

International Power Rankings: theory and evidence from international exchanges

Matteo Camboni and Michael Porcellacchia

October 11, 2021

Abstract

Throughout history, countries competed with one another to shape the international system in their favor, creating a link between international exchanges and how power is distributed among the different foreign actors. We show that, for each country, this link can be summarized by a simple function of the distribution of power: its Power Rank Index (PRI), i.e. the share of power held by all weaker foreign actors. Focusing on specific types of exchanges, our theory predicts that when a country's PRI increases, the country should trade more, conclude more economic and military deals, have better diplomatic and political relations, and send more economic and military aid. Testing each of these predictions with bilateral trade data (CEPII, 1949-2019) and bilateral data on international interactions (GDELT, 1979-2012), we find support for the theory and show the strong predictive power of the PRI. Finally, we assess the external validity of the theory discussing how it can shed light on some puzzling patterns of international relations, including Thucydides' Trap.

1 Introduction

Countries always used their economic and military influence to shape the international system in their favor. As testified by the rising competition between the United States and China, countries still find value in strengthening their military, and in carefully designing their economic policies to increase their influence, or avoid becoming too dependent on others (Moyer et al., 2018). These observations suggest that there is a link between the global distribution of coercive resources (power) and how the global surplus generated by the international system is distributed. The contribution of this paper is to propose and test a theory that can shed light on this link.

A natural approach to study how power affects the allocation of surplus is multi-lateral bargaining theory, such as Nash solution (Binmore, Osborne and Rubinstein, 1992). In this case, one would expect that countries with a higher share of global power should obtain a higher share of global surplus. While natural, this prediction is unsatisfactory when applied to historical cases, such as the Cold War. If the power share was the only thing that mattered, why were the United States and the Soviet Union so obsessed about claiming their superiority over each other? Why did the collapse of the Soviet Union have an opposite effect on the United States in regions where the USSR was the dominant power, compared to regions dominated by the USA? Indeed, in Eastern Europe, the US took advantage of the collapse of the previously dominant power by extending its network of alliances (Shiffrin, 2020). Instead, in Latin America, the collapse of the Soviet Union generated a more relaxed geopolitical environment, which led to an overall reduction in the extent of alignment with the United States (Levitsky and Roberts, 2011). These examples highlight a central feature of international relations that cannot be easily derived from standard bargaining models: the importance of a country's *power rank*, its rank in the relevant distribution of power.

The first contribution of this paper is to develop a simple game-theoretic model that accounts for the importance of the power rank. Our main result shows that the equilibrium payoff of a country is not determined by its power share, but by the power share held by all (strictly) weaker countries. We call *Power Rank Index (PRI)* such function of the distribution of power. As a consequence of this, we show that a country's equilibrium payoff is increasing in its power rank. Surprisingly, for given power rank, we show that an increase in power can be detrimental. Thus, in line with the previous example, countries within our model would only care about proving their superiority,

rather than showing their actual power. As a second implication, we find that the power rank determines how the changes in power of one country affect all the others. In line with the earlier examples, a reduction in power negatively affects stronger countries and positively affects weaker ones. Importantly, all these non-monotonic relations are summarized by the dependence on the Power Rank Index, which gives us a key variable to focus on in our empirical analysis.

Our second contribution is to show the empirical validity of the theory. Specializing the theoretical results to address specific types of international exchanges, we predict that when a country’s Power Rank Index increases, it should export and import more, have better economic, military and diplomatic relations, and send more economic and military aid. Testing each of these predictions with bilateral trade data (CEPII, 1949-2019) and bilateral data on international interactions (GDELT, 1979-2012), we find that the PRI has strong predictive power, and that its effects can be distinguished from the effects of a country’s power rank or share.

In our theoretical analysis, we consider an abstract setting where a local ruler (*proposer*) offers a vector of *transfers* to enlist the support of a set of foreign powers (*responders*), who are heterogeneous in a commonly known characteristic (*power*). We assume that transfers are implemented if and only if the proposer survives, an event whose probability is increasing in the share of (total) power of all responders that support the proposer. This setting features strategic complementarities: the incentive to support the proposer is increasing in the share of power of the other responders who are expected to do so. Moreover, as we assume that responders make their decisions simultaneously, the proposer’s offer will typically be compatible with multiple equilibria. We address this by assuming that the objective of the proposer is to minimize transfers while *robustly* maximizing its probability of survival, i.e. maximizing the probability of survival in the worst-case equilibrium compatible with the transfers.¹

The main result of our theory is that the equilibrium transfer received by every responder depends on the distribution of power only via its *Power Rank Index (PRI)*, i.e. the share of total power of all (strictly) weaker responders. Specifically, higher PRI corresponds to higher transfer. The key to understanding this result is to note that ensuring the support of one responder increases the other responders’ willingness to support. Building on this, we show that the proposer optimally offers transfers

¹In our setting, this assumption is equivalent to focusing on robustness to adversarial coordination (as in Inostroza and Pavan 2020), maximizing the probability of survival in every equilibrium, or induce support as the unique equilibrium outcome (as in Halac, Lipnowski and Rappoport 2021).

as to ensure the support of the strongest responder, even if no other responder were to support the proposer. With the strongest on its side, the proposer can ensure the support of the second-strongest with a smaller offer: just enough to compensate for the possibility that all responders but the strongest do not support the proposer. Iterating this reasoning, we find that the offers must ensure the support of a responder when all stronger responders support the proposer and the weaker ones do not. Finally, note that the more powerful is a responder, the higher its impact on the proposer's survival, and the less it cares about the decisions of the other supporters. As a result, every responder's equilibrium transfer is increasing in the power of all weaker responders, but decreasing in its own power as well as the power of all stronger ones. More specifically, we show that a responder's transfer is an increasing function of the power share of all weaker responders, its Power Rank Index.

A first implication of our main result is that the transfer from the proposer to a responder crucially depends on the power of third parties: for example, a reduction in the power of a responder negatively affects stronger responders and positively affects weaker ones.² As a simple application, note that, in our model, the most powerful country (the hegemon) is hurt³ by any weakening of the other international actors. As a consequence, it has a material interest in mediating and avoiding conflicts among international actors, and even in providing public goods that can allow others to prosper. This suggests, in line with Hegemonic Stability Theory (Webb and Krasner, 1989), that periods of undisputed hegemony should be peaceful and prosperous.

A second implication is that there is a non-monotonic relation between a responder's equilibrium transfer and its power: it decreases as the power share increases, but jumps up whenever the power rank increases. Indeed, an increase (reduction) in a responder's power rank triggers a discontinuous increase (reduction) in its PRI. An application of this idea is that any benevolent attitude of the hegemon will only last as long as its position of primacy (its power rank) is not threatened. Indeed, as we discuss in the paper, the finding that changes in the power rank induce jumps in payoffs can explain why tensions often build between two countries that reach similar levels of power (Thucidides' Trap). Our model offers a natural framework to study this famous

²This is consistent with the idea that the United States (a responder) can be affected in opposite ways in different regions (i.e. with respect to different proposers) by an event such as the collapse of the Soviet Union, depending on whether it was stronger or weaker than the USSR in that region.

³In the sense that its relations with respect to any proposer would deteriorate (become less profitable).

historical pattern, which is particularly relevant today in light of the growing tensions between the United States and China (Allison, 2017).

Besides these applications, our theory provides a rational-agent foundation of status-consciousness, the idea that leaders care about their *status*, i.e., “others’ perceptions of a state’s ranking on a set of valued characteristics” (Murray, 2018, 45). As we discuss in the paper, status-consciousness is a universal patterns of international relations: examples of this behavior can be found in vastly different geopolitical orders, from Asia to South America, from Ancient history to the modern age.⁴ To the best of our knowledge, our theory is the first to formalize the link between status and material interests: a crucial step to understand why countries might prolong or even start costly wars for what appear to be symbolic stakes (Renshon, 2017).

Moving beyond historical cases, we assess the relevance of our theory with an empirical analysis based on modern data. To this end, we expand the model to account for multiple proposers and periods. In this setting, the same country can be both a proposer and a responder.⁵ To emphasize the roles, we will refer to a country as *responder* when we study the effect of its power (and PRI) over others and as *proposer* when we study the effect of the power that others have over it. In line with the terminology of the model, the idea is that responders obtain a transfer/payoff from each proposer (e.g., favorable policies).

The main empirical challenge is to measure power, which in our stylized model is defined only by its effects on the political stability (survival) of a proposer.⁶ In our main empirical analysis we define the power that one responder has on a proposer as the *economic leverage (EL)* that the former has on the latter: the value of the trade flow between the two divided by the value of all goods produced or consumed in the latter. Using this metric, a responder is said to be *stronger* than another one with respect

⁴The importance of status will be discussed with examples from vastly different regions and periods. We provide examples from geopolitical orders dominated by an hegemon (the Roman Empire, the Qing dynasty in China, and the Inca in South America), as well as from Medieval Europe, early modern Europe, and recent world politics.

⁵In our baseline specification we study a global sample, where every country is both a proposer and a responder. The results are robust to focusing on subsamples where only major powers (flexibly defined) can be responders and only fragile states (flexibly defined) can be proposers. As we discuss in the paper, while the leading interpretation of our model is based on foreign powers pressuring a ruler, the model can also reflect other interactions that justify our focus on a global dataset.

⁶Because of this consequence-based approach, our model does not take a stand on which variable generates power. This is compatible with countries employing different types of resources to exert their influence and allows for the possibility that power is derived from a mix of economic and military leverage.

to a given proposer if it can impose larger economic imbalances on the proposer.⁷ As a result, a responder’s Power Rank Index with respect to a given proposer is the combined EL that all weaker responders have on the proposer. By our main result, this one-dimensional function of the power distribution is sufficient to summarize the effects of power on transfers (thus equilibrium payoffs).

In our first empirical exercise, we study the effect of power on the decision of a country (a proposer) to pledge/offer/promise to another country (a responder) to expand their cooperation in some specific domain (diplomatic, economic, or military). These variables, which we call *pledges*, are part of the GDELDT dataset, an *event dataset* with a global coverage, spanning from 1979 to 2012.⁸ We derive a prediction about each type of pledge (diplomatic, economic, or military) by interpreting them as complementary transfers that each responder receives. Formalizing the idea, we find that the number of pledges of any given type received over a year from a proposer is an increasing function of a responder’s PRI with respect to that proposer.

In our baseline specification, we include fixed effects that net out any time-invariant bilateral characteristic (e.g. distance, shared language, etc.) and any time-varying unilateral characteristic (e.g. GDP, population, etc.) of both the proposer and the responder. We find that the PRI is a significant determinant of pledges about military, economic and diplomatic cooperation (separately estimated): a standard deviation increase in PRI leads to a change that is 8% for pledges on diplomatic cooperation, 11% for military, and 12% for economic ones. In line with the theoretical predictions, we show that the estimated effect of the PRI is driven by changes in the power of third parties, and not only changes in the power share or power rank. Indeed, the coefficient of the PRI does not change when we flexibly control for the power share, the power rank, or we restrict attention to subsamples with no change in rank.

In a second empirical exercise, we show that the results replicate when we switch

⁷Note that EL leverage is related to the idea of trade dependence (Moyer et al., 2018). A country with more EL can impose costly demand shortages, or excesses in supply, by simply delaying or blocking trade flows. Note that this variable can be interpreted as a power share because the denominator includes the trade flows between the proposer and every responder.

⁸Event datasets are very popular in International Relations (Leetaru and Schrodtt, 2013). Observations within these datasets, the so-called events, are generated on the basis of news articles reporting the occurrence of a particular type of interaction. GDELDT uses news articles from multiple media agencies (see Leetaru and Schrodtt 2013 for details). To categorize the information, GDELDT employs the CAMEO taxonomy of international interactions (Gerner, Schrodtt and Ömür Yilmaz, 2009). The GDELDT dataset can be accessed from <https://www.gdeltdproject.org>

viewpoint and focus on the responders' decision to send *aid* to a proposer.⁹ The motivation behind this exercise is that the willingness of a responder to send aid to a proposer should be increasing in the value of the relation, i.e., on the equilibrium payoff that such proposer provides. Formalizing and testing this idea, we find that one standard deviation increase in PRI increases our measures of military aid by 10% and economic aid by 12%.

In our last empirical exercise, we replicate our analysis for trade relations (CEPII, 1949-2019).¹⁰ A standard mechanism for how power affects trade is that more powerful countries are able to obtain more favorable trade policies, thus less trade frictions.¹¹ We explore this idea using a gravity model specification from Anderson and van Wincoop (2003). Once again, we find that PRI is very predictive of both imports and exports: one standard deviation increase in PRI leads to an increase of 15% for exports and 18% for imports.

The rest of the paper is structured as follows. Section 2 presents an abstract setting that is the basis of our analysis. Section 3 specializes the model to international relations, providing interpretation, applications, and a discussion of historical examples. Section 4 presents our three main empirical exercises. Section 5 discusses the robustness of the results, showing robustness relative to alternative measures of power, outcome definition, specifications, and datasets.¹² Section 6 presents future research directions and concludes.

1.1 Contribution to the Literature

Our paper is not the first to propose the idea that rankings might be important in international relations (for reviews, cfr. Dafoe, Renshon and Huth, 2014; or MacDonald and Parent, 2021). Indeed, there is a growing literature focusing on status-consciousness

⁹Relying again on GDELT data, we measure *aid* from the decision of a country (a responder) to send to another country (a proposer) aid of some specific type (economic or military).

¹⁰Potential endogeneity of EL is addressed through a 2SLS estimation. Our source for trade data can be accessed through the following link <http://www.cepii.fr/CEPII/en/welcome.asp>

¹¹Also Berger et al. (2013) assumes that the effect of power acts through bilateral trade costs.

¹²The analysis is validated using an alternative Event dataset, WEIS, covering the 1966-1978 period. Unlike GDELT, the observations in this dataset are manually coded. The advantage is that it is less prone to errors, the disadvantage is that it does not have the same global breadth. We also study additional outcomes from GDELT, including state visits, signing of treaties, the expansion of cooperation in the economic, military and diplomatic domains, and an aggregate measure of the quality of international relations that is generated from the sum of all interactions weighted by Goldstein scores (which give more weight to more favorable events).

(Lake, 2011; Paul, Larson and Wohlforth, 2014; Organski and Kugler, 2015; Mattern and Zarakol, 2016; Renshon, 2017; Wolf, 2021; Powers and Renshon, 2021). Motivated by a large set of case studies, this literature departed from the standard assumption that countries want to maximize their share of world power (Mearsheimer, 2007), and focused instead on the idea that they care about their rank. The typical justification of this assumption is that it is an intrinsic characteristic of human preferences, something that has indeed been confirmed in multiple experiments (Renshon, 2017) and also recently received a decision-theoretic foundation (Maccheroni, Marinacci and Rustichini, 2012). A major shortcoming of this approach is that it is not obvious how this preference would translate into world politics and how much it should be expected to matter. This ambiguity has prevented the literature from developing a theory that can be built upon and empirically tested. What type of status matters (relative to what type of resources)? Relative to whom? Can status be transferred to another country? Do countries have the same status everywhere? Does status have the same value everywhere and at all times? All these questions are crucial to understand how status matters in world politics, and what consequences it might have. Our first contribution to this literature is to provide a simple and testable framework where each of these questions can be addressed: in our theory, status-consciousness is linked to material interests in a way that depends on local conditions (the local distribution of power).¹³ Our second contribution is to validate the theory empirically, showing that our theory of status is important to understand a wide array of modern international exchanges, and not only historical cases.

Our project is also closely related to the literature that studies the political economy of the international system, building on the seminal work of Hirschman (1980). The modern literature is mainly empirical, studying how exports and imports (Yeats, 1990; Berger et al., 2013; Fuchs and Klann, 2013; Mityakov, Tang and Tsui, 2013; Du et al., 2017; Didier and Koenig, 2019; Davis, Fuchs and Johnson, 2019), economic and financial aid (Kuziemko and Werker, 2006; Dreher and Jensen, 2007; Kilby, 2009; Faye and Niehaus, 2012; Rommel and Schaudt, 2020), loans (Li and Ngo, 2018; Garmaise and Natividad, 2013; Ambrocio and Hasan, 2021), and even the extent of media coverage of human rights' violations (Qian and Yanagizawa, 2009; Qian and Yanagizawa-Drott,

¹³Note that expressing status-consciousness in terms of material interests is crucial to understand how much countries should be expected to invest to advance or defend it, for instance with conflicts. Indeed, this is an important step as the idea of status-consciousness is typically applied to study conflicts (Dafoe, Renshon and Huth, 2014).

2017) are all linked to political considerations and power. The main theoretical paper in this literature is Antràs and Padró i Miquel (2011), studying the welfare effects of the action of one foreign power who constrains the policies of a local ruler. Our contribution to this literature is to show how standard intuitions might change when we study a country’s foreign interests, its foreign policy, and the effects of its power in an environment with geopolitical competition, i.e., where there are multiple countries capable of exerting pressure on the same ones. Specifically, we show that when geopolitical competition is important, then the effects of a country’s own power become highly non-linear and even non-monotone.¹⁴ But also, our model provides a simple (and empirically relevant) way to account for these complex dynamics without sacrificing the value of postulating a simple relation between power and outcomes, as we show that the role of geopolitical competition can be summarized by a simple one-dimensional function of the power distribution (the Power Rank Index).

Our paper also speaks to the empirical literature that focuses on trade flows, especially the literature that employs gravity models (for reviews, cfr. Anderson 2011 or Bergstrand and Egger 2013; for recent work, see Arkolakis, Costinot and Rodríguez-Clare 2012, and Anderson and Yotov 2020). These models decompose bilateral flows as only a function of the characteristics of the two countries involved, and two multilateral resistance terms, which summarize the frictions originating from the existence of other countries. Crucially, Anderson and van Wincoop (2003) shows that these multilateral resistance terms can be decomposed into an inward and outward component, where these components are specific to a particular country, not to a particular bilateral relation. This finding allows to reduce the dimensionality of the problem considerably: for instance, it is possible to account for the effect of third parties by simply including country fixed effects (one for each side of the bilateral relation), or with a normalization (Anderson, 2011). Our model shows that once we introduce power into a gravity model of trade, each bilateral trade flow is again a function of the characteristics of third parties. While country fixed effects or normalizations cannot account for this dependence, we show that this can be done by adding the Power Rank Index to the standard estimating equation. Moreover, we show that this variable is an important determinant of international exchanges, including exports and imports, and its inclusion has an important effect on the estimation of the other coefficients of interest.

¹⁴Note that these non-linearities in the effect of power would also translate into non-linearities in the incentive to invest in power.

Finally, our theoretical model is related to a growing literature exploring mechanism/contract design in environments with strategic complementarities or, more generally, externalities (Segal, 1999, 2003; Winter, 2004; Genicot and Ray, 2006). Just as in our model, this literature studies models and solution concepts where ranking mechanisms emerge.¹⁵ In our setting, a ranking mechanism arise from robustness concerns, it interacts with the players' heterogeneity (power), and it crucially affects the interdependence among players. Our paper is the first to empirically test the predictions of this type of analysis, lending an empirical justification to this theoretical approach.

References

- Allison, Graham.** 2017. *Destined for war. Can America and China escape Thucydides's trap?* Houghton Mifflin Co.
- Ambrocio, Gene, and Iftekhar Hasan.** 2021. "Quid pro quo? Political ties and sovereign borrowing." *Journal of International Economics*, 133: 103523.
- Anderson, James E.** 2011. "The gravity model." *Annual Review of Economics*, 3(1): 133–160.
- Anderson, James E, and Eric van Wincoop.** 2003. "Gravity with gravitas: A solution to the border puzzle." *American economic review*, 93(1): 170–192.
- Anderson, James E, and Yoto V Yotov.** 2020. "Short run gravity." *Journal of International Economics*, 126: 103341.
- Antràs, Pol, and Gerard Padró i Miquel.** 2011. "Foreign influence and welfare." *Journal of International Economics*, 84(2): 135–148.
- Arkolakis, Costas, Arnaud Costinot, and Andrés Rodríguez-Clare.** 2012. "New Trade Models, Same Old Gains?" *American Economic Review*, 102(1): 94–130.
- Berger, Daniel, William Easterly, Nathan Nunn, and Shanker Satyanath.** 2013. "Commercial imperialism? Political influence and trade during the Cold War." *American Economic Review*, 103(2): 863–96.
- Bergstrand, Jeffrey H, and Peter Egger.** 2013. "Gravity equations and economic frictions in the world economy." In *Palgrave handbook of international trade*. 532–570. Springer.

¹⁵A growing literature is applying these type of mechanisms to moral hazard problems in the context of workers organized in teams (Bernstein and Winter, 2012; Halac, Lipnowski and Rappoport, 2021; Halac, Kremer and Winter, 2021)

- Bernstein, Shai, and Eyal Winter.** 2012. “Contracting with heterogeneous externalities.” *American Economic Journal: Microeconomics*, 4(2): 50–76.
- Binmore, Ken, Martin J. Osborne, and Ariel Rubinstein.** 1992. “Chapter 7 Noncooperative models of bargaining.” In . Vol. 1 of *Handbook of Game Theory with Economic Applications*, 179–225. Elsevier.
- Dafoe, Allan, Jonathan Renshon, and Paul Huth.** 2014. “Reputation and status as motives for war.” *Annual Review of Political Science*, 17: 371–393.
- Davis, Christina L, Andreas Fuchs, and Kristina Johnson.** 2019. “State control and the effects of foreign relations on bilateral trade.” *Journal of Conflict Resolution*, 63(2): 405–438.
- Didier, Laurent, and Pamina Koenig.** 2019. “Has China replaced colonial trade?” *Review of World Economics*, 155(2): 199–226.
- Dreher, Axel, and Nathan M Jensen.** 2007. “Independent actor or agent? An empirical analysis of the impact of US interests on International Monetary Fund conditions.” *The Journal of Law and Economics*, 50(1): 105–124.
- Du, Yingxin, Jiandong Ju, Carlos D Ramirez, and Xi Yao.** 2017. “Bilateral trade and shocks in political relations: Evidence from China and some of its major trading partners, 1990–2013.” *Journal of International Economics*, 108: 211–225.
- Faye, Michael, and Paul Niehaus.** 2012. “Political aid cycles.” *American Economic Review*, 102(7): 3516–30.
- Fuchs, Andreas, and Nils-Hendrik Klann.** 2013. “Paying a visit: The Dalai Lama effect on international trade.” *Journal of International Economics*, 91(1): 164–177.
- Garmaise, Mark J, and Gabriel Natividad.** 2013. “Cheap credit, lending operations, and international politics: The case of global microfinance.” *The journal of finance*, 68(4): 1551–1576.
- Genicot, Garance, and Debraj Ray.** 2006. “Contracts and externalities: How things fall apart.” *Journal of Economic Theory*, 131(1): 71–100.
- Gerner, Deborah J., Philip A. Schrodtt, and Ömüür Yilmaz.** 2009. “Conflict and Mediation Event Observations (CAMEO) Codebook.”
- Halac, Marina, Elliot Lipnowski, and Daniel Rappoport.** 2021. “Rank uncertainty in organizations.” *American Economic Review*, 111(3): 757–86.
- Halac, Marina, Ilan Kremer, and Eyal Winter.** 2021. “Monitoring Teams.”
- Hirschman, Albert O.** 1980. *National power and the structure of foreign trade*. Vol. 105, University of California Press.

- Inostroza, Nicolas, and Alessandro Pavan.** 2020. “Persuasion in Global Games with Application to Stress Testing.”
- Kilby, Christopher.** 2009. “The political economy of conditionality: An empirical analysis of World Bank loan disbursements.” *Journal of Development Economics*, 89(1): 51–61.
- Kuziemko, Ilyana, and Eric Werker.** 2006. “How much is a seat on the Security Council worth? Foreign aid and bribery at the United Nations.” *Journal of political economy*, 114(5): 905–930.
- Lake, David A.** 2011. *Hierarchy in international relations*. Cornell University Press.
- Leetaru, Kalev, and Philip A. Schrodt.** 2013. “GDELT: Global Data on Events, Location and Tone, 1979-2012.” *ISA Annual Convention*.
- Levitsky, Steven, and Kenneth Roberts.** 2011.
- Li, Kun, and Phong TH Ngo.** 2018. “Geopolitics and international bank flows.”
- Maccheroni, Fabio, Massimo Marinacci, and Aldo Rustichini.** 2012. “Social decision theory: Choosing within and between groups.” *Review of Economic Studies*, 79(4): 1591–1636.
- MacDonald, Paul K, and Joseph M Parent.** 2021. “The Status of Status in World Politics.” *World Politics*, 73(2): 358–391.
- Mattern, Janice Bially, and Ayşe Zarakol.** 2016. “Hierarchies in world politics.” *International Organization*, 70(3): 623–654.
- Mearsheimer, John J.** 2007. “Structural realism.” *International relations theories: Discipline and diversity*, 83: 77–94.
- Mityakov, Sergey, Heiwai Tang, and Kevin K Tsui.** 2013. “International politics and import diversification.” *The Journal of Law and Economics*, 56(4): 1091–1121.
- Moyer, Jonathan D., Tim Sweijs, Mathew J. Burrows, and Hugo Van Manen.** 2018. “Power and Influence in a Globalized World.” *The Atlantic Council*.
- Murray, Michelle.** 2018. *The struggle for recognition in international relations: status, revisionism, and rising powers*. Oxford University Press.
- Organski, Abramo FK, and Jacek Kugler.** 2015. *The war ledger*. University of Chicago Press.
- Paul, Thazha Varkey, Deborah Welch Larson, and William C Wohlforth.** 2014. *Status in world politics*. Cambridge University Press.
- Powers, Ryan, and Jonathan Renshon.** 2021. “International Status Concerns and Domestic Support for Political Leaders.”

- Qian, Nancy, and David Yanagizawa.** 2009. “The strategic determinants of US human rights reporting: Evidence from the cold war.” *Journal of the European Economic Association*, 7(2-3): 446–457.
- Qian, Nancy, and David Yanagizawa-Drott.** 2017. “Government distortion in independently owned media: Evidence from US news coverage of human rights.” *Journal of the European Economic Association*, 15(2): 463–499.
- Renshon, Jonathan.** 2017. *Fighting for status*. Princeton University Press.
- Rommel, Tobias, and Paul Schaudt.** 2020. “First impressions: How leader changes affect bilateral aid.” *Journal of Public Economics*, 185: 104107.
- Segal, Ilya.** 1999. “Contracting with externalities.” *The Quarterly Journal of Economics*, 114(2): 337–388.
- Segal, Ilya.** 2003. “Coordination and discrimination in contracting with externalities: Divide and conquer?” *Journal of Economic Theory*, 113(2): 147–181.
- Shifrinson, Joshua R. Itzkowitz.** 2020. “Eastbound and down: The United States, NATO enlargement, and suppressing the Soviet and Western European alternatives, 1990-1992.” *Journal of Strategic Studies*, 43(6-7): 816–846.
- Webb, Michael C., and Stephen D. Krasner.** 1989. “Hegemonic stability theory: an empirical assessment.” *Review of International Studies*, 15(2): 183–198.
- Winter, Eyal.** 2004. “Incentives and discrimination.” *American Economic Review*, 94(3): 764–773.
- Wolf, Reinhard.** 2021. “Between Deference and Defiance: Hierarchical Status Roles and International Conflict.” *International Studies Quarterly*.
- Yeats, Alexander J.** 1990. “Do African countries pay more for imports? Yes.” *The World Bank Economic Review*, 4(1): 1–20.