in financial distress, providing more than USD 150 billion in bailout loans over the past decade (or about 20 percent of IMF lending in the same period) (Horn, Parks, Reinhart, and Trebesch, 2023). In addition, the Chinese state has also become the largest official lender around the world through its Belt and Road Initiative, surpassing the loan portfolio of all Western governments combined (Horn, Reinhart, and Trebesch, 2021). We turn to the issue of government-directed capital flows in the next section.

5.2 Geopolitics and Capital Flows

The link between geopolitics and the international allocation of capital is underexplored, both theoretically and empirically.

One emerging literature examines state-directed capital flows, particularly government

8. See also Eichengreen (1996), Ilzetzki, Reinhart, and Rogoff (2019) or Vicquéry (2022).

to government lending, which is inherently (geo)political. Alfaro, Kalemli-Ozcan, and Volosovych (2014) pioneered the literature on sovereign to sovereign capital flows, by showing how large and countercyclical these flows have been since the 1970s. Horn, Reinhart, and Trebesch (2021) document the large rise in Chinese official international lending (see also Dreher et al., 2022). They show that China's overseas lending to developing countries is almost entirely state controlled, much larger than previously thought, and has terms that resemble international private lending rather than those of other official creditors. Gelpern et al. (2023) and Franz et al. (2024) follow up on this work to show that Chinese state banks include (geo)political clauses in their international lending contracts, and that Chinese banks offer preferential lending terms for strategic projects abroad, such as for infrastructure that enables trade with China or for military or political prestige projects.

Horn, Reinhart, and Trebesch (2024) provide a big picture view on state-directed capital flows across 200 years, based on a newly compiled global database of loans, grants, and central bank credits going back to 1790. They show that the rising hegemons of their time also were the dominant official lenders of their time: European nations in the 19th century, the US in the decades after World War II, and today, increasingly China. Then and now, state-driven capital flows are strongly counter-cyclical. They rise precisely when private capital flows recede, in particular in periods of turmoil, such as during major wars and financial crises. These findings are in line with Kindleberger's 1981 description of a *hegemonic stabilizer* which provides "a steady if not countercyclical flow of capital".

These papers offer broader historical lessons for today. In a more multi-polar world with growing geopolitical tensions, states are likely to (again) become very dominant in global finance, while private capital flows may play a lesser role, possibly due to capital controls. In this view, it is no coincidence that most of today's rising powers, such as China, India, or Saudi Arabia are prone to use state banks and government-controlled financial vehicles when investing or lending abroad. Global capital markets are likely to become more (geo-)political in the coming decades.

The first signs of geopolitical fragmentation in global finance are becoming visible, at least according to several studies that use current data. Kempf, Luo, Schäfer, and Tsoutsoura (2023), for example, show that the ideological distance between countries shapes the size and direction of capital flows while Aiyar, Malacrino, and Presbitero (2024) and Gopinath, Gourinchas, Presbitero, and Topalova (2024) find that FDI flows increasingly correlate with geopolitical tensions and (re-)alignment in recent years. More work is needed on the role of geopolitics and hegemony in the international financial system.

6 Geopolitical Risk and the Domestic Economy

A growing literature examines the economic cost of geopolitical risk. In their influential paper, Caldara and Iacoviello (2022) define geopolitical risk as "the threat, realization, and escalation of adverse events associated with wars, terrorism, and any tensions among states and political actors that affect the peaceful course of international relations". Based on this definition, they developed a set of novel geopolitical risk indices at the global, country and sectoral level, using textual analysis of modern and historical newspapers. This approach builds on that of Baker, Bloom, and Davis (2016), who first showed how to use newspaper coverage to capture economic uncertainty shocks across countries and time.

Using their indices, Caldara and Iacoviello (2022) show that geopolitical risk shocks are associated with a decline in investments, employment, and stock markets, as well as a higher risk of economic disasters. Their paper and data also motivated a large body of empirical literature on the spillovers of geopolitical risks on asset markets, inflation, and bank lending. Good examples of this work include Caldara, Conlisk, Iacoviello, and Penn (2024), Niepmann and Shen (2024) and Giovanni et al. (2024), for a survey see Hodula, Janků, Malavaná, and Ngo, 2024.

Other authors have refined their measurement approach. Hassan, Hollander, Lent, and Tahoun (2019), in particular, use a large database of earning call texts to measure firm-level risks, including geopolitical risks. Bondarenko, Lewis, Rottner, and Schüler (2024) move beyond English-language newspapers and show that risk indices based on Russian-language newspapers are much better suited to trace geopolitical shocks impacting the Russian economy.

7 The Economics of (External) Wars

War is the most destructive outcome of international power rivalry, with major (geo)economic implications. Here, we review economic research on external rather than internal wars, because geoeconomics is by definition international and focuses on questions of cross-border rivalry.[9]

We focus, in particular, on (i) the longstanding debate on trade and war, (ii) the literature on the cost of (external) wars, and (iii) economic research on war finance and military production. For an excellent overview on the broader economic literature on wars and conflict see the new handbook by Dube, Morelli, Ray, and Sjostrom (2024).

7.1 Trade and War – Does Globalization Bring Peace?

Montesquieu, Kant, and John Stuart Mill all wrote about the relationship between trade and war. Then as now, one of the central questions is whether economic integration brings peace, or rather the opposite (see the superb summary in Thoenig, 2024).

In the liberal view, trade reduces the likelihood of war between states, because economic interdependence and commercial linkages raise the opportunity cost of conflict. A famous proponent of this view was Angell (1909), who argued in his bestselling book of 1909 that the economic costs of war had become so high as to outweigh any possible gains. He therefore predicted that a war between European powers was highly unlikely, only to

9. The rich economic literature on civil war and intra-state conflict is for example surveyed in Blattman and Miguel (2010) and Garfinkel and Skaperdas (2012).

be proven fundamentally wrong 5 years later.

The realist view, on the other hand, suggests that trade increases the rivalries between states. War becomes more likely with economic integration, as countries become more concerned about dependencies and compete more intensely for strategic goods and the gains from trade (see for example Findlay and O'Rourke, 2007; Waltz, 1979).

Early empirical work on war and trade examined either the effect of trade integration on the probability of war (e.g. Polachek, 1980; Mansfield, 1995; Barbieri, 2002) or the opposite effect, i.e. the effect of conflicts on bilateral trade (Blomberg and Hess, 2006; Glick and Taylor, 2010).

The seminal paper by Martin, Mayer, and Thoenig (2008) combines the liberal and realist view and shows that globalisation has a two-sided impact on risks of war and the opportunity cost of war. Bilateral trade *decreases* the probability of war, because two countries become economically more dependent on each other. Global trade, on the other hand, can *increase* war risks, because in a multilateral, highly integrated world, countries can easily switch trading partners and overcome the dependency from any given opponent. They show supporting evidence that globalization has lowered the probability of large-scale global conflict since World War II, but it also increased the likelihood of smaller bilateral wars. As a result, conflicts have become more localized over time, with the average distance between war parties halving between 1950 and 2000.[10]

Thoenig (2024) generalizes and adapts this model to study geoeconomic mechanisms and in particular the role of trade policy "in the shadow of war". He highlights a security dilemma, where reliance on imports from a geopolitical rival raises the cost of bilateral war, but also creates incentives to reduce this dependence by diversifying imports. This diversification, in turn, lowers the cost of conflict with each individual nation. As a result, there can be a reinforcing feedback loop between "derisking" and the global risk of war. The model is useful to evaluate current policy dilemmas, such as US-China decoupling or Ukraine-EU relations. Initially, an increase in trade costs between the US and China results in "geoeconomic welfare gains" for the US. But if trade costs grow too large, conflict risks escalate, leading to a collapse in US welfare. Similarly, Ukraine's accession to the EU increases welfare and consumption, but it also results in fewer incentives for de-escalation. A related ongoing project on the benefits and costs of de-risking is Mayer, Mejean, and Thoenig (2024).

7.2 The Economic Costs of War

What are the economic costs of war? The first estimates date back to at least World War I (see for example J. B. Clark, 1916; Rossiter, 1916; J. M. Clark, 1931). Since then, researchers examined the effects of war on a broad range of outcomes (for a recent survey see Munroe et al., 2023).

10. Jackson and Nei (2015) empirically examine the relationship between trade, military alliances, and war and show that increased trade fosters the formation of military alliances which in turn reduce incentives to wage wars.

Barro (2006) and Barro and Ursúa (2008) show that major wars are among the most disastrous macroeconomic shocks, that can result in unparalleled collapses in consumption, GDP, and asset prices in belligerent countries. Recent research further shows the large cross-country spillovers of war, with the economic costs increasing in the vicinity of the fighting (Federle et al., 2024; Federle, Meier, Müller, and Sehn, 2024). This is in line with Davis and Weinstein (2002) and Miguel and Roland (2011), who document the large and long-lasting destructive impact of bombing campaigns on economic activity in the affected areas. Using a novel measure of shortages, Caldara, Iacoviello, and Yu (2024) show that international wars are associated with shortages in the US economy.

Other literature has looked beyond macro aggregates. War exposure increases out-group hostility and lower civic engagement, which might explain the persistent effect of war on economic activity and trade (Rohner, Thoenig, and Zilibotti, 2013; Dell and Querubin, 2017).[11] This is in line with the transaction-level analysis by Korovkin and Makarin (2023), who show that after Russia's attack on Ukraine in 2014, trade decreased more for firms in areas with less ethnic Russians, i.e. in areas where the erosion of trust due to the war was larger. Furthermore, wars can force a substitution of local inputs to imported ones (or vice versa), with large adverse effects on firms (e.g. Amodio and Di Maio, 2017) and affect supply chains more generally (Korovkin, Makarin, and Miyauchi, 2024).

7.3 War Finance and Military Production

War financing is a crucial factor in determining the success of war, as pointed out by Niccolò Machiavelli centuries ago. Over time, the methods to finance wars have evolved significantly. Tilly (1990) famously noted that "war made states and states made war", emphasizing how warfare compelled states to develop better institutions in order to raise sufficient funds, which in turn enabled them to engage in further conflicts (Gennaioli and Voth, 2015; Cantoni, Mohr, and Weigand, 2024). As wars grew in scale and complexity, so did the challenges of financing them, often forcing entire economies to adapt to the demands of the war effort. However, effective war financing is not simply about maximizing funds available to warfare, but requires balancing a number of (conflicting) additional objectives, in particular economic stability and political cohesion (Zielinski, 2016).

The debate on war finance often revolves around the source of funding. In the 18th century, economists like Adam Smith and David Ricardo advocated for financing wars through taxation rather than excessive borrowing. Similarly, during World War II, Keynes (1940) famously proposed tax increases rather than debt or money printing.

The modern literature on war finance is small and underdeveloped. First quantitative evidence was provided by Ohanian (1997), who runs counterfactual exercises for the US and finds that shifting from debt to tax-financing considerably reduces the economic costs of war. Additionally, there has been research on how the method of war financing

11. Other research shows that individuals that were exposed to war violence exhibit higher levels of local cooperation and civic engagement (Bauer et al., 2016).

can impact the reputation of a nation's currency (Hall and Sargent, 2014). Scheve and Stasavage (2016) show that the world wars saw major increases in tax rates and tax revenues, especially in belligerent countries, while Mitchener and Trebesch (2023) show that a massive increase in government debt to GDP occurred during both World War I and World War II. Governments at war also have a history of introducing new types of taxes, such as "excess profit" taxes (Hicks, Hicks, and Rostas, 1941).

Recent work also studies the link between hegemony and war finance. Pflueger and Yared (2024), in particular, show that militarily dominant countries benefit from a funding advantage in the form of lower government bond yields, which helps those hegemonic countries to sustain its their power advantage and win wars. In their model, it is the size of a country's military capital, which explains the exorbitant privilege enjoyed by hegemons like the US.

Lastly, there is the long-standing debate on "guns vs butter", i.e. the trade-off between military and social spending. The early literature is inconclusive on whether such a trade-off exists (see e.g. Russett, 1982; Mintz, 1989). Recent work by Marzian and Trebesch (2024) studies war finance and military spending booms over the past 150 years and finds that cuts in social spending are the rare exception. Most wars and military booms were financed through debt and, to a lesser degree, by taxes.

A second main factor for the success of war is effective military production, i.e. how the money for armament and warfare is best spent. One strand of research focuses on the efficiency of military procurement and production. As wars require a sudden, massive ramp-up in weapons production, economists have long studied how to increase productivity, e.g. via *learning by doing* mechanisms. Examples of this work include Thompson (2001), Thornton and Thompson (2001), and Ilzetzki (2024), all of which examine the striking success of US aircraft and warship production increases during World War II. Others study peacetime procurement processes, which have a reputation of being slow, wasteful, and inefficient (for a survey see Uttley, 2018). The paper by Bhattacharya (2021), for example, studies how small changes in R&D contests by the US military can significantly increase the effectiveness of procurement. More recently, Alekseev and Lin (2024) examine the production and trade of dual-use goods, which have come under increased scrutiny, also due to China's new "military-civil fusion" policy.

Another strand of research focuses on the spillover effects of military production and military R&D. The received literature on military spending and growth mostly used aggregate data and delivered mixed, often contradicting results (see the survey by Yesilyurt and Yesilyurt, 2019). Recent work, in contrast uses rich micro data. Gross and Sampat (2023) and Kantor and Whalley (2024), for example, find that the US government's large-scale military R&D investment programs during World War II and during the Space Race of the Cold War, each had substantial positive long-run effects on the US economy and innovation. Using more recent data, Moretti, Steinwender, and Van Reenen (2023) give support for this positive view, showing that public R&D investments increases private investments, especially for defense-related R&D.

8 The Future of the Field

The field of geoeconomics, in its modern incarnation, is still in its early stages. Many open questions and research challenges remain. In the following, we summarize what we see as some of the key opportunities for future work.

One of the central opportunities in this emerging literature is a better measurement and conceptualization of geopolitical and geoeconomic phenomena. There has been important progress in capturing geopolitical risk at the country level (Caldara et al., 2020), but much remains to be done to measure these risks at a more granular level and at higher frequencies. Similarly, we see much potential for developing better measures of bilateral alliances, rivalries, and spheres of influence (for recent contributions on these topics see e.g. Liu and Yang, 2024; Camboni and Porcellacchia, 2024; Broner, Martin, Meyer, and Trebesch, 2024). The same is true for a conceptualization of economic coercion or for the quantification of geoeconomic rents and their extraction. Better measurement will also allow the rich new theoretical work on geoeconomics to be brought to the data.

Second, we see considerable potential in the use of history. The era of the Cold War between the 1950s and the 1980s, for example, has not been studied much by economists in recent decades, but it offers many opportunities to learn about geoeconomic weapons, arms races, and deterrence. The same is true of the Anglo-German rivalry after the 1880s, as well as the disastrous decades between 1900 and 1945. Rapid advances in machine learning and image recognition now make it possible to extract large amounts of historical data and text quickly and efficiently, offering many research opportunities to draw lessons for the future.

Third, we expect to see much more research on "economic weapons" and geoeconomic policy instruments. The empirical literature on sanctions has grown considerably, but has only begun to take advantage of rich micro data and state-of-the-art methods for causal identification. Moreover, the theoretical literature on sanctions has been lagging behind. Future work should build on recent advances to better understand the costs, trade-offs, and effectiveness of sanctions and other tools such as export and investment controls. Moreover, the literature would benefit from a more holistic view that examines not just one tool, but the entire "poison cabinet" of geoeconomic policy instruments. Which tools are most effective and which ones cause the least collateral damage? How do the various coercive tools interact? More theory and evidence on these questions would be valuable for policymakers.

Fourth, we see many research gaps in the geopolitics of international finance. Most of the research reviewed here focuses on international trade, while theory and empirical work linking geoeconomics and international financial markets remains scarce. We lack knowledge about the impact of geopolitical shifts and shocks on global capital allocation, currency markets, and asset prices.

Fifth, we see the need for a new wave of research on military economics and the economics of external wars (i.e., on "actual weapons"). Research in recent decades has focused heavily on civil wars and armed insurgencies in the developing world. The drivers and characteristics of great power wars and interstate wars have received much less attention. Given the massive costs of external wars, it seems crucial to go back and study them in depth using modern methods and data. Similarly, there has been comparatively little work on military procurement and the military-industrial complex in the G20 countries. For example, we know little about China's and Russia's large-scale military buildups of recent decades. In Western countries, there has been limited progress in understanding how efficient procurement works. We also have a limited understanding of military supply chains or the industrial organization of arms production. Given ongoing concerns about conflict and war, it seems important to study this industry and better understand its vulnerabilities. More generally, we see a need to study "chokepoints" of industrial production and infrastructure in the potential event of war.

Finally, we believe that the nexus of geopolitics and technology deserves more attention in economic research, particularly the geopolitics of artificial intelligence and the geopolitics of green technologies. Across all of these themes, we expect to see considerable innovation and research activity.

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