

Oligarchic Networks of Influence and Legislatures in Developing Democracies: Evidence from Ukraine*

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Abstract: State capture by extremely wealthy elites is a widespread phenomenon in developing democracies, yet the mechanisms through which it works and the impact it has on political and policy outcomes remain poorly understood. I develop a network-based approach to studying captured institutions. Focusing on the national legislature and using social network and regression analyses of unique quantitative data and original interview-based evidence on the case of Ukraine (2014-2022), I demonstrate that oligarchs seek to defend their wealth by promoting as members of parliament individuals who are linked to them via interpersonal ties. The connections between oligarchs and legislators take the form of a highly fragmented, weakly connected, and decentralized network with distinct clusters, in which oligarchs occupy central positions, and influence the adoption of policies related to oligarchs' economic interests. The study has important implications for the scholarship on money in politics, oligarchy, state capture, political connections, neopatrimonialism, legislative politics, political parties, and political representation.

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1 Introduction

All around the world extremely rich businesspeople seek to shape politics to their own interests. As a major decision-making arena, the national legislature is an important target institution for oligarchic influence. Some oligarchs become involved in parliamentary politics directly. Holding public office, however, carries a high risk for the super wealthy as it often requires them to formally give up their businesses, increases their public visibility, and reveals their political affiliation. As a result, many oligarchs tend to engage more heavily in indirect forms of political participation, such as financing political parties, providing media coverage to political candidates, mobilizing voters, lobbying politicians, and engaging in various forms of corruption. Such strategies, however, involve a commitment problem on the part of political parties and politicians—oligarchs have no guarantee that the political parties and politicians they sponsor will keep their promises to deliver policy favors once they get into office or once they have to propose or vote on a given bill. In environments where political competition is high and the rule of law is weak, direct and traditional indirect strategies of political participation may have considerable negative consequences on oligarchic wealth.

How do oligarchs foster favorable policy outcomes in such contexts, and what are the broader political and policy implications of their involvement in the political process? I argue that, to successfully defend their wealth in such contexts, oligarchs promote to the position of legislators their own loyal clients, that is trustworthy individuals who are personally related to their patrons, deeply invested in the relationships with them, and unlikely to cheat. These loyalists provide oligarchs with consistent representation in the legislature and work towards the adoption of legislation that is as favorable to their patrons' economic interests as possible.

I leverage the strengths of a mixed-methods research design and test this theory on Ukraine, an excellent case of a developing democracy with competitive elections and weak rule of law. I develop a network-based empirical strategy of identifying oligarchs' loyalists and apply it to Ukraine's two most recent parliamentary convocations (2014-2019 and

2019-2022).¹ Specifically, I construct the network of connections between oligarchs and members of parliament (MPs) for each convocation based on common affiliation with businesses, non-profit organizations, and political party offices, and familial ties. Such connections are associated with high levels of trust and dependence and can be considered primary channels of influence, information, and peer pressure. I then analyze the structural properties of the networks, using social network analysis tools, and consider the effects of belonging to the networks on the adoption of legislation affecting oligarchs' economic interests. I also use qualitative evidence from original interviews that I conducted with members of parliament, public officials, journalists, local experts, and civil society activists in Kyiv between September 2021 and February 2022 to both assess the reliability and validity of my measurement strategy and gain additional insight into the nature of the networks.

I discover that more than 20% of the legislators in each convocation under investigation are either directly or indirectly connected to oligarchs or are oligarchs themselves. In line with my theoretical expectations, I find that these interpersonal connections take the form of a highly fragmented, weakly connected, and decentralized network with distinct clusters, in which oligarchs occupy central positions. This type of network topography is typical of covert networks, such as mafia and criminal networks, and demonstrates that oligarchs are in a state of competition with one another and in control of the flow of influence and information throughout the network. Moreover, I show that the oligarchic network structures in the two parliamentary convocations are remarkably similar on a number of network statistics even though the composition of the two legislatures is very different—about 77% of the legislators elected in 2019 had never before held seats in the national legislature. Oligarchic networks themselves experienced a considerable degree of renewal, with 58% of loyalists in the 2019 convocation being first-time MPs. This finding shows that oligarchic networks are highly adaptable and persistent structures.

Further in line with my theoretical expectations, I demonstrate that the uncovered

¹I limit my analysis to the beginning of Russia's full-scale invasion of Ukraine on 24 February 2022.

oligarchic networks of influence affect the adoption of reforms that are related to oligarchs' economic interests. Using regression analyses, in which I control for several predictors of vote choice, I show that being an oligarch deputy and being an oligarch loyalist in parliament are each statistically less likely to vote in favor of bills that strengthen anti-corruption measures, enhance transparency in public procurement, and promote market competition, and more likely to vote in favor of bills that reverse reforms in these policy areas. That is the case for each of the parliamentary convocations under investigation.

The paper contributes to existing scholarship in several key ways. Theoretically, it identifies a strategy of oligarch political involvement that has been overlooked by students of money in politics. It adds to research on political connections ([Fisman 2001](#); [Faccio 2006](#); [Bussolo et al. 2018](#)) and research on oligarchs and crony capitalism in the former Soviet space ([Guriev and Rachinsky 2005](#); [Gorodnichenko and Grygorenko 2008](#); [Earle and Gehlbach 2015](#); [Earle et al. 2022](#); [Treisman 2016](#); [Markus and Charnysh 2017](#); [Lamberova and Sonin 2018](#); [Balabushko et al. 2018](#); [Dalton 2023](#)). In contrast to much of this literature, which centers on individual wealth and firm performance as outcomes, this study shifts the focus to policymaking as the primary dependent variable.

Empirically, the paper presents unique large-scale systematic evidence in support of patronal and neopatrimonial theories ([Hale 2014](#); [Erdmann and Engel 2007](#)), whose utility for understanding politics has recently come under criticism, especially in the African context ([Mkandawire 2015](#)). It further seeks to answer the call in the literature for focusing scholarly efforts on identifying mechanisms of state capture and providing solid empirical support that can help us better understand how state capture works ([Carpenter and Moss 2013](#); [Dávid-Barrett 2023](#)). Methodologically, the study adopts a network approach to mapping out and analyzing the effects of political connections, thus accounting for dependencies that regular measurement strategies and statistical techniques typically used to study these phenomena fail to do. While used to study national legislatures, the measurement strategy developed

here is not institution-specific—it can be applied to uncover oligarchic networks of influence in state institutions beyond just legislatures.

The present research has implications for theories of why businesspeople choose to run for public office. While there are studies that consider the effects of a businessperson holding public office on firm productivity, individual wealth and policymaking ([Eggers and Hainmueller 2009](#); [Truex 2014](#); [Szakonyi 2018](#); [2020](#)),² very few of them differentiate between the extremely rich and regular businesspeople in office³ and even fewer take into account the linkages between businesspeople in office and oligarchs who remain outside of formal political institutions. My approach suggests that the treatment of businesspeople in office who have connections to oligarchs as independent actors or as actors who are similar to businesspeople in office without such connections may be problematic. For instance, the voting behavior on anti-corruption policy issues of a regular businessperson in office and a businessperson who is the loyalist of an oligarch may be very different. My study also suggests that by not taking into account connections between oligarchs who remain outside of formal politics and individuals who hold formal government positions, students of political connections considerably undercount politically connected firms.

This work also has implications for the scholarship on legislatures, inequality, and representation. By identifying oligarchs’ promotion of loyalists to the national legislature as a distinct mechanism of state capture, the study adds to debates on the factors contributing to the persistent disconnect between widespread public demand for redistribution and the limited redistributive scope of enacted policies—a gap that plays a critical role in reinforcing and deepening wealth and income inequality ([Chancel et al. 2022](#)). Moreover, by demonstrating that the extremely rich have permanent representatives in the legislature, the study suggests that the former may not only be influencing policies that advance their narrow economic interests at the expense of the public interest, but may also be influencing

²For a comprehensive literature review, see [Szakonyi \(2020\)](#).

³[Markus and Charnysh \(2017\)](#) is an important exception.

agenda setting and public policymaking more broadly.⁴ Even if the extremely rich do not particularly care about how their representatives in parliament legislate on issues not directly affecting their economic interests, the type of individuals they promote to the position of MPs could still systematically affect the types of policies the polity gets. This speaks to the scholarship on descriptive representation of social groups in elected political institutions that has experienced a renewed surge of interest in recent in years (Dal Bó et al. 2017; Carnes and Lupu 2023). The study also relates to the literature on the nature of political parties in developing democracies (Grzymala-Busse 2007; Yadav 2011).

The paper proceeds as follows. I first review existing research on oligarchs and politics and the broader literature on corporate political activity. I then develop a theory of clientelistic dependence of politicians on oligarchs and consider some of its observable implications for parliamentary make-up and policymaking. The rest of the paper presents my research design, findings, and conclusion.

2 Oligarchs and Politics

Oligarchs are “actors who command and control massive concentrations of material resources” and who engage in political activity “to defend or enhance their personal wealth and exclusive social position” (Winters 2011; p. 6). There are different theories about why businesspeople more generally and oligarchs specifically might want to run for office. One possible explanation is that holding public office provides ample opportunities for amassing private gains at the expense of the public good, especially under the conditions of weak democratic institutions (Gehlbach et al. 2010). Other theories point to property defense in the absence of a reliable external enforcer (Winters 2011) and the lack of credible commitment by the state (Junisbai 2012 in Markus and Charnysh 2017). Businesspeople are also likely

⁴As opposed to other indirect strategies of political involvement, such as political party financing, illicit private payments to politicians, and lobbying, which are often utilized on an issue- or case-by-case basis, having loyalists as oligarchs’ permanent representatives in parliament means that oligarchs may influence legislative politics and policymaking on a long-term and cross-issue basis.

to opt for strategies of direct participation during times of significant political and economic transformation when new rules of the game are being devised ([Hellman 1998](#)). Empirically, there is evidence suggesting that businesspeople increase their returns from holding public office in both democratic and autocratic settings ([Eggers and Hainmueller 2009](#); [Truex 2014](#); [Szakonyi 2018](#)).

However, there are reasons to believe that direct participation in politics can be harmful to businesspeople. First, due to formal rules, businesspeople might have to give up the ownership of their businesses once they assume public office ([Pleines 2012](#)). Transferring ownership over to someone else, regardless of how loyal or trustworthy that individual might be, may involve intolerable levels of risk. Second, by assuming public office, businesspeople increase their visibility and their actions become more likely to be scrutinized by the public. Businesspeople can also be seen as disregarding their duties as people's representatives as they are often absent from parliament except when they propose or vote on legislation in favor of their businesses ([Kamenev 2013](#)). Lastly, holding public office might put businesspeople in a disadvantageous position once a rival businessperson unexpectedly rises to power as a result of winning competitive elections by publicly showing their political affiliation ([Markus and Charnysh 2017](#)).

Some of these considerations are particularly relevant for the extremely rich whose public profiles are significantly higher than those of regular businesspeople and whose vast fortunes are seen as a sizable threat by rival political and business opponents. As the costs of holding public office outweigh its benefits, oligarchs begin to rely more heavily on indirect strategies of political participation. Empirical evidence suggests that indirect participation in politics is, in fact, more profitable for oligarchs than direct political involvement ([Markus and Charnysh 2017](#)).

There is a growing body of research on corporate political activity focusing on indirect strategies and spanning several disciplines, including political science, economics, finance,

management, and sociology (Hillman et al. 2004; Lawton et al. 2013). While much of this work has examined the indirect connections between business and politics in developed democracies (McMenamin 2012; Powell and Grimmer 2016; Hertel-Fernandez 2019), notable progress has also been made in understanding these dynamics in developing democracies across Central and Eastern Europe, Latin America, and Asia (Schoenman 2014; Yadav 2011), as well as in authoritarian regimes (Wang 2016; 2017).⁵ In the context of Ukraine, political connections have been found to increase oligarchic firm productivity (Earle and Gehlbach 2015), while media ownership and financial support for political parties have been shown to increase the level of oligarchic wealth or help keep it stable (Markus and Charnysh 2017). Recent public policy research (Balabushko et al. 2018) has also demonstrated that politically connected firms enjoy preferential treatment and limit market competition in comparison to firms with no political connections.

Some of these studies either fail to consider or greatly understate the credible commitment problem of politicians. Markus and Charnysh (2017), for example, identify the logic of flexibility as the mechanism that explains the positive relationship between political party financing and oligarch fortunes. The mechanism sees oligarchs as “powerful by virtue of their own wealth” and excludes the possibility of politicians cheating on their sponsors—they are considered completely dependent on oligarchs’ financial resources (Markus and Charnysh 2017; p. 1660). This mechanism, however, should not be expected to work as smoothly under the conditions of a competitive political marketplace, which are present in many developing democracies.

3 Theory

The relationship between oligarchs and politicians can be characterized as a relationship between patrons and clients. Oligarchs are indispensable for politicians in the context of

⁵Few studies examine the effects of political connections on company value and firm performance cross-nationally, e.g. Faccio (2006).

competitive elections and expensive election campaigns. They fund political candidates and parties (Bonica et al. 2013; Markus and Charnysh 2017; Meleshevych 2016), provide critically important media coverage (Winters 2013; Tapsell 2017; Markus and Charnysh 2017; Pleines 2019; Grossman et al. 2022), and mobilize voters by coercing their workers into voting (Baland and Robinson 2008; Ziblatt 2009; Frye et al. 2014; Hertel-Fernandez 2018) or by engaging in vote-buying and other illicit activities (Herron and Sjoberg 2016).⁶ In exchange for their costly investments, oligarchs expect politicians to return the favor after they get into office. Here, however, oligarchs face a situation of high uncertainty that emanates from the non-simultaneous nature of the clientelistic exchange (Lauth 2004 in Muno 2010; Hicken 2011) and takes the form of a commitment problem—helping a political party win elections provides no guarantee that elected politicians will deliver on the promises they made prior to assuming office.

There are different ways in which the credible commitment problem of politicians can be addressed. Oligarchs can largely resolve the problem by becoming members of parliament themselves. However, as already discussed, direct participation in politics may be undesirable. Repeated interactions can make behavior more predictable and allow the actors involved in the clientelistic exchange to reach “a self-enforcing group equilibrium” (Kitschelt and Wilkinson 2007; Hicken 2011). In other words, repeated successful exchanges make a clientelistic relationship sustainable over time. Assuming that politicians seek reelection, one can expect them to honor their commitments to oligarchs who helped them get elected in the first place because there is a high chance they will need to rely on the same oligarchs for financial support in future elections. Whether a clientelistic relationship becomes sustained over time or not, however, will depend on the availability of exit options to clients (Kitschelt and Wilkinson 2007; Hirschman 1970). The more exit options available, the greater the

⁶In addition to money and votes, big business provides politicians with information (Hillman and Hitt 1999). This type of good, however, becomes more relevant for the exchange after politicians get into office. For example, resource-poor legislators often have to rely on research conducted or commissioned by big business to develop policy legislation. This is the case even in advanced democracies, such as the U.S. (Hertel-Fernandez 2019).

likelihood that a client will renege on their informal contract with a patron.⁷

The probability of politicians' non-compliance should be expected to increase as the size of the political marketplace grows. This is not to say that clients can easily overcome the power asymmetry that favors their patrons. However, as competition increases, clients acquire access to more exit options and gain more bargaining leverage (Muno 2010; Hirschman 1970). The availability of a large number of oligarchs willing to help politicians win elections has two major corollaries. First, it makes it easier for politicians to switch allegiance from one sponsor to another who can better meet their needs. In highly competitive environments, oligarchs should be particularly likely to actively try to dispossess each other's clients. Second, the large number of oligarchs who provide electoral support to political parties makes it likely that elected politicians will have to cater to the interests of several patrons at the same time. This, in turn, makes it harder for politicians to provide consistent support to individual oligarchs.

A more reliable way in which an oligarch can alleviate the credible commitment problem of politicians, without running for office themselves, is by ensuring the presence of their own loyal clients in parliament. Loyalists are individuals who are more likely to consistently represent the oligarch's interests and less likely to cheat as they identify their interests with those of their patron or are invested in the relationship with the patron. The social ties that provide an oligarch with the highest guarantee of meaningful influence in parliament are those based on trust and dependence. For example, loyalists could be relatives, friends, managers, or long-time business partners.

An oligarch's loyalists in parliament can be considered as part or a subset of their core patronal network where linkages are personal and dependencies are stronger as opposed to linkages based on simple money transfers. As extremely rich individuals in patronal

⁷While politicians seeking reelection is a widely accepted assumption in political science, politicians may be driven by other incentives, e.g. increasing their income or wealth while in office (Rose-Ackerman 1978). In that case, they should be expected to look out for their own interests first and sell their votes to the highest bidder, neither of which may be desirable for oligarchs in the context of a competitive political market.

societies,⁸ oligarchs head complex informal networks of social relationships that span across different social spheres and levels, for example, the market, the state, media, and civil society at the local, regional, and national levels. These networks have been argued to take the form of hierarchical pyramids, with vertical links between patrons in higher, more powerful positions and clients in subordinate positions, and some horizontal links between equals (Hale 2014).⁹ Scholars studying informal elite networks in Eastern Europe and Eurasia in the anthropological and sociological traditions offer a different, though not necessarily contradictory perspective. They consider oligarchic networks as a whole¹⁰ to exhibit the characteristics of cliques and multiplex networks, that is highly dense networks in which each clique member is independently connected to many other clique members with multiple types of links serving different kinds of functions (Wedel 2003). Given the financial aims of the strategy of placing loyalists in parliament and prioritizing the speed of communication, oligarchs should be expected to send loyalists who are as closely linked to them as possible, with direct connections being the norm.

Oligarchs are considered to be actors who pursue individual, rather than collective strategies of political involvement (Winters and Page 2009). On the one hand, the common material interests of the extremely rich are sufficient to prompt them to act in unison when needed, so they do not have to rely on networks among themselves as an organizational and mobilizational resource. On the other hand, oligarchs are often in a state of competition with one another (North et al. 2009; Winters 2011), which makes pursuing individual strategies the norm. The literature on the political economy of post-communist and post-Soviet countries, specifically, consistently refers to the relentless competition among oligarchic groups

⁸Patronal societies are characterized by political and economic activity organized around “the personalized exchange of concrete rewards and punishments” rather than impersonal relationships based on abstract principles like ideology and “imagined communities” (Hale 2014; pp. 20-21). Many contemporary authoritarian regimes and developing democracies, including politics in Eurasia, Africa, Southeast Asia, and Latin America, have such patronal societies (Hale 2014).

⁹See also Magyar (2016); Magyar and Madlovics (2020).

¹⁰Also referred to as “oligarchic groups”, “clans”, “financial-industrial groups”, “political-economic networks”.

(Kryshtanovskaya and White 1996; Graham 1999; Way 2005; Sharafutdinova 2010), largely competition over the favor of the head of the executive, access to rents and privatization deals, but also within- and between-sector competition. Nevertheless, there are historical and modern cases of oligarchs forming relatively stable alliances and effectively merging their individual networks, which needs to be taken into account by any theory of oligarchic influence on politics.

In the ideal case, an oligarch or a small number of closely connected oligarchs should be expected to promote loyalists in parliament who have a direct personal connection to them and who may be connected to one another, but may not be connected to other oligarchs or their loyalists. They all should be expected to be weakly connected or completely disconnected from other groups of oligarchs and their loyalists. If weak connections exist, they should be expected to be between oligarchs, that is between two patrons, rather than between an oligarch and an MP or between two MPs.

While a small number of oligarchs may have a greater interest or greater capacity to place a higher number of loyalists in parliament than others—for example, their investment portfolios may feature a higher share of sectors prone to rent-seeking or they may have substantially more wealth (we know that the level of inequality within the ranks of the extremely rich is high)—the practice should be expected to be widespread and, consequently, the centralization of the network at the global level should be expected to be low.

Overall, the network of connections between oligarchs and MPs should be expected to display high levels of decentralization and moderate to high levels of clustering, with few links between clusters. This can be formalized in the following hypotheses:

Hypothesis 1a (Fragmentation and Connectivity): The network of connections between oligarchs and MPs will consist of a large number of connected components and display a low level of connectivity.

Hypothesis 1b (Centralization): The network of connections between oligarchs and MPs will

be highly decentralized.

Hypothesis 1c (Clustering): The network of connections between oligarchs and MPs will be moderately to highly clustered.

Powerful economic elites often seek to preserve their power by influencing the design of state rules and stifling competition (Rajan and Zingales 2003). In the context of post-communist transition economies, for example, the initial cohort of oligarchs have been argued to have emerged as the winners from the economic reforms initiated after the collapse of Communism. They did not only amass enormous wealth in a very short period of time, but also successfully managed to lock their countries in a “partial reform equilibrium” (Hellman 1998). They established monopolistic positions—at the level of the national, regional, or local economies—and sought to preserve these positions by limiting access to benefits obtained from the state to new market entrants (Guriev and Rachinsky 2005). Subsequent cohorts of extremely rich businesspeople, much like their counterparts elsewhere in the world, have also sought to influence the rules of the game and limit competition.

Oligarchs’ loyalists in parliament should therefore be expected to oppose reforms aimed at creating equal opportunities for market entry and access to state benefits for all economic actors. In a broader sense, using the conceptual framework of North et al. (2009), loyalists should be expected to oppose reforms that seek to help society transition from a limited access order, one where social organization is based on “individual interaction, particularly personal relationships among powerful individuals” and where access to organizations, both public and private, is limited (North et al. 2009; p. 3)—to its opposite, open access order.

Hypothesis 2: All else being equal, members of oligarchic networks in parliament will be more likely to vote against reform bills aimed at creating a level playing field for all market actors.

4 Research Design

To test the observable theoretical implications discussed above, I leverage the strengths of a mixed-methods research design. Specifically, I test my hypotheses using the case of Ukraine and the two most recent convocations of its national legislature—Verkhovna Rada 8 (2014-2019) and Verkhovna Rada 9 until the beginning of Russia’s full-scale invasion (2019-2022)—social network analysis, regression analysis, and 25 original interviews that I conducted with stakeholders in Kyiv in 2021-2022. This section discusses my empirical case, data, and methods.

4.1 Empirical Case

Studying the case of Ukraine is beneficial for two main reasons. First, Ukraine is an excellent case of a developing democracy—it has a competitive political environment and weak rule of law—with a prominent class of extremely rich businesspeople (oligarchs). Second, unlike many developing democracies around the world, the Ukrainian case provides researchers with unique access to high-quality open data sources, including highly professional journalistic investigations and detailed public databases maintained by the state or by civil society organizations, that allow to gain a deep, systematic, data-based understanding of what is by nature a hidden process of state capture.

In this section, I briefly examine the relationship between political parties and oligarchs in Ukraine, the likelihood of oligarchs’ employing loyalists in parliament since the country gained independence from the Soviet Union in 1991, and the political context surrounding the formation and operation of the 8th and 9th convocation of the Ukrainian Parliament.

4.1.1 Political Parties and Oligarchs

The evolution of political parties in post-independence Ukraine has been closely linked to the evolution of the country’s oligarchic system. [Markus and Charnysh \(2017\)](#) propose to

think about this co-evolution in three stages. During the first stage in the early 1990s, the wealth-maximization benefits of direct participation were far greater than the risks involved (Markus and Charnysh 2017). This was the time when the ground rules of the new capitalist market system were being crafted (Hellman 1998) and the likelihood of political actors cheating on the then oligarchs-in-the-making was high. Being a member of parliament also guaranteed immunity from prosecution, which was important for wealth-making at the time (Way 2005). That is why a large number of wealthy businesspeople entered parliament themselves.

The second stage began around 1998. Political party competition then was equivalent to clan competition, with each party corresponding to a specific regional clan¹¹ (Puglisi 2003; Whitmore 2002). This was a period when political intermediaries' cheating on oligarchs was not very likely (Markus and Charnysh 2017; p. 1656), arguably because a large number of those intermediaries were loyalists. Given that regional clans covered relatively large territories, it is reasonable to assume that they had divided structures and that individual oligarchs were still likely to push for their own loyal clients in the "collective" clan-party faction in parliament. Being a member of parliament themselves was still important for oligarchs.

The third stage began with the 2004 Orange Revolution. It has been marked by the gradual decline of direct participation of oligarchs in parliament. Likely as a result of the 2014 Euromaidan Revolution, which featured strong popular demands for de-oligarchization, the 2014 parliamentary election saw the lowest number of oligarch candidates in the post-independence history of Ukraine up until then (Pleines 2016; Markus and Charnysh 2017). In such highly unpredictable political context (two popular revolutions within a decade and frequent shifts between more and less democratic forms of government), oligarchs should be expected to engage in forms of indirect participation that provide the highest possible degree

¹¹Scholars use the term "clan" to refer to a political-economic organization based on informal, family-like relationships. On clan politics, see Collins (2004).

of certainty to successfully defend their wealth.

Simply sponsoring parties of politicians who are perceived as more or less independent by the public (Markus and Charnysh 2017; pp. 1656-1657) does not buy oligarchs enough certainty. Since the Orange Revolution, but especially since the Euromaidan Revolution, situations whereby several oligarchs with often competing interests finance a single political party and a single oligarch finances several political parties have become common. This new reality exacerbates the commitment problem of politicians as it opens up the political marketplace—all parties become potentially available for financing to all oligarchs. Not only do politicians acquire access to more exit options, but they also find themselves in a situation where they have to look out for their own self-interests and balance among the interests of multiple patrons. An oligarch who spends a lot of resources on expensive election campaigns cannot afford to tolerate such a situation of high uncertainty and is bound to seek ways to ameliorate it. Therefore, they should be expected to seek the promotion of loyalists in parliament.

4.1.2 National Legislature

Ukraine's national legislature is unicameral and consists of 450 members elected every five years. The elections for the two convocations under investigation were held according to a mixed electoral system—half of the deputies were elected according to a party list proportional representation system and half—through a first-past-the-post system.

The elections for the 8th Ukrainian Parliament were held in October 2014. Earlier that year, the country experienced a popular revolution that culminated in the ousting of the incumbent president and government in February 2014 and held early presidential elections in May. The Ukrainian state also lost territories to Russia, which illegally annexed Crimea in March 2014, and began fighting Russia-backed separatists in its two easternmost regions.¹² The presidential election was won by Petro Poroshenko, himself an oligarch. His

¹²The Ukrainian state fought Russia-backed separatists from 2014 until 2022 when Russia began its full-

political party, Bloc Petro Poroshenko, received plurality in parliament and formed a coalition government with four other political parties. Overall, the period of the 8th Ukrainian Parliament (2014-2019) was marked by two coalition governments, unstable parliamentary majorities, and often difficult lawmaking.

The elections for the 9th Ukrainian Parliament were held in July 2019, following a regular presidential election in May 2019, in which Volodymyr Zelensky defeated the incumbent president, Petro Poroshenko, in a landslide. Similarly, the presidential party, Servant of the People, comfortably won the parliamentary elections. For the first time in the country's history, a single party held majority in parliament and formed a government on its own. Largely due to the sweeping electoral success of President Zelensky and his political party, the 9th Ukrainian Parliament saw a massive turnover rate of 81% in comparison to the previous convocation. Importantly, 77% of the newly-elected MPs had never held seats in the national legislature. In comparison to the previous convocation, the parliamentary majority in the 9th Ukrainian Parliament remained largely stable, making lawmaking easier. The convocation continues to serve at the time of writing due to Russia's ongoing war of aggression and the constitutional and practical inability to hold regular elections in wartime.

4.2 Data and Methods

4.2.1 Network Measurement

My conceptualization of legislative state capture through oligarchs' loyalists is best operationalized and analyzed with the help of social network analysis. The network of interpersonal connections among oligarchs and MPs is, in essence, a covert network. Covert networks involve one or many elements of secrecy that participants deliberately try to keep hidden ([Oliver et al. 2014](#)), making their empirical study particularly challenging ([Campana](#)

scale invasion. The conflict was territorially contained, with varying levels of intensity over the years. During 2014-2022, martial law was never imposed nationwide, mobilization was partial and carried out in 2014-2016 only. In 2016, the country switched to contracted service rather than conscription.

2016; Diviák 2022). Two key issues are missing data and boundary specification. Missing data is especially problematic in network analysis—even more so than in other quantitative analysis methods—as omissions can significantly distort interpretation. This issue is amplified in covert networks, whose hidden nature increases the likelihood of missing data. Boundary specification concerns whether all relevant actors (nodes) and connections among them (edges) are included in the network. Excluding nodes or edges that should be in the network has the same effect as missing data, while including nodes or edges that should not be in the network fails to represent its real-life structure and can weaken or completely wash out observed effects.

To uncover the hidden network of interpersonal connections among oligarchs and MPs for each of the two convocations of the Ukrainian Parliament and study its structural properties, I employ a network-based measurement strategy. The measurement approach and the quality of the data allow to significantly limit concerns about missing data and boundary specification. In this network study, the nodes represent oligarchs and MPs and the edges between them indicate the existence of a personal connection.

Nodes:

I classify as an OLIGARCH any individual who belongs to the top 100 richest persons in Ukraine for any of the years 2012-2014, the time period preceding the parliamentary election of October 2014, according to the annual rankings of the Ukrainian journal *Fokus*.¹³ The rankings are compiled by experts and include estimates of each oligarch’s net worth, name of main asset, and main industries of operation. There are a total of 137 oligarchs. A MEMBER OF PARLIAMENT is any individual who has served as an MP in the 8th Ukrainian Parliament for any time period between 2014 and 2019 or in the 9th Ukrainian Parliament for any time period between 2019 and 2022. According to the Open Data Portal of the Verkhovna Rada, there are a total of 467 MPs in the 8th convocation and 444 MPs

¹³Here, I am largely following the classification strategy of Markus and Charnysh (2017).

in the 9th convocation. Sixteen of the legislators in the 8th convocation and ten in the 9th convocation are also oligarchs. I refer to them as OLIGARCH-MPs. The data on node attributes, such as method of election and political faction affiliation for MPs, are based on data from the Open Data Portal of the Verkhovna Rada.

Edges:

The function of the links between oligarchs and MPs is to transmit influence, information, or peer pressure. Relevant link types to consider empirically, therefore, may be social ties that are based on trust or dependence, such as friendship, kinship, shared affiliation with businesses, political party structures, and non-profits, shared university affiliation, and shared experience as colleagues in government offices. These different link types can be expected to overlap and facilitate the diffusion of influence, information, or peer pressure to different degrees. The literature on transition economies in Eastern Europe and the post-Soviet space suggests the importance of business connections for various political and economic outcomes, including the success and stagnation of reforms ([Hellman et al. 2000](#)), nature of state institutions ([Schoenman 2014](#)), and political survival ([Kostiuchenko and Melnykovska 2019](#)). Business relationships, together with family ties, are primary candidates for acting as strong transmitters of influence, information, or peer pressure as they are built upon some combination of trust, economic dependency, competence, and mutual business interests. Given that many Ukrainian oligarchs engage in philanthropy ([Söderbaum 2019](#)) and some of them have also had political careers, relationships through non-profits and political parties are also likely to act as transmitters.

Measuring interpersonal ties directly and at scale—for example, through a network survey—is impossible due to the sensitivity of the issue and the many challenges associated with conducting elite surveys ([Kertzer and Renshon 2022](#)) and surveys of the superrich ([Page et al. 2018](#)). I therefore measure ties indirectly, leveraging data from Ukraine’s Unified State Register of Legal Entities, Sole Traders and Public Organizations (USR), biographies and

personal profiles of oligarchs and MPs, journalistic investigations, and other open electronic sources. I assume that a personal connection between two individuals exists if they had been affiliated with the same entity—business company, non-profit organization, or political party organization—prior to the 2014 or 2019 parliamentary election or if they are relatives. I consider such links among all individuals of interest: oligarch—oligarch, oligarch—MP, oligarch—oligarch-MP, MP—MP, oligarch-MP—oligarch-MP. Table 1 provides a summary of the measured link types and main data sources.

A RELATIVE is defined as any immediate family member of an MP or an oligarch, namely a spouse, child, sibling or parent. A COMPANY could be any publicly or privately owned for-profit (business) organization registered in Ukraine. An NGO could be any non-profit organization registered in Ukraine, including charity funds, civic associations, etc. A POLITICAL PARTY ORGANIZATION could be any branch, office, or leadership of an officially registered political party in Ukraine. A detailed discussion of my data sources, data limitations, and data collection methods is provided in Appendix A.

4.2.2 Network Analysis

The outcome of interest in Hypotheses 1a-c is the structure of the network linking oligarchs and MPs, specifically, its fragmentation and connectivity, centralization (Freeman 1977), and clustering (Watts and Strogatz 1998). Network statistics that reflect these structural properties include the number of connected components, average shortest path length, and maximum shortest path length (fragmentation and connectivity), degree centralization and betweenness centralization (centralization), and average local clustering coefficient and global clustering coefficient (clustering).

To formally test Hypotheses 1a-c, I construct a null model using the sequential importance sampling algorithm developed by Blitzstein and Diaconis (2011). The Blitzstein–Diaconis algorithm is better suited for constructing a null model than other random graph sampling methods, for example, Erdős–Rényi ($G(n,m)$), Barabási–Albert (preferential attachment),

Link Type	Link Description	Link Weight	Data Source
Business	A link between two individuals exists if they share an affiliation with the same business company.	1 - shared affiliation lasted for at least a year prior to the respective parliamentary election; 0.5 - shared affiliation lasted less than a year prior to the respective parliamentary election	USR, investigative media, biographies and personal profiles
Non-profit (NGO)	A link between two individuals exists if they share an affiliation with the same non-governmental organization.	1 - shared affiliation lasted for at least a year prior to the respective parliamentary election; 0.5 - shared affiliation lasted less than a year prior to the respective parliamentary election	USR, investigative media, biographies and personal profiles
Political party organization	A link between two individuals exists if they share an affiliation with the same political party office.	1 - shared affiliation lasted for at least a year prior to the respective parliamentary election; 0.5 - shared affiliation lasted less than a year prior to the respective parliamentary election	USR, investigative media, biographies and personal profiles
Family	A link between two individuals exists if they are relatives.	1	Wikipedia, pep.ua.org, e-declarations, biographies and personal profiles
Other	Residual category: a link between two individuals exists if they are connected through a close personal tie, including through a third person who is not among the subjects of interest, through friendship, through common affiliation with a government office or university at the same time.	1 - direct connection that lasted at least a year prior to the respective parliamentary election; 0.5 - direct connection that lasted less than a year prior to the respective parliamentary election; 0.5 - indirect connection	Investigative media, biographies and personal profiles

Table 1: Link Operationalization and Data Sources

Watts–Strogatz (small-world) models or Exponential Random Graph Models, since it allows for statistical testing of global network features and keeps the degree sequence—a likely confounder of the network features of interest discussed above—constant. It is also statistically rigorous as it allows to sample graphs uniformly. Using the Blitzstein–Diaconis algorithm, for each of the two observed networks, I generate 1000 random graphs¹⁴ that preserve the observed network’s degree sequence.¹⁵ I then compare the observed network statistics to the distribution of the same statistics across the random graphs. This test checks whether the structural features of the observed network, specifically the statistics of interest, are unlikely to have arisen by chance, given the network degree sequence. On average, the observed network should display a higher number of connected components, higher average shortest path length, higher maximum shortest path length, lower betweenness centralization,¹⁶ higher average local clustering coefficient, and higher global clustering coefficient than the random networks.

To show the existence of individual oligarchic groupings or clusters, I rely on community detection. Community detection algorithms are a network analysis tool designed to uncover groups of densely connected nodes which are loosely connected to other groups of nodes in the same graph. There are several commonly used algorithms that utilize slightly different approaches to optimize network modularity. I opt for the Louvain community detection algorithm (Blondel et al. 2008) as it is appropriate for detecting communities in hierarchical undirected graphs like the networks of interest. While the use of community detection algorithms on small or disconnected graphs could be problematic, I account for this in my interpretation. To test whether oligarchs rather than MPs act as bridges between communities, I examine the edges connecting the identified communities for each of the networks.

¹⁴All graph simulations were performed on the University of Manchester’s Computational Shared Facility.

¹⁵The degree sequence is based on the simplified version of the observed network (see Appendix C).

¹⁶I cannot formally test degree centralization as it is a statistic that depends on the degree sequence. The latter is used as a constraint in the graph simulation process.

Finally, to assess the reliability and validity of my measurement strategy, verify overall connection patterns and key oligarchs and loyalists, and provide a richer description of the relationships between oligarchs and loyalists, I use qualitative data from original in-depth interviews that I conducted with members of parliament, public officials, local experts, journalists, and civil society representatives in Kyiv between September 2021 and February 2022. The majority of these interviews focused on dynamics in the 8th Ukrainian Parliament since I had collected the network data for that convocation only at the time. The data from the interviews are not used to modify the discovered networks in any way, that is to add new or remove existing nodes or edges. They serve solely to verify, assess, and enrich my interpretation of the overall connection patterns and the roles of key oligarchs and loyalists.

4.2.3 Voting Behavior Analysis

To test Hypothesis 2, I use data on roll-call votes and legislative bills from the Open Data Portal of the Ukrainian Parliament¹⁷ and Vox Ukraine. The Verkhovna Rada has four voting modalities: for, against, abstain, and did not vote. Ukrainian MPs tend to obscure their positions and almost never vote against. Since a majority of the total number of MPs (226) is need to vote in favor for a bill to pass, I code roll-call votes as missing if the MP was absent, 1 if the MP voted for, and 0 if the MP voted against, abstained, or did not vote. I focus on the voting events that correspond to the final reading of each bill, i.e. the events where the parliament makes a final decision to adopt or reject a given bill.

I further use a publicly available expert-coded reform database, Reform Index, developed and maintained by Vox Ukraine.¹⁸ The latter provides information on adopted legislative bills related to broad reform areas—governance, fiscal policy, monetary policy,

¹⁷I downloaded and cleaned the data for the 8th and 9th convocations myself. For the 8th convocation, I compared my data with the roll-call voting data collected independently and separately by two other researchers, who used different data collection methods. The three datasets had minor differences, which I cross-checked with other data sources and adjusted for manually in a way that makes my data as complete as possible.

¹⁸Reform Index, available at <https://reforms.voxukraine.org/about>.

business environment, energy policy, and human capital—which are further broken down into subcategories. Specifically, I consider the subset of bills associated with anti-corruption reform, public procurement reform, and competition policy. Reform efforts in these three areas aim to improve transparency and market competition, and ensure equal treatment of and access to public sector services and contracts for all market actors. To account for the fact that legislative bills can advance or reverse reform efforts at different rates, I include a reform score measure that indicates the direction and relative weight of a particular reform bill and corresponds to the expert score on a particular bill. The measure ranges from -5 (extremely harmful for reform trajectory) to 5 (extremely beneficial for reform trajectory).

For each convocation under investigation, I bring my network, voting, and legislative data into a unified dataset, where the unit of analysis is the deputy-vote, and estimate an OLS regression model with the following specification:

$$\begin{aligned}
 y_{ijt} \sim & \beta_0 + \beta_1 \cdot (\text{loyalist deputy}_i \times \text{reform score}_j) \\
 & + \beta_2 \cdot (\text{oligarch deputy}_i \times \text{reform score}_j) \\
 & + \boldsymbol{\gamma} \cdot \mathbf{u}_i + \boldsymbol{\delta} \cdot \mathbf{D}_t + \epsilon_{ijt}
 \end{aligned}$$

y_{ijt} is vote choice of deputy i during the vote on bill j in year t , measured by a binary indicator. My main independent variables of interest are the interaction terms between indicator variables for being an oligarch deputy and being an oligarch loyalist and the reform score of the bill that is being voted on. u_i is a vector of deputy-level control variables, including faction membership, election method, serving as MP in the previous parliament, and governing party affiliation.¹⁹ D_t is a vector of time fixed effects.

¹⁹Governing party affiliation is excluded from the regression model for the 9th Ukrainian Parliament due to collinearity with faction membership.

5 Results

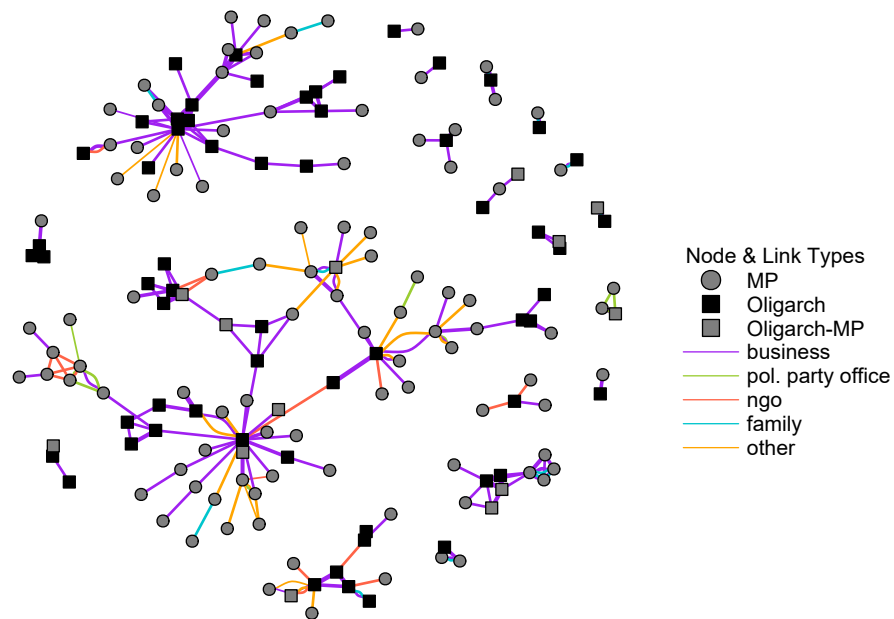
5.1 Oligarchic Networks: Structural Features

Figure 1 shows subgraphs of the overall networks of interpersonal connections among oligarchs and MPs for the 8th and 9th Ukrainian Parliament, respectively.²⁰ The graphs include only connected components featuring at least two different types of nodes, for instance, at least one MP and one oligarch or at least one oligarch and one oligarch-MP, and reveal striking structural similarities between the two convocations.

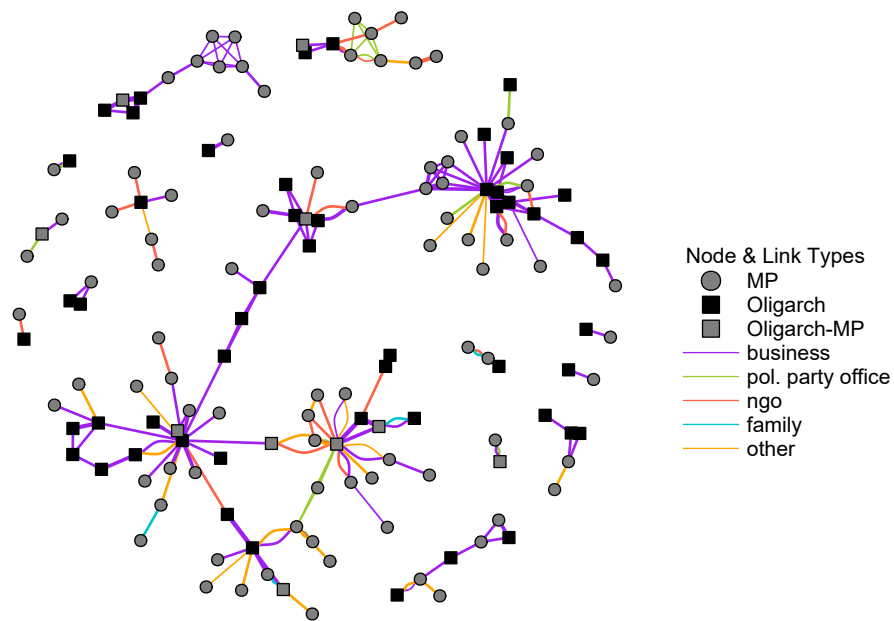
The network in the 8th Ukrainian Parliament includes 172 nodes and 235 multiple edges, while that in the 9th convocation is slightly smaller, consisting of 147 nodes and 203 multiple edges. Both networks are sparse, with densities 0.0137 and 0.0164, respectively. In both graphs, the majority of connections are based on shared affiliations with business companies, accounting for 66.8% and 63.5%, respectively. These are followed by connections through NGOs (10.6% and 13.8%) and other connections (10.6% and 11.8%). Family ties (7.7% and 2.5%) and links through political party organizations (4.3% and 8.4%) constitute the smallest proportions of connections.

As hypothesized in Hypothesis 1a, both graphs seem to exhibit high fragmentation and weak connectivity. Decomposing the networks into their constituent connected components reveals that each of them comprises many small components and a few larger ones. Specifically, the network in Verkhovna Rada 8 has 19 connected components, while the network in Verkhovna Rada 9 has 15. The average shortest path of a graph measures how close nodes are on average, with higher values suggesting weak graph connectivity. The maximum shortest path indicates the shortest distance between the two most distant nodes, where larger values also imply weaker connectivity. As shown in Table 2, the average unweighted shortest path lengths are 4.33 and 5.79, respectively—values that are low and consistent with small-world networks (Watts and Strogatz 1998), contradicting Hypothesis 1a. However, it

²⁰The overall networks are visualized in Appendix B.



(a) VR8 Network



(b) VR9 Network

Figure 1: Oligarchic Networks in VR8 and VR9

The graphs are undirected and contain multiple edges, weighted by the logged number of entities connecting two individuals. Strongly-connected nodes appear closer together, weakly-connected nodes appear further apart. The graphs were plotted using the Fruchterman-Reingold layout algorithm in igraph.

Statistic	Range	VR8 Network	VR9 Network
No. nodes	$[1, \infty)_{\mathbb{Z}}$	172	147
No. edges	$[0, \frac{n(n-1)}{2}]_{\mathbb{Z}}$	201	176
Density	$[0, 1]$	0.0137	0.0164
Avg. degree	$[0, n - 1]$	2.33	2.39
Max. degree	$[0, n - 1]_{\mathbb{Z}}$	18	18
<i>Fragmentation & Connectivity</i>			
No. of connected components	$[1, n]_{\mathbb{Z}}$	19	15
Avg. shortest path	$[1, \infty)$	4.33 (7.14)	5.79 (9.57)
Max. shortest path	$[1, \infty)_{\mathbb{Z}}$	11 (38)	15 (58)
<i>Centralization</i>			
Degree Centralization	$[0, 1]$	0.09	0.11
Betweenness Centralization	$[0, 1]$	0.12	0.23
<i>Clustering</i>			
Avg. local clustering coefficient	$[0, 1]$	0.27	0.28
Global clustering coefficient	$[0, 1]$	0.23	0.25

Table 2: Descriptive Statistics, VR8 and VR9 Networks

The table reports the values of key network statistics for the observed networks and gives the possible range of values each statistic could take. Ranges are based on a simple undirected unweighted graph G with n nodes. Ranges with subscript $\mathbb{Z}$ are restricted to integers. All statistics were calculated on the simplified unweighted versions of the networks shown in Figure 1. For the average and maximum shortest path statistics, values on the weighted version of the respective network are given in parentheses.

is important to note that path lengths are computed only within connected components. In highly fragmented graphs like the observed networks, this can produce deceptively low values. When edge weights are incorporated, the average shortest path lengths increase to 7.14 and 9.57, respectively, indicating that the weighted networks are less connected than they first appear. The same considerations apply to the maximum shortest path lengths. The network in Verkhovna Rada 9 exhibits weaker overall connectivity than its predecessor, as reflected in its longer average and maximum path lengths. This, however, is largely due to having fewer connected components. Because the number of connected components, average shortest path length, and maximum shortest path length are metrics either unbounded or bounded by the number of nodes, I rely on simulations to assess whether the observed values deviate significantly from those expected in random networks with the same degree sequence.

In line with Hypothesis 1b, both networks are also highly decentralized. Degree centralization and betweenness centralization are network-level metrics that capture how unequal the structure of a graph is in terms of node connectivity (degree centrality) or node control over information flow (betweenness centrality). Both centralization metrics range from 0 to 1, where 0 indicates a completely decentralized, flat network with no dominant node and 1 indicates a maximally centralized network with one dominant node. In the observed networks, these measures are much closer to 0 than to 1, suggesting a high level of decentralization (see Table 2). The network in the 9th Ukrainian Parliament exhibits higher betweenness centralization, 0.23, than the network in the previous convocation, 0.12. This is likely due to its slightly lower fragmentation and higher connectivity, and more specifically due to larger connected components being linked.

Hypothesis 1c expected the networks to display moderate to high degree of clustering. As visible in Figure 1, the two networks exhibit nodes grouping together, predominantly in star-like or hub-and-spoke structures, with fewer instances of clique-like formations. In a star topology, nodes within a neighborhood are connected to a central hub but not to each other, indicating a hierarchical structure characterized by centralized decision-making and control. In contrast, a clique is a tightly knit structure in which all nodes are interconnected, suggesting a more egalitarian organization marked by high cohesion and mutual trust. Nevertheless, some triangles are also visible. These visual patterns are supported by key network statistics. The average local clustering coefficient, which measures the likelihood that a node’s neighbors are also connected to each other, is 0.27 and 0.28 for the two networks. The global clustering coefficient, which captures the overall prevalence of closed triplets (triangles) in a network, is 0.23 and 0.25, respectively. The values on both metrics indicate a moderate presence of densely interconnected groups of nodes.

Figure 2 presents the results from formal tests of Hypotheses 1a-c for the network in the 8th Ukrainian Parliament, performed with the help of the sequential importance

sampling algorithm discussed in the Research Design section. Due to space limitations, the figure shows the results for four of the statistics related to fragmentation, connectivity, centralization, and clustering discussed above. The simulation results for the remaining statistics of interest are presented in Appendix D, along with results for the network in the 9th Ukrainian Parliament.

The hypotheses stated that the oligarchic network will display a high degree of fragmentation (Hypothesis 1a), low degree of connectivity (Hypothesis 1a), low degree of centralization (Hypothesis 1b), and moderate to high degree of clustering (Hypothesis 1c). As expected, compared to random graphs with the same degree sequence, the observed network's statistics for number of connected components (Figure 2 Panel a) and average local clustering coefficient (Figure 2 Panel d) are statistically significantly higher, and the observed value for the betweenness centrality statistic is statistically significantly lower (Figure 2 Panel c). The p-value from a one-sided empirical test for each of the statistics is lower than 0.01.

Contrary to the hypothesized low connectivity level, the observed average shortest path length is statistically significantly *lower* compared to the random graphs (Figure 2 Panel b). As mentioned earlier, this can be explained by the high fragmentation of the network, which drives the average shortest path length statistic down. The results from the same test on the less fragmented network in Verkhovna Rada 9 (Figure D6 Panel b in Appendix D) provide further support for this interpretation. In line with Hypothesis 1a, the results in Figure D6 show observed average shortest path length, maximum shortest path length, and number of connected components statistics that are all statistically significantly *higher* compared to random graphs with the same degree sequence ($p < 0.05$).

Overall, the descriptive and simulation-based discussion of the observed structural features of the networks so far provides support for Hypotheses 1a-c. To make better sense of the clustering and centralization patterns in the networks, I proceed with meso- and

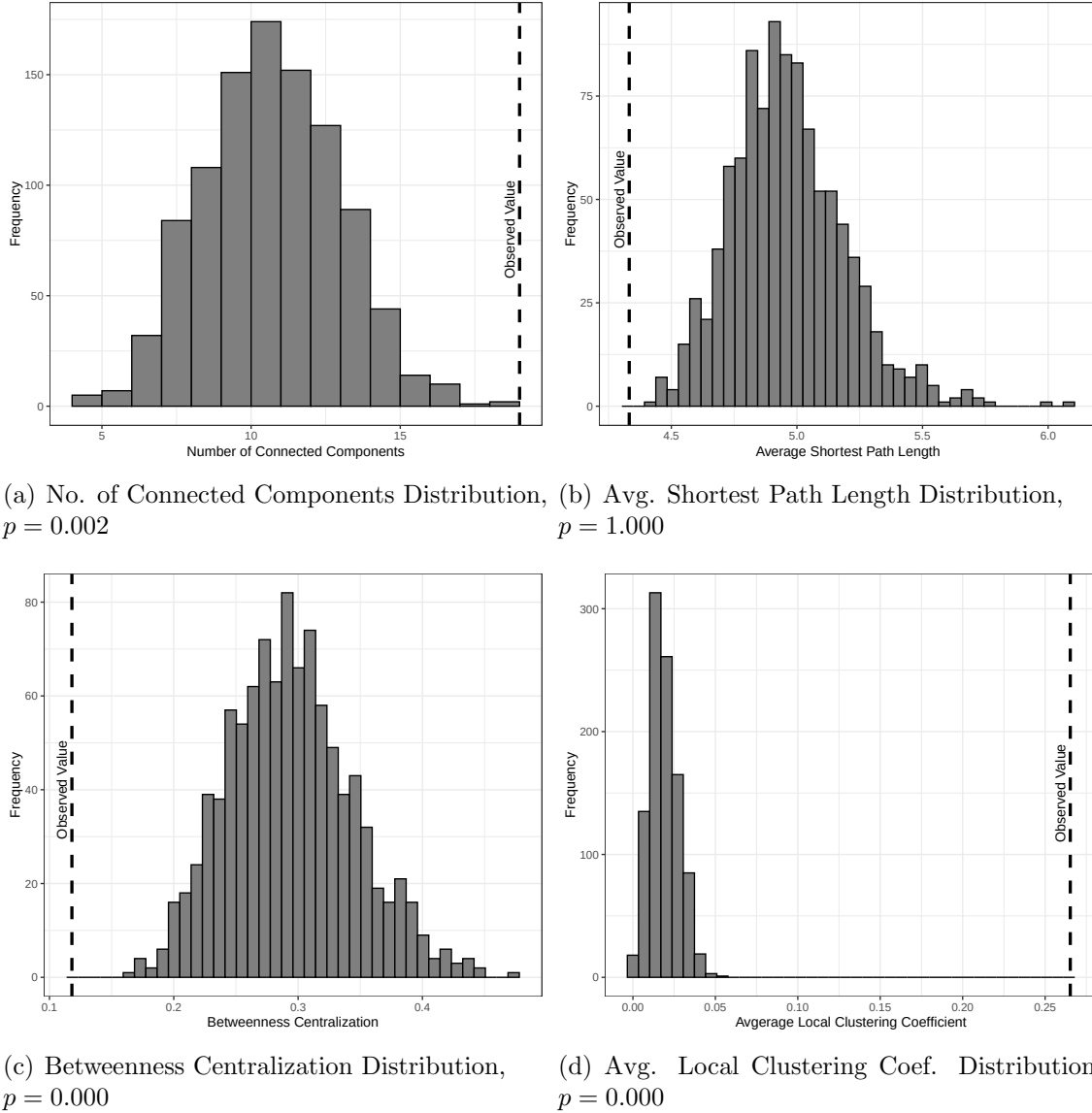


Figure 2: Simulation Results

The four panels plot the observed values of four VR8 network statistics—number of connected components, average shortest path length, betweenness centralization, and average local clustering coefficient—against the distributions of the same statistics derived from 1000 simulated random graphs that preserve the observed network’s degree sequence. The random graphs were generated using the Blitzstein–Diaconis sequential importance sampling algorithm.

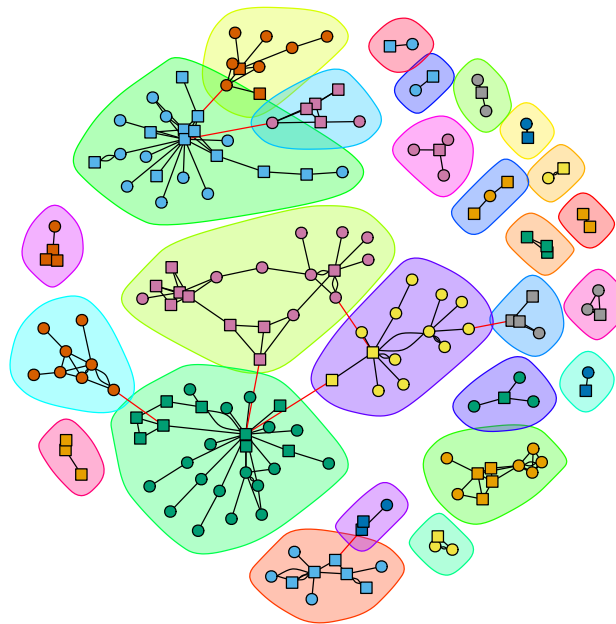
micro-level network analysis.

Figure 3 reports the results from the application of the Louvain community detection algorithm on the observed networks. As visible in the figure, oligarchs and MPs form distinct groupings or clusters of oligarchic influence.²¹ In these clusters, oligarchs typically take central positions and act as hubs, indicating oligarch control over the flow of influence and information. Both networks include a few bigger hubs, suggesting higher levels of local centralization. This is also reflected in the degree distributions (see Appendix C), which exhibit a power law shape, with many nodes of low degree and a small number of nodes of high degree. Moreover, as can be seen in Figure 4, it is largely the same oligarchs who occupy the most influential positions in the network over time. Regarding the connections between clusters, in the oligarchic network in Verkhovna Rada 8, out of eight edges linking clusters, three are between oligarchs and five are between an oligarch and an MP. For the network in Verkhovna Rada 9, out of nine edges linking clusters, six are between oligarchs, two between MPs, and one between an oligarch and an MP.

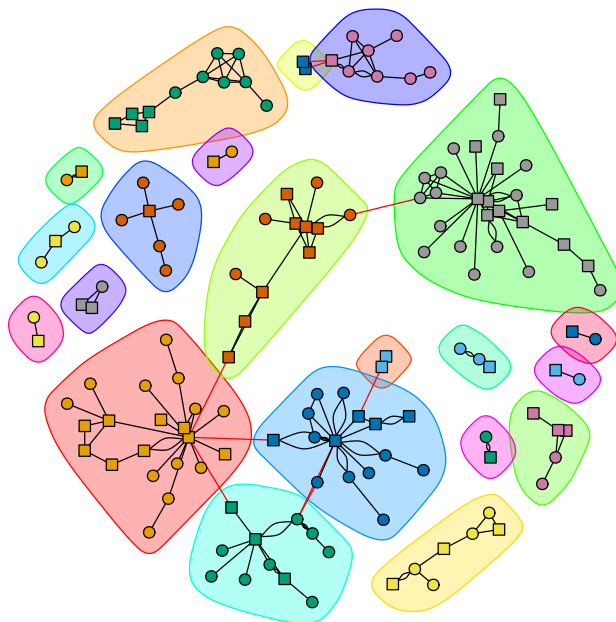
The observed structural features and their persistence over the course of two consecutive parliamentary convocations highlight three important dynamics. First, the high levels of fragmentation, decentralization, and clustering indicate that the different oligarchic clusters operate independently and likely compete rather than cooperate with one another. While cooperation may exist, it should be expected to be situational or time-constrained since oligarchs keep their networks of loyalists separate, that is ready to be used against a rival should the need arise. This type of structure is very similar to the structure of mafia networks, where individual mafia families or clans function autonomously but may occasionally form alliances, such as cartel-like agreements (Breuer and Varese 2022).

Second, the observed structural patterns suggest that oligarchic influence in the legislature is pluralistic as there is no single dominant actor. Moreover, given the substantial

²¹It should be noted that the observed community structures are partially the result of network fragmentation rather than clustering.



(a) VR8 Network



(b) VR9 Network

Figure 3: Oligarchic Networks in VR8 and VR9: Communities

The Louvain community detection algorithm was performed on the simplified networks with weighted edges (multiple edges were summed up). The identified communities were then plotted against the network representations in Figure 1 for easier comparison. Circles stand for MPs, squares—for oligarchs and oligarch-MPs.

level of oligarchic influence in the institution—about a quarter (24%) of the MPs in the 8th Ukrainian Parliament and a fifth (21%) of the MPs in 9th Ukrainian Parliament are either directly or indirectly linked to oligarchs or are oligarchs themselves—pluralism in oligarchic influence likely contributes to pluralism in legislative politics more broadly. This finding aligns with general theoretical claims that having multiple centers of power contributes to democracy, as well as more specific arguments that competition among oligarchs has prevented Ukraine from descending into authoritarianism (Way 2005). At the same time, however, the considerable degree of oligarch representation in parliament raises concerns—when oligarchs’ interests converge, their representatives in parliament may push through policies that benefit oligarchs collectively (or block policies that harm oligarchs collectively), potentially at the expense of the wider public good—an implication I consider later in the paper.

Third, the persistence of the structural patterns over time shows that placing loyalists in parliament is a strategy that oligarchs perceive as profitable and a strategy that is highly adaptable and resilient. As previously mentioned, the 9th Ukrainian Parliament experienced substantial electoral turnover, with 81% renewal rate in comparison to the previous parliament and 77% of MPs entering national politics for the first time. The oligarchic network in the 9th Ukrainian Parliament experienced significant renewal itself—nearly 58% of its loyalists (MPs) had never previously held a seat in the national legislature.²² The reshuffling of loyalists is likely the result of one or some combination of the following factors. First, oligarchs may prefer to place different loyalists in parliament with each election in order to prevent them from developing networks on their own and becoming independent actors. Second, they may use reshuffling as a mechanism for distributing rewards and punishments. Third, and most likely, the reshuffling may be related to the reputation of people’s deputies.

²²About 52% of the oligarchic network’s representatives in parliament (MPs and oligarch-MPs) were new to national-level legislative politics. Note that there were 16 oligarch-MPs in the 8th Ukrainian Parliament, 13 of whom were also part of the oligarchic network. All 10 of the oligarch-MPs in the 9th Ukrainian Parliament were also part of the respective oligarchic network and they all had held positions in the legislature prior to the 9th convocation.

For example, members of the 8th Verkhovna Rada developed a rather negative reputation with the public, which is why oligarchs may have felt the need to present new faces to voters and political party leaders. Additionally, there were several new political parties established for the 2019 election, including Servant of the People and Holos, whose main candidate selection criterion was not having been involved in politics before or not having been politically discredited before. Finally, the majority of the reshuffling in 2019 was not due to a new set of oligarchs placing loyalists in parliament since the vast majority of oligarchs who placed loyalists in the 9th Ukrainian Parliament did so at similar rates in the previous convocation (see Figure 4).

5.2 Nature of Oligarchic Networks and Measurement Validation

This section probes into the reliability and validity of the proposed strategy of identifying oligarchic networks and provides a richer description of the relationships between oligarchs and loyalists and their individual characteristics by leveraging qualitative evidence from original interviews with stakeholders, in parallel with descriptive information on node-level attributes from the discovered networks.

The vast majority of my interviewees observed that oligarchs become involved in politics to protect their wealth and, if possible, to maximize their wealth. Some informants also pointed out that oligarchs seek to get access to government rents because they are unable to survive under the conditions of free market competition²³ and because they seem to have internalized norms about doing business from the past.²⁴

Oligarchs use multiple strategies of political involvement at the same time. However, promoting loyal people to the position of legislators is important for them since other

²³ Author's interviews with an Anti-Monopoly Committee State Commissioner during the time of the 8th Ukrainian Parliament, Kyiv, 29 January 2022; a member of parliament (2014-2019), Kyiv, 3 February 2022; an NGO representative, Kyiv, 1 October 2021.

²⁴ Author's interview with an Anti-Monopoly Committee State Commissioner during the time of the 8th Ukrainian Parliament, Kyiv, 29 January 2022.

	Node	Degree	Node	Betweenness	Node	Eigenvector
1	O16	18	O16	1770	O21	1
2	O21	16	O30	983.1667	O12	0.6884
3	O30	8	O56	705.6667	O24	0.5316
4	O12	7	O57	617.1667	O38	0.4914
5	O67	6	O51	611	O18	0.4657
6	O23-MP	6	MP7	514	MP97	0.3825
7	MP89	6	O21	455.1667	O58	0.3393
8	O27	6	MP1	441	MP104	0.2604
9	O48-MP	6	O77-MP	317.5	MP87	0.2152
10	O10	6	O48-MP	303	MP109	0.2094

(a) VR8 Network

	Node	Degree	Node	Betweenness	Node	Eigenvector
1	O21	18	O16	2565.5	O21	1
2	O16	16	O48-MP	1917	O12	0.5254
3	O37-MP	12	O13	1819	O24	0.4404
4	O30	7	O57	1813	O18	0.4367
5	O48-MP	7	MP26	1560	MP15	0.4162
6	O12	6	MP15	1525	MP18	0.404
7	O18	5	O21	1519.1667	MP55	0.404
8	O24	5	O37-MP	1239.5	MP16	0.404
9	O27	5	O60-MP	1040	O38	0.3823
10	MP7	5	O30	592	MP56	0.3564

(b) VR9 Network

Figure 4: Influential Nodes

The figure shows the ten most influential nodes for the 8th and 9th Ukrainian Parliament, respectively, based on three measures of centrality: degree (how many nodes you are directly connected to; higher=more influential), betweenness (how much you act as a bridge or how many shortest paths pass through you;

higher=more influential), and eigenvector centrality (how connected you are to influential nodes; higher=more influential friends). All metrics were calculated on the simplified unweighted versions of the graphs in Figure 1.

strategies may not guarantee support on a consistent basis or carry too much of a risk. For example, speaking of cash payments to parliamentarians as a strategy oligarchs often use, one interviewee observed that “it’s hard to enforce discipline by cash because there is always somebody who can pay more and there is always going to be a certain point where Ukrainians say ‘You know what, I won’t do that for cash.’”²⁵ A case in point was the 2021 parliamentary vote on the dismissal of Ukraine’s Speaker of the Parliament, Dmytro Razumkov, when the President managed to break up a sizeable group of MPs bought off by the country’s richest oligarch, Rinat Akhmetov, resulting in the passing of the bill against the interests of the oligarch.²⁶ Direct participation in politics coupled with considerable enrichment during the time in office, on the other hand, may lead to extra scrutiny over business activities and “trouble” once the political leadership changes.²⁷

Oligarchs would fund political parties and provide air time on their TV channels during elections in exchange for places for “their puppets” on party lists or they would use their position as largest employers in certain towns and regions to push through their own candidates in single-member districts.²⁸ For instance, one interviewee observed that the entire party list of one political party, Opposition Bloc, in 2014 was divided up between several oligarchs “on a quota principle” and the political party of the President, Petro Poroshenko Bloc, included representatives of all major oligarchic groups, except one.²⁹ These reflections align with patterns observed in my network data. Appendix E provides a visual representation of the oligarchic network by election method for the 8th and 9th Ukrainian parliament, respectively, showing that oligarchs are equally likely to promote loyalists through the first-past-the-post and the proportional representation route. Appendix F displays the networks by parliamentary faction affiliation, demonstrating that all parliamentary parties in both convocations include loyalists or oligarch-MPs, although with considerable variation across

²⁵ Author’s interview with a political consultant, Kyiv, 4 February 2022.

²⁶ Author’s interview with two investigative journalists, Kyiv, 13 October 2021.

²⁷ Author’s interview with a political journalist, Kyiv, 10 November 2021.

²⁸ Author’s interview with a member of parliament (2014-2019), Kyiv, 3 February 2022.

²⁹ Author’s interview with a political journalist, Kyiv, 10 November 2021.

parties.

While all interviewees agreed that oligarchs exert significant influence over the Verkhovna Rada through loyal legislators, many did not differentiate between the types of oligarchic clients in parliament unless they were prompted to think about the differences. For example, MPs bought off by an oligarch through cash payments, MPs bought off by an oligarch through the provision of free media coverage, and MPs linked to an oligarch through a personal tie would be labeled “loyal.”

Several informants observed that in earlier years oligarchs used to promote their bodyguards and drivers to parliament, but now they seemed to have switched to “solid,” intelligent people, lawyers, and managers who could skillfully use the legislative process to their patron’s and own advantage.³⁰ My data show that oligarchs, indeed, rely on subordinates to represent their interests in parliament. For instance, in many of the business- and NGO-based ties between oligarchs and MPs, oligarchs are founders, shareholders, or beneficial owners, while MPs are managers, signatories, or employees. Oligarchs also seem to prefer to place loyalists in parliament with whom they have had a lengthy personal relationship. Not all, however, follow this practice. In 2014, the second richest oligarch in the country, Ihor Kolomoyskyi, put forward as candidates for people’s deputies individuals who he worked with for a short period of time and who he considered predictable (a jargon term used to describe such people is “poniatnye liudi”), along with a few of his “own people”, such as long-time business partners.³¹ The reliance on predictable people later played against him as they became their own persons, casting aside the clout of the oligarch.³²

In general, oligarchic networks are deemed rather cohesive. Informants referred to

³⁰ Author’s interviews with a political journalist, Kyiv, 10 November 2021; an international NGO representative, 14 January 2022.

³¹ Author’s interview with a political journalist, Kyiv, 10 November 2021.

³² Author’s interviews with a political journalist, Kyiv, 10 November 2021; a member of parliament (2014-2019), Kyiv, 2 November 2021.

them as “communities”³³ and “clans” with “family-like relationships.”³⁴ Among the things that bind these networks together are a shared criminal past³⁵ and discrediting information that oligarchs have on their subordinates.³⁶ The cohesiveness (high clustering coefficient) of oligarchic networks is not very well reflected in my network data partly because I measure a limited number of link types. There are both methodological and theoretical reasons for that. Relevant types of links, such as friendships, are nearly impossible to measure in a meaningful way at scale, while other types of links, such as shared affiliation with legislative or executive bodies or being from the same geographical region, do not consistently act as transmitters of information, influence, or peer pressure but increase the probability of forming triangles (high clustering coefficient).

The overall pattern of connections between oligarchs and MPs and notable loyalists identified by the proposed method were confirmed by investigative journalists from *Bihus.info*, a leading Ukrainian investigative platform,³⁷ and *Novoe vremya*, a Ukrainian journal publishing high-quality political and economic investigations.³⁸ The majority of loyalists sitting on two key parliamentary committees in the 8th Ukrainian Parliament—the Committee on Fuel and Energy Complex, Nuclear Policy and Nuclear Safety, and the Committee on Prevention and Counteraction to Corruption—were also confirmed as “advocates” for the interests of specific oligarchs by members of the leadership of the respective committees.³⁹ For instance, a member of the leadership of the Committee on Prevention and Counteraction to Corruption shared the following⁴⁰:

³³ Author’s interview with a political journalist, Kyiv, 10 November 2021.

³⁴ Author’s interview with a Ukrainian academic, online, 4 October 2021.

³⁵ Author’s interview with an Anti-Monopoly Committee State Commissioner during the time of the 8th Ukrainian Parliament, Kyiv, 29 January 2022.

³⁶ Author’s interview with a think-tank representative, Kyiv, 3 December 2021.

³⁷ Author’s interview with two investigative journalists, Kyiv, 13 October 2021.

³⁸ Author’s interview with a business journalist, Kyiv, 22 January 2022. The journal was renamed to *New Voice* after Russia’s full-scale invasion.

³⁹ Author’s interviews with a member of parliament (2014-2019), Kyiv, 2 November 2021; a member of parliament (2014-2019), Kyiv, 3 February 2022.

⁴⁰ All interview data were anonymized due to Russia’s full-scale invasion of Ukraine, which began on 24 February 2022, in order to protect the privacy and safety of human subjects, even though the overwhelming majority of informants gave explicit permission to use their real names in the study at the time of the

MP110 is very close to and old friend of O67. Before Parliament, he worked as a lawyer at the main entity of O67. And, as I know, they are friends with O67 from youth. Actually, O67, MP113, and MP110 are friends from their twenties. So he [MP 110] is very connected to O67. He told me that O67 ordered him to be part of this Committee. He did not want to, but that was an order. [...] Again, MP110 was in charge of this operation because of O67's order. He wasn't happy, but his mind is like a lawyer's [mind]—I received an order, I should implement it. That's all. We really did have quite good personal relations, but on the political level, he strongly represented O67's will. (On MP110 and MP113, identified to be in O67's cluster.)

He [MP158] used to be a Soviet militia officer [...] Then he joined O30's team as chief of security. [...] MP158 was strongly and very closely affiliated with O30 from beginning to end [of the parliamentary mandate]. (On MP158, identified to be in O30's cluster.)

He [MP152] is more associated with Businessperson 1 [O21's business partner] [...] Because once he offered me to organize a meeting with Businessperson 1 and I refused. [...] as I knew, they always had conversations. They are both from the same region, from Volyn region [...], and he always had strong communication with Businessperson 1. Maybe Businessperson 1 supported him during the elections, maybe not only during the elections, so he had such dependence. (On MP152, identified in O21's cluster.)

A member of the leadership of the Committee on Fuel and Energy Complex, Nuclear Policy and Nuclear Safety made similar observations on MP-oligarch connections. For instance, they categorized MP152 as “O16's guy” and MP131 as “a balancer, but when MP113 [identified as connected to O67] came to committee meetings and discussed with him what

interview.

needs to be adopted, he [MP131] was O67’s guy.” (MP152 was identified in O16’s cluster and MP131—in O22’s cluster, which is disconnected from O67’s cluster.)

There are various ways in which loyalists in parliament defend the interests of their patrons. My data show that loyalists sit on different parliamentary committees—the number of loyalists per oligarchic cluster exactly or near exactly matches the number of distinct committees they sit on for all the oligarchic clusters in my network. This suggests that oligarchs use loyalists to gain wide access to information and individuals in leadership positions, rather than to win committee votes.⁴¹ Loyalists would vote in favor of their oligarchs’ interests, including on appointments and dismissals of officials the parliament exercises control over, delay the legislative process on specific bills, try to arrange meetings of businesspeople with committee chairs, and use their positions as people’s deputies to meet with members of the executive or request information from executive bodies.⁴²

5.3 Oligarchic Networks: Voting Behavior

An observable implication of the proposed theory is that members of oligarchic networks in parliament (oligarchs’ loyalists and oligarchs serving as deputies themselves) will vote the same way on bills related to common oligarchic interests. Here, I do not treat vote choice as a function of the structural properties of the uncovered oligarchic networks but rather as a function of a common or overlapping oligarchic interest.

According to Hypothesis 2, belonging to an oligarchic network should be associated with voting against reform bills that help establish a level playing field for all market actors, namely reform bills related to anti-corruption, public procurement, and competition policy. Tables 3 and 4 provide evidence in support of Hypothesis 2 for each of the convocations under investigation. Each table reports the results from four models that consider the

⁴¹The parliamentary committees of the Verkhovna Rada typically follow the norm of taking unanimous decisions.

⁴²Author’s interviews with a member of parliament (2014-2019), Kyiv, 3 February 2022; a member of parliament (2014-2019), Kyiv, 2 November 2021; a political journalist, Kyiv, 10 November 2021.

	Model 1	Model 2	Model 3	Model 4
(Intercept)	0.83*** (0.02)	0.87*** (0.02)	0.54*** (0.03)	0.57*** (0.03)
Loyalist deputy	−0.14*** (0.03)	0.03 (0.02)	0.03 (0.02)	0.03 (0.02)
Oligarch deputy	−0.32*** (0.07)	−0.06 (0.05)	−0.07 (0.06)	−0.07 (0.05)
Reform score	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)
Loyalist deputy x Reform score	−0.03*** (0.01)	−0.03*** (0.01)	−0.03*** (0.01)	−0.03*** (0.01)
Oligarch deputy x Reform score	−0.02 (0.02)	−0.03 (0.02)	−0.02 (0.02)	−0.02 (0.02)
<i>Fixed Effects</i>				
Year	Yes	Yes	Yes	Yes
Faction		Yes	Yes	Yes
SMD deputy			Yes	Yes
Former deputy			Yes	Yes
Government deputy			Yes	Yes
Female				Yes
Age				Yes
<i>Fit Statistics</i>				
R ²	0.04	0.19	0.21	0.21
Adj. R ²	0.04	0.19	0.21	0.21
Num. obs.	26123	26123	26123	26123

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table 3: Main Regression Results, VR8

The table reports the results from OLS regression estimations of vote choice on reform bills related to anti-corruption, public procurement, and competition policy combined ($N = 76$). Robust standard errors are clustered at the deputy level.

outcome variable—deputy vote choice—as a function of a number of predictors. Model 1, the restricted model, includes indicator variables for being an oligarch deputy and being an oligarch loyalist, and their interactions with the reform score of the bill. Model 2 adds control variables for MP faction membership. Model 3 includes additional control variables that could affect both deputy vote choice and being a member of an oligarchic cluster, namely election method, former parliament membership, and belonging to a governing party. Model 4 adds demographic controls to Model 3. All models include year fixed effects.

	Model 1	Model 2	Model 3	Model 4
(Intercept)	0.78*** (0.01)	0.93*** (0.01)	0.92*** (0.01)	0.92*** (0.02)
Loyalist deputy	-0.18*** (0.03)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)
Oligarch deputy	-0.51*** (0.04)	-0.04 (0.07)	-0.02 (0.07)	-0.02 (0.07)
Reform score	-0.01 (0.00)	-0.01 (0.00)	-0.01 (0.00)	-0.01 (0.00)
Loyalist deputy x Reform score	-0.04** (0.01)	-0.04** (0.01)	-0.04** (0.01)	-0.04** (0.01)
Oligarch deputy x Reform score	-0.08* (0.04)	-0.08* (0.03)	-0.08* (0.03)	-0.08* (0.03)
<i>Fixed Effects</i>				
Year	Yes	Yes	Yes	Yes
Faction		Yes	Yes	Yes
SMD deputy			Yes	Yes
Former deputy			Yes	Yes
Female				Yes
Age				Yes
<i>Fit Statistics</i>				
R ²	0.08	0.38	0.38	0.38
Adj. R ²	0.08	0.38	0.38	0.38
Num. obs.	15147	15147	15147	15147

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table 4: Main Regression Results, VR9

The table reports the results from OLS regression estimations of vote choice on reform bills related to anti-corruption, public procurement, and competition policy combined ($N = 36$). Robust standard errors are clustered at the deputy level.

Model 3 is my preferred specification as it strikes a balance between controlling for major observable confounders and retaining parsimony. The addition of age and gender in Model 4 does not substantively change the main results, and the demographic variables themselves are statistically insignificant, suggesting they do not confound the relationship of interest. For this reason, I consider Model 3 to offer the most credible estimate of the effect of being part of an oligarchic network on vote choice.

The coefficients on the interaction terms between being an oligarch loyalist and reform score are negative and statistically significant across all models in both convocations under

investigation. In my preferred model specification for Verkhovna Rada 8, the interaction term indicates that for loyalist deputies, each one-unit increase in the reform score is associated with a 3 percentage point smaller increase in the probability of voting yes compared to non-loyalists, all else being equal. This suggests that loyalists are less supportive of bills that advance reform (or more supportive of bills that reverse reform). In the model for Verkhovna Rada 9, the interaction coefficient is slightly larger in magnitude—4 percentage points. These effects correspond to 4% and 5% of the mean of the dependent variable, respectively. Similarly, the interaction between being an oligarch deputy and reform score is negative and statistically significant in all models for Verkhovna Rada 9, suggesting that oligarch deputies are 8 percentage points less likely than non-oligarchs to vote yes as reform score increases. This indicates weaker support for pro-reform bills (or stronger support for anti-reform ones). In Verkhovna Rada 8, the corresponding coefficient is not statistically significant, however, it runs in the expected negative direction.

There are several possible explanations for the modest magnitude of the interaction effects. First, the regressions were estimated on samples of adopted bills due to a data limitation—the reform score variable is only available for bills that became law. Bills that fail to pass are neither categorized, nor scored by Vox Ukraine experts. As a result, the dependent variable is skewed (75% “yes” votes). This limited variation may be responsible for the small estimated effects. Substantively, if loyalists and oligarchs know in advance that bill passage is guaranteed, they might symbolically vote in favor of reform. They might also support reform as part of logrolling, in exchange for favors outside of the legislative arena, or due to pressure. In the 8th Ukrainian Parliament, for example, the loyalists of President Petro Poroshenko, himself an oligarch, initially resisted anti-corruption initiatives. However, under pressure from international partners and domestic reform activists, they ultimately supported some progressive reform bills ([Nitsova et al. 2018](#)). Finally, the presence of any statistically significant interaction effects is in itself remarkable and underscores the robustness of the relationship given oligarchs’ simultaneous reliance on other strategies that

aim to influence the voting behavior of non-loyalist MPs ([Meleshevyh 2016](#); [Markus and Charnysh 2017](#)). Oligarchs’ buying off non-loyalist MPs for votes on specific bills in my sample, for example, would dampen the interaction effects of interest.

The results reported in Tables [3](#) and [4](#) are largely driven by bills on anti-corruption reform and are robust to alternative estimation methods. A breakdown of the results by bill type and logistic regression estimates are provided in Appendix [H](#).

6 Conclusion

This paper argued that, under the conditions of competitive elections and weak rule of law, extremely wealthy businesspeople adopt a wealth defense strategy of political involvement that relies on the promotion of loyalists—individuals who are personally linked to them—to the position of members of parliament. I developed a network-based empirical strategy for identifying oligarchs’ informal groups of loyalists and demonstrated its reliability and validity, using the case of Ukraine during two parliamentary convocations. I showed that legislative capture through loyalists is a strategy that oligarchs persistently use and adapt, and that the interpersonal connections between oligarchs and members of parliament take the form of a highly fragmented, loosely connected, and decentralized network with distinct clusters. I further provided evidence that, through their loyal legislators, oligarchs ensure their interests are consistently represented in the legislature and stand in opposition to reforms aiming to create a level-playing field for all market actors.

The highly sensitive and hidden nature of oligarchic influence makes the discovery of any systematic pattern a challenge. The present study combines a “discovery of new things ‘out there’ which must be named, measured, characterized and classified, or re-classified” ([Gerring 2012](#); p. 732) and an attempt to go a step further by analyzing the impact of the discovered phenomenon on a socially important outcome. While it does not isolate causal effects of belonging to an oligarchic network on policymaking, the study shows that

being a loyalist or being an oligarch deputy is an important factor for vote choice even after accounting for key variables such as political faction affiliation.

I expect my theory to travel to other developing democracies with weak rule of law and competitive elections. While the specific types of interpersonal connections that act as transmitters of influence, information, and peer pressure, and their frequencies may vary across individual contexts—for instance, family-based political connections appear to be more widespread in Latin America and Asia than in Eastern Europe—the practice of oligarchs relying on individuals personally linked to them as representatives in legislatures should hold. Research on state capture through oligarchs’ loyalists across countries, at the subnational level, across government institutions, or across time is likely to reveal important structural variations that could help explain differences in socially important outcomes such as public goods provision and regime dynamics.

A particularly promising direction for future research lies in examining the relationship and dynamics between oligarchic networks and political parties. Key questions remain unanswered: Which types of political parties demonstrate greater independence from such networks? How do loyalists and oligarch deputies affect party discipline? Do oligarchic networks act as party substitutes ([Hale 2005](#))? Do they represent the interests of their constituents beyond those of their patrons? Additionally, analyzing the placement of loyalists in the legislature alongside other wealth defense strategies within a unified framework—similar to the approaches of [Weschle \(2022\)](#) and [Markus and Charnysh \(2017\)](#)—could offer insight into which strategies are more successful and how oligarchs deal with strategic trade-offs. This is important because legislative state capture through loyalists may confound the observed positive effects of party financing and media control on oligarch wealth.

Finally, my findings bear important implications for institutional and policy reform in Ukraine and beyond. For example, the study showed that oligarchs are equally likely to promote loyalists in parliament through the proportional and the majoritarian component

of the electoral system. This suggests that simply switching to an entirely proportional electoral system, a strategy lauded by experts and civil society activists as effective in the fight against oligarchic influence, may not be enough to limit that influence unless other measures are put in place.

Another policy implication of having networks of oligarchic influence in parliament is the presence of a significant number of deputies with pronounced resistance to reform. This suggests that domestic reformers may need to rely on external sources of pressure, in addition to their own, to pass reform-advancing legislation. The structural features of the network of connections between oligarchs and MPs suggests that reformers would be most effective if they target their coalition-building efforts or pressure at oligarchs who lie at the center of their respective clusters.

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Appendices

A Data and Data Collection Methods

A.1 Network Data

The data on family members of MPs in the 8th Ukrainian Parliament and oligarchs were collected from open sources, including individuals' Wikipedia pages, public officials' electronic asset declarations (declarations.com.ua), investigative websites with biographies and individual profiles of politicians and oligarchs (e.g. file.liga.net/persons, lb.ua/file/person, chesno.org/politician, genshtab.info, politrada.com/dossier, dosye.info), a Ukrainian politically-exposed persons database (pep.org.ua), a database of Ukrainian citizens and their home addresses (nomer-org.website/allukraina), business intelligence platforms (e.g. YouControl), social media (VKontakte, facebook, instagram), local and national online media (e.g. Ukrainska Pravda, Novoe vremya). MPs and oligarchs are public officials and/or prominent community members attracting significant public attention and scrutiny, therefore publicly available information about the names of their family members can be considered relatively reliable. Some individuals are more private about their personal life than others, but efforts have been made to uncover as many family members of each MP and oligarch as possible and confirm these family connections in more than one sources.

The data on family members of MPs in the 9th Ukrainian Parliament were compiled differently. Instead of collecting the full names of all immediate relatives of each Verkhovna Rada 9 MP from open sources, I used information on family connections among oligarchs and MPs in the 9th Verkhovna Rada that were discussed directly in investigative media sources. I estimate the likelihood of missing family connections by relying on investigative sources only as low, given that the comprehensive data collection approach I applied to the 8th Ukrainian Parliament did not yield any additional family connections among oligarchs

and MPs beyond the ones already identified by Ukrainian investigative journalists.

The data on affiliations to business companies, non-profits, and political party organizations of MPs in each of the two convocations under investigation and oligarchs are based on information from the Unified State Register of Legal Entities, Sole Traders and Public Organizations (USR). I relied on a combination of automated and manual data collection methods through YouControl, a Ukrainian analytical business intelligence platform. The platform contains current and historical registration and financial information on about 5 million Ukrainian companies and sole proprietors. It integrates data from approximately 80 national and international business registers, including the USR, and sanctions lists. I chose YouControl as my primary data source over two of its rivals—SPARK-Interfax, an analytical product of Interfax Group focusing on Russia and the countries from the former Soviet Union, and Orbis, an analytical product of the Bureau van Dijk with a global coverage, after I compared the performance of the three systems by searching for information on a number of individuals from my dataset. YouControl allowed for the most comprehensive search and had the best matching algorithm on individuals' names.

There are three important limitations of the registration data in the USR. According to a comprehensive analysis of the data on beneficial ownership in the register,⁴³ some 27% of the companies did not provide information on beneficial owners. Those that did provide such information, did not always report details correctly, for example they identified a manager as the beneficial owner or listed a nominal owner. Obfuscating or hiding ownership is an obvious concern for my research. Wealth concealment is probably not uniformly distributed among individuals. Recent research has demonstrated that businesses with connections in government tend to hide ownership less than those with no political connections (Earle et al. 2022). To uncover at least some of the hidden relationships, I collect information on the informal business and other ties between individuals of interest in reliable journalistic investigations.

⁴³https://project.liga.net/projects/beneficiar/index_en.html

The second data limitation is the lack of unique individual identifiers in the USR, meaning that there is no straightforward way to differentiate between two individuals with the same full name. My empirical strategy, however, reduces the probability of counting false positives. It consists of two main steps: 1) find the entities associated with MPs and oligarchs based on a full name match in YouControl. Here, I am counting entities that belong to my individuals of interest *and* individuals with the exact same name as my individuals of interest. 2) Uncover the connections between two individuals based on their common affiliation with entities. To uncover a connection, I need a match on the full names of *two* individuals from my dataset *in the same* entity. Thus, even though I may be overcounting entities associated with individuals of interest, the chances of overcounting connections between them are much smaller. Moreover, even if my analysis includes a few false positives, i.e. connections that in reality are not there, the bias in estimates should be working against my theory.

The last data limitation relates to name spellings. There are cases of multiple spelling versions of the same Ukrainian name (e.g. Єремєєв and Єремєєв, Наталія and Наталя, Дарія and Дар'я). Some or all of these versions might be used in the media and in the USR to refer to the same individual. That is a separate issue from the one related to Russian and Ukrainian spellings (e.g. Юхимівна (Ukrainian spelling) vs. Ефимовна (Russian spelling) vs. Єфимівна (Ukrainian transliteration of the Russian spelling of the name) vs. Юхимовна (Russian transliteration of the Ukrainian spelling of the name)). The presence of the same individual under slightly different names in the registers may be purposeful, given the desire of some elites to obscure ownership, or unintentional, given the dual usage of Ukrainian and Russian in Ukraine (unintentional does not mean random—there are geographical and other demographic patterns of language use). I checked the names of MPs and oligarchs in YouControl using both the Ukrainian and Russian spellings of their names.

In addition to the data from YouControl, I collected information on alleged oligarchic groups of influence in parliament published in reputable online media, such as Novoe vre-

mya and Ukrainska pravda, and traced the alleged relationships before the 2014 and 2019 parliamentary election, respectively, using investigative websites. Some of these websites are projects of independent information agencies, such as Liga.BusinessInform. Others are projects of anti-corruption NGOs, such as CHESNO, or investigative journalists, such as Serhiy Rudenko. The information could be considered reliable, given the high quality of investigative journalism in Ukraine. Data from such websites have been used to uncover the value of political connections in Ukraine ([Balabushko et al. 2018](#)). The advantage of using such sources lies in that they provide information on business connections that cannot be found in official business registers. For example, they contain information on oligarchic companies that have no formal connections to oligarchs, or biographical information on MPs working for an oligarchic company for years prior to running for office, including holding middle management and/or senior management positions that are not required by law to be recorded in the business registers. I also used information from interviews of oligarchs and MPs published in the media.

A.2 Network Data Collection Algorithm

Identifying connections, using YouControl

For each individual of interest (oligarch, MP):

1. * Perform a search in YouControl on the individual as a natural person, using their full name (family name, first name, patronymic) spelled in Ukrainian, with enabled filter for exact matches.
2. * Collect the unique EDRPOU codes of entities that have ever been associated with the individual in any of the following capacities: beneficial owner, shareholder, manager, signatory.
3. * Perform a search in YouControl on the individual as a natural person, using their full name (family name, first name, patronymic) spelled in Russian, with enabled filter

for exact matches.

4. * Collect the unique EDRPOU codes of entities that have ever been associated with the individual in any of the following capacities: beneficial owner, shareholder, manager, signatory.
5. Combine the results from steps (2) and (4) for each individual.
6. Match individuals by shared entities based on EDRPOU.
7. * Collect information on the type of connector entities by EDRPOU.
8. Keep connections through business companies, non-profits, and political party organizations.
9. Manually check if each connection was established before the parliamentary election of 2014/2019 and if it lasted for at least one year.
10. Discard connections formed after the parliamentary election of 2014/2019.

* Automated data collection process through YouControl's API.

Identifying connections, using investigative sources

For each alleged connection between an oligarch and an MP explicitly referenced in Novoe vremya and Ukrainska pravda articles that analyze oligarchic groups of influence in the 8th Verkhovna Rada (2014–2019) and 9th Verkhova Rada (2019–2022):

11. Manually check the validity of the claim that a connection exists against other investigative sources.
12. Categorize the type of connection and record the year the connection was established and whether it lasted for at least a year.
13. Discard connections formed after the parliamentary election of 2014/2019.

Identifying family connections, using open sources

For each individual of interest (oligarch, MP):

14. Manually collect the full names of the individual’s immediate family members.
15. Establish connections between individuals and categorize them as family connections.
16. Combine the results from steps (10), (13), and (15).

A.3 Network Data Descriptive Statistics

I collected data on 451 MPs (excluding oligarch-MPs) in the 8th Ukrainian Parliament, 434 MPs (excluding oligarch-MPs) in the 9th Ukrainian Parliament, and 137 oligarchs (including oligarch-MPs). After performing steps 1–5 from my data collection approach, I had data on entity affiliations of 426 MPs in the 8th Ukrainian Parliament, 405 MPs in the 9th Ukrainian Parliament, and 134 oligarchs. Table A1 shows descriptive statistics on entity affiliations for MPs and oligarchs.⁴⁴ Expectedly, oligarchs are associated with more entities than MPs, on average. The outliers among oligarchs—Rinat Akhmetov, Oleg Bakhmatyuk, Serhiy Tihipko, and Adnriy Verevskyi—are at 1st, 10th, 13th, and 16th position in the ranking of wealthiest individuals in Ukraine for 2014 and their main assets are in metallurgy, agriculture, finance, and agriculture, respectively. These outlier observations may be reflective of data quality issues, sector specificities, or ownership obfuscation/hiding. The biggest outlier among Verkhovna Rada 8 MPs is a lawyer associated with 121 entities. For Verkhovna Rada 9, the biggest outlier is an entrepreneur associated with 133 entities.

Further, the names of three oligarchs, 25 Verkhovna Rada 8 MPs, and 29 Verkhovna Rada 9 MPs were not associated with any entities of interest in the USR. The three oligarchs with missing data are Babakov O.M., a Russian citizen, Schneider O.E., a Canadian citizen born in Russia, and Filkenshtein, B.S., a Ukrainian citizen. All three oligarchs have businesses in Ukraine, which are owned indirectly through other companies. Qualitative

⁴⁴The statistics are based on the following types of entities returned by YouControl’s API: business companies, political party organizations, and non-profits.

sources suggest that the problem of indirect ownership through other companies or proxies is not uncommon. I try to compensate for this weakness of the data by using information on connections between oligarchs and MPs from reputable investigative sources.

I also collected the names of 636 relatives of oligarchs and 2074 relatives of Verkhovna Rada 8 MPs. Table A1 shows the distribution of relatives per person for MPs and oligarchs. Those with very few relatives are younger or have a low public profile. Those on the high end of the distribution are of Tatar ethnic origin or divorced and remarried.

	N	Mean	Median	St.Dev.	Min	Max
Oligarch No. of Entities	134	40.62	21	54.69	1	367
VR8 MP No. of Entities	426	10.21	6.5	11.62	1	121
VR9 MP No. of Entities	405	11.64	7	15.35	1	133
Oligarch No. of Relatives	137	4.64	5	1.95	1	12
VR8 MP No. of Relatives	451	4.6	5	1.67	1	12

Table A1: Entity Affiliations and Relatives

The table shows the distributions of entity affiliations and relatives for individuals of interest.

B Overall Networks

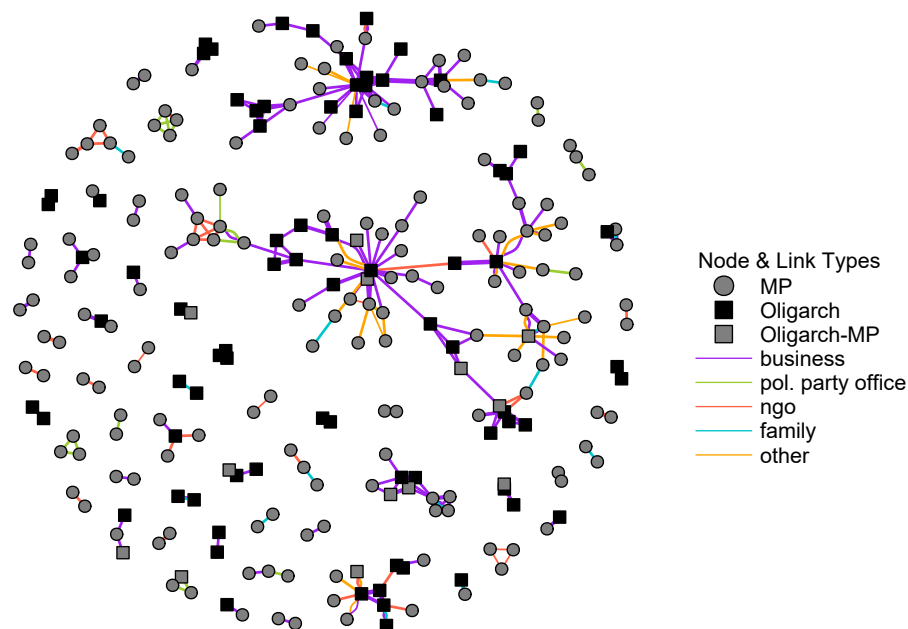


Figure B1: Overall Network, VR8

The graph represents the discovered network of connections among all nodes of interest. The graph is undirected and contains multiple edges, weighted by the logged number of entities connecting two individuals. Strongly-connected nodes appear closer together, weakly-connected nodes appear further apart. Graph size: 257 nodes (78 oligarchs, 166 MPs, 13 oligarch-MPs. Note that 3 oligarch-MPs in VR8 are not connected to any other oligarchs or MPs and are, therefore, not present in the graph.) and 296 multiple edges (256 single edges after summing up the multiple edges). Number of connected components: 56. Share of edges by type: 59.8% business, 14.9% NGO, 8.8% family, 8.4% other, 8.1% political party organization. The graph was plotted using the Fruchterman-Reingold layout algorithm in igraph.

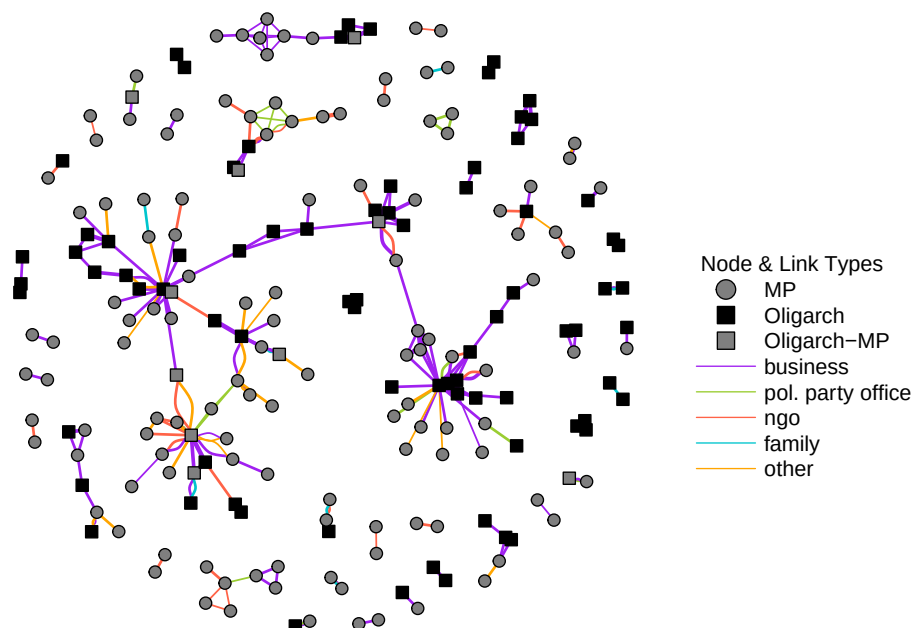


Figure B2: Overall Network, VR9

The graph represents the discovered network of connections among all nodes of interest. The graph is undirected and contains multiple edges, weighted by the logged number of entities connecting two individuals. Strongly-connected nodes appear closer together, weakly-connected nodes appear further apart. Graph size: 214 nodes (79 oligarchs, 125 MPs, 10 oligarch-MPs) and 258 multiple edges (222 single edges after summing up the multiple edges). Number of connected components: 43. Share of edges by type: 61.2% business, 16.3% NGO, 9.7% other, 8.1% political party organization, 4.7% family. The graph was plotted using the Fruchterman-Reingold layout algorithm in igraph.

C Degree Distributions

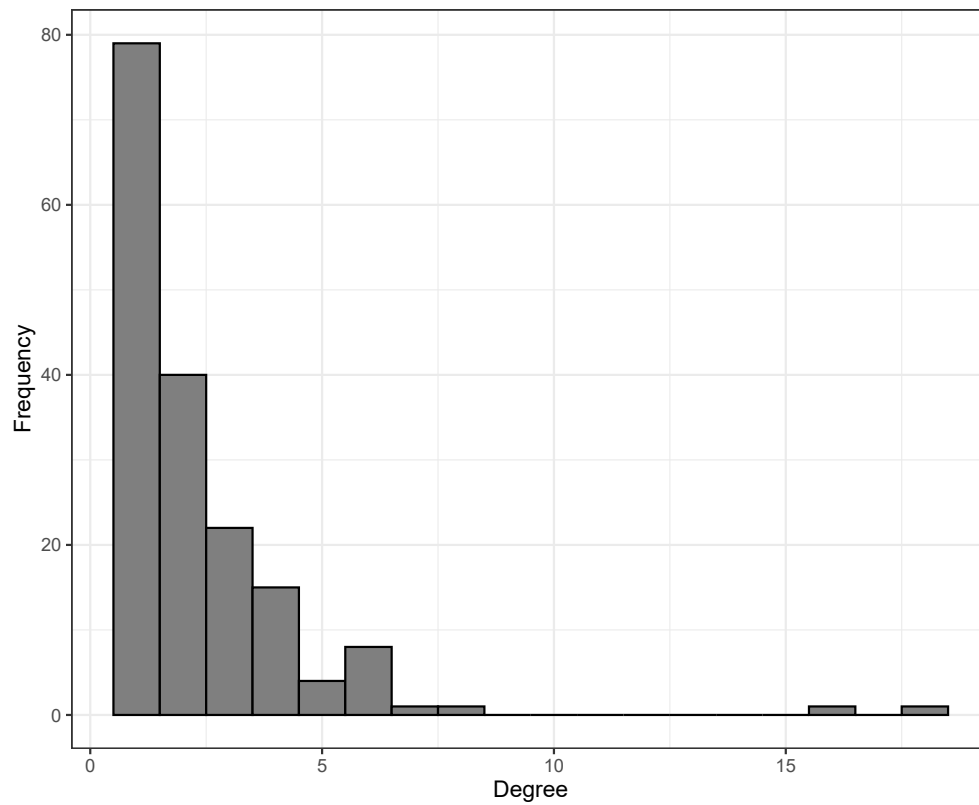


Figure C3: Degree Distribution, VR8 Network

The figure reports the degree distribution of the simplified version of the network displayed in Figure 1, Panel a.

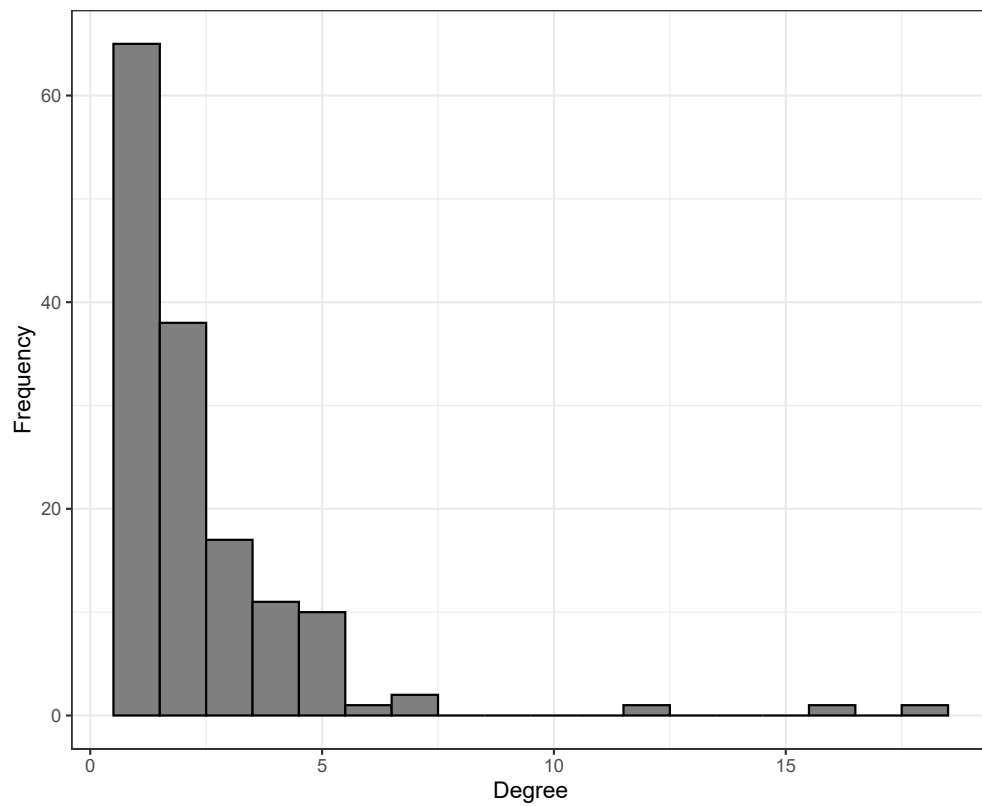


Figure C4: Degree Distribution, VR9 Network

The figure reports the degree distribution of the simplified version of the network displayed in Figure 1, Panel b.

D Additional Simulation Results

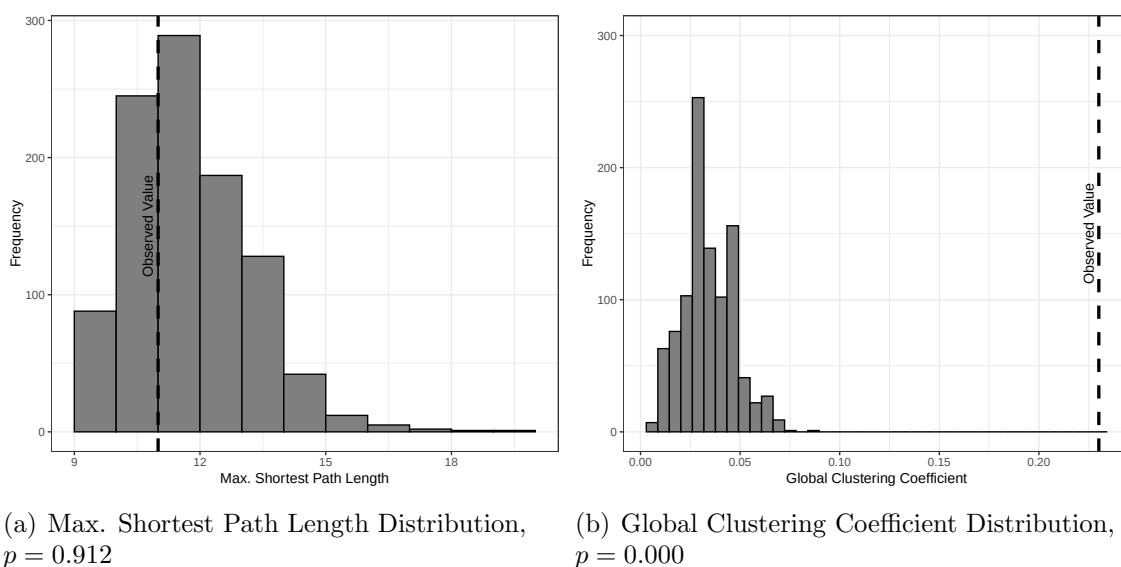


Figure D5: Additional Simulation Results, VR8 Network

The two panels plot the observed values of two VR8 network statistics—maximum shortest path length and global clustering coefficient—against the distributions of the same statistics derived from 1000 simulated random graphs that preserve the observed network’s degree sequence. The random graphs were generated using the Blitzstein–Diaconis sequential importance sampling algorithm.

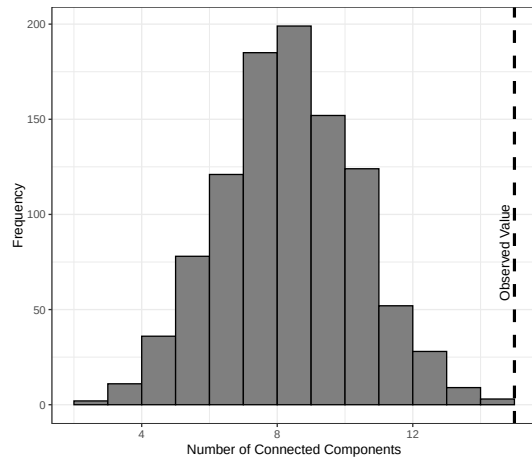
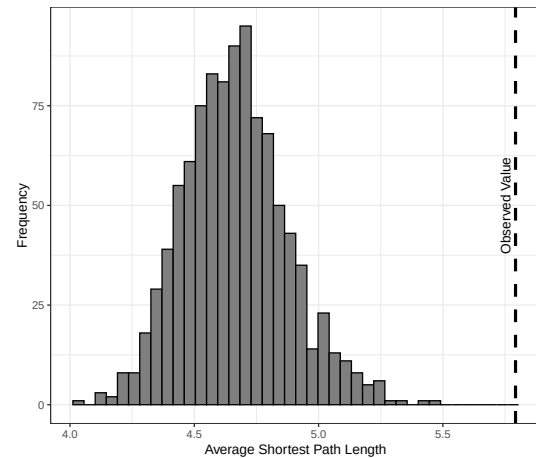
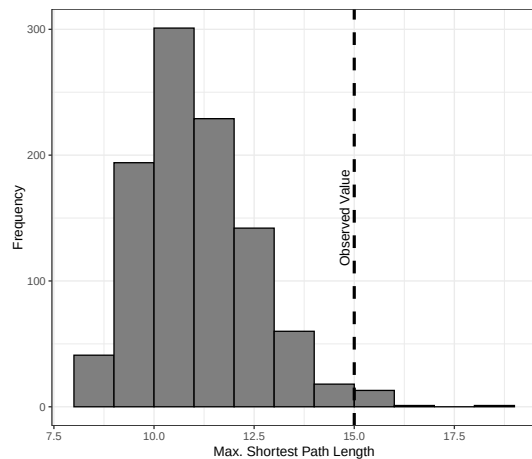
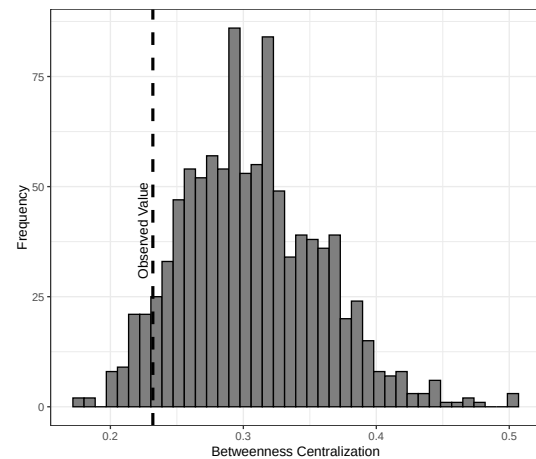
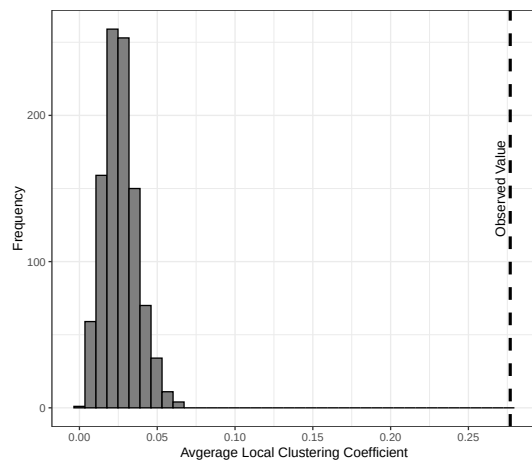
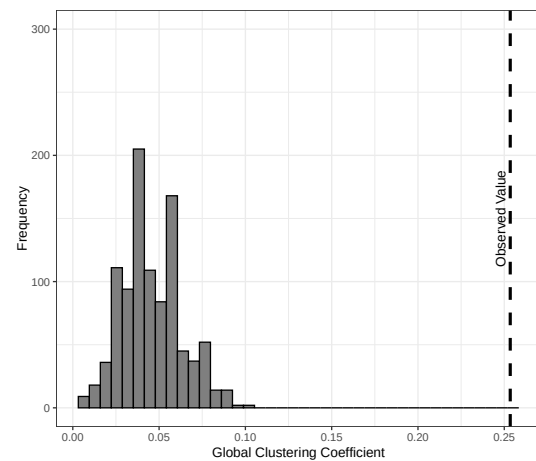
(a) No. of Connected Components, $p = 0.003$ (b) Avg. Shortest Path Length, $p = 0.000$ (c) Max. Shortest Path Length, $p = 0.033$ (d) Betweenness Centralization, $p = 0.065$ (e) Avg. Local Clustering Coef., $p = 0.000$ (f) Global Clustering Coef., $p = 0.000$

Figure D6: Additional Simulation Results, VR9 Network

The panels plot the observed values of VR9 network statistics against the distributions of the same statistics derived from 1000 simulated random graphs that preserve the observed network's degree sequence, using the Blitzstein–Diaconis sequential importance sampling algorithm.

E Networks by Election Method

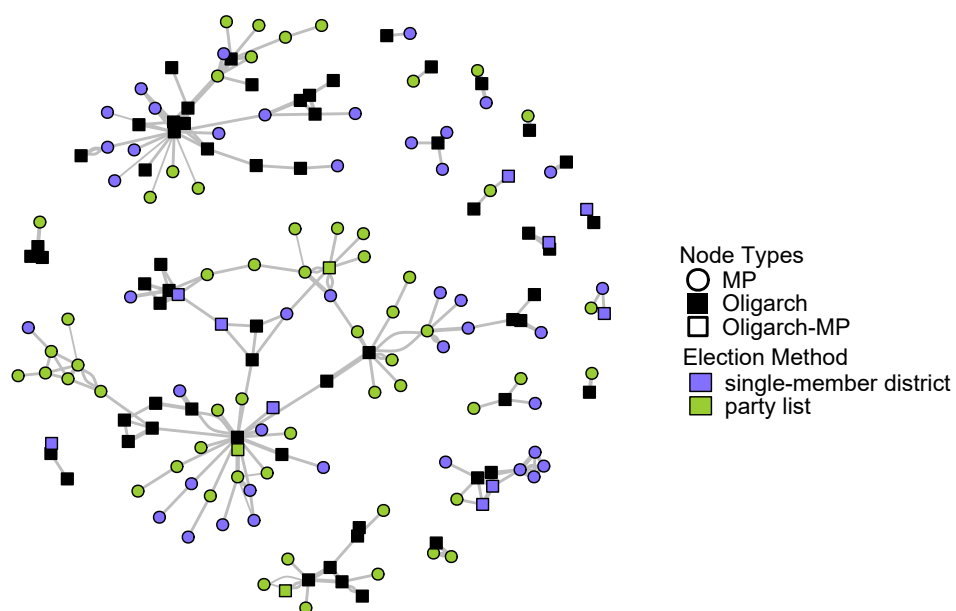


Figure E7: VR8 Network by Election Method

The figure shows the network in Figure 1, Panel a by method of election.

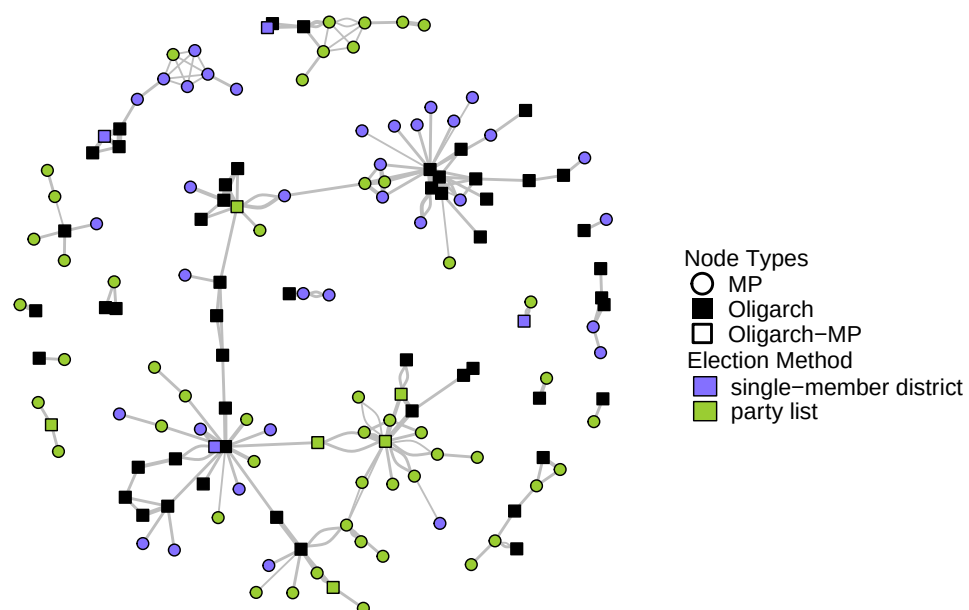


Figure E8: VR9 Network by Election Method

The figure shows the network in Figure 1, Panel b by method of election.

F Networks by Party Affiliation

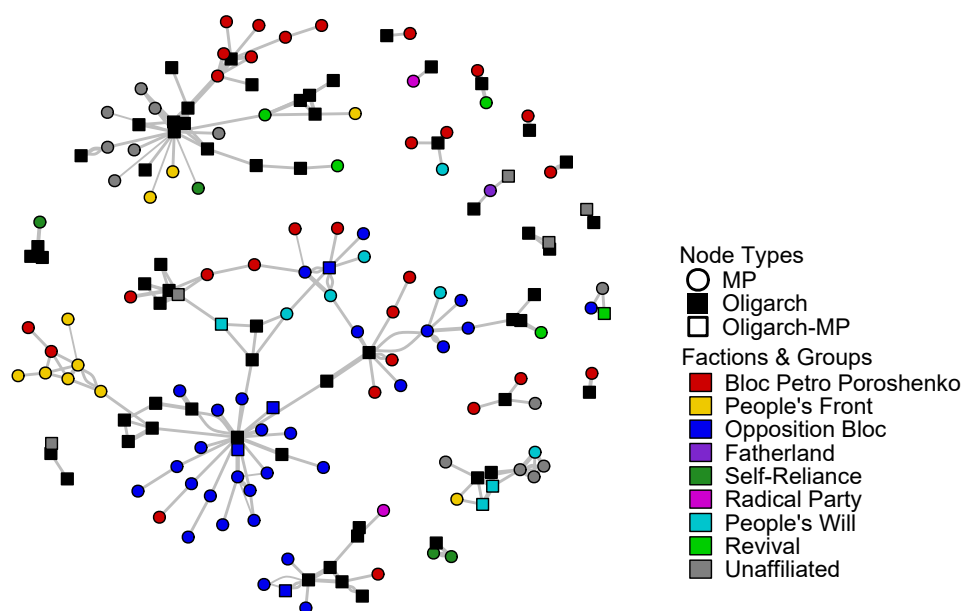


Figure F9: VR8 Network by Party Affiliation

The figure shows the network in Figure 1, Panel a by longest parliamentary faction/deputy group affiliation.

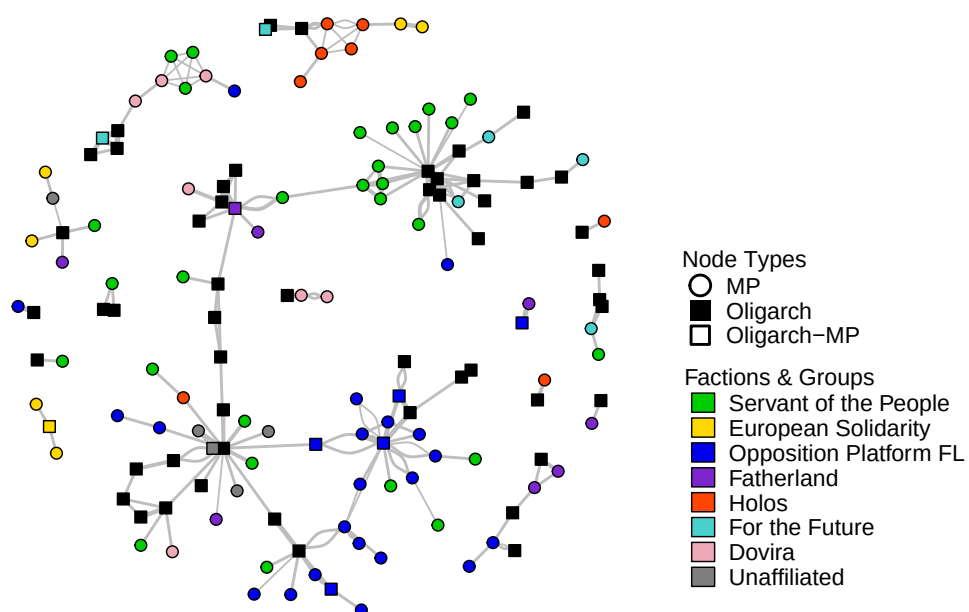


Figure F10: VR9 Network by Party Affiliation

The figure shows the network in Figure 1, Panel b by longest parliamentary faction/deputy group affiliation up until Russia's full-scale invasion on 24 February 2022.

G Descriptive Statistics

Variable	N	Mean	SD	Min	Max
Vote choice: in favor	26123	0.75	0.43	0	1
Loyalist deputy	26123	0.20	0.40	0	1
Oligarch deputy	26123	0.02	0.14	0	1
SMD deputy	26123	0.45	0.50	0	1
Former deputy	26123	0.32	0.47	0	1
Government	26123	0.68	0.47	0	1
Female	26123	0.12	0.33	0	1
Age	26123	45.35	9.57	24	85
Reform score	26123	1.76	1.35	-2	6.5
Faction (omitted category: Bloc Petro Poroshenko)					
Fatherland	26123	0.04	0.19	0	1
People's Front	26123	0.21	0.41	0	1
Opposition Bloc	26123	0.08	0.28	0	1
Radical Party	26123	0.05	0.22	0	1
Self-Reliance	26123	0.07	0.25	0	1
Economic Development	26123	0.00	0.06	0	1
Revival	26123	0.05	0.21	0	1
People's Will	26123	0.04	0.19	0	1
Unaffiliated	26123	0.09	0.28	0	1
Year (omitted category: year2014)					
year2015	26123	0.50	0.50	0	1
year2016	26123	0.26	0.44	0	1
year2017	26123	0.18	0.38	0	1
year2018	26123	0.05	0.22	0	1

Table G2: Descriptive Statistics, Regression Models, VR8

The table presents descriptive statistics on the variables used to estimate the regression models in Tables 3 and H6. Note that the possible values on reform score that a bill can take range from -5 to 5 for a single reform dimension. For the combined dataset of 76 reform bills, two affected both anti-corruption reform and public procurement reform and received separate scores on each dimension. The scores were added up when estimating the regression models, hence the maximum reform score of 6.5 in this table.

Variable	N	Mean	SD	Min	Max
Vote choice: in favor	15147	0.75	0.43	0	1
Loyalist deputy	15147	0.19	0.39	0	1
Oligarch deputy	15147	0.02	0.13	0	1
SMD deputy	15147	0.53	0.50	0	1
Former deputy	15147	0.17	0.37	0	1
Female	15147	0.21	0.40	0	1
Age	15147	42.57	9.23	23	81
Reform score	15147	0.92	0.98	-2	2.5
Faction (omitted category: Servant of the People)					
Faction: Fatherland	15147	0.05	0.21	0	1
Faction: Dovira	15147	0.03	0.18	0	1
Faction: European Solidarity	15147	0.07	0.25	0	1
Faction: Holos	15147	0.05	0.21	0	1
Faction: Opposition Platform FL	15147	0.09	0.28	0	1
Faction: For the Future	15147	0.05	0.22	0	1
Faction: Unaffiliated	15147	0.05	0.22	0	1
Year (omitted category: year2019)					
year2020	15147	0.19	0.39	0	1
year2021	15147	0.40	0.49	0	1

Table G3: Descriptive Statistics, Regression Models, VR9

The table presents descriptive statistics on the variables used to estimate the regression models in Tables 4 and H8. For the combined dataset of 36 reform bills, one affected both competition and public procurement reform and received separate scores on each dimension. The scores were added up to an overall score of -1.5 when estimating the regression models.

H Additional Results

	Anti-Corruption	Public Procurement	Competition	Combined
(Intercept)	0.40*** (0.03)	0.76*** (0.05)	0.59*** (0.04)	0.54*** (0.03)
Loyalist deputy	0.02 (0.02)	0.04 (0.05)	0.02 (0.03)	0.03 (0.02)
Oligarch deputy	-0.06 (0.07)	-0.02 (0.15)	-0.07 (0.07)	-0.07 (0.06)
Faction: Fatherland	0.10*** (0.02)	0.14*** (0.03)	0.05 (0.03)	0.08*** (0.02)
Faction: People's Front	0.05*** (0.01)	0.08*** (0.02)	0.05** (0.02)	0.05*** (0.01)
Faction: Opposition Bloc	-0.26*** (0.03)	-0.52*** (0.05)	-0.12** (0.04)	-0.27*** (0.03)
Faction: Radical Party	-0.06** (0.02)	0.05 (0.04)	0.05* (0.02)	-0.03 (0.02)
Faction: Self-Reliance	0.01 (0.02)	0.15*** (0.03)	0.07* (0.03)	0.03 (0.02)
Faction: Economic Development	0.05 (0.09)		-0.47*** (0.09)	-0.09 (0.08)
Faction: Revival	0.04 (0.04)	-0.37*** (0.06)	-0.04 (0.05)	-0.03 (0.04)
Faction: People's Will	0.16*** (0.03)	-0.12 (0.07)	-0.01 (0.05)	0.07* (0.03)
Faction: Unaffiliated	0.18*** (0.03)	-0.05 (0.05)	0.06 (0.04)	0.11*** (0.03)
SMD deputy	0.00 (0.01)	-0.04 (0.02)	0.01 (0.02)	0.00 (0.01)
Former deputy	-0.02 (0.01)	-0.02 (0.02)	-0.04* (0.02)	-0.02 (0.01)
Government	0.40*** (0.02)	0.05 (0.03)	0.26*** (0.03)	0.31*** (0.01)
Reform score	0.02*** (0.00)	0.01 (0.01)	0.01* (0.01)	0.02*** (0.00)
Loyalist deputy x Reform score	-0.03*** (0.01)	-0.03 (0.02)	-0.02 (0.01)	-0.03*** (0.01)
Oligarch deputy x Reform score	-0.00 (0.02)	-0.09 (0.06)	-0.07 (0.04)	-0.02 (0.02)
Year fixed effects	Yes	Yes	Yes	Yes
R ²	0.25	0.23	0.14	0.21
Adj. R ²	0.25	0.23	0.14	0.21
Num. obs.	17630	2690	6468	26123

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table H4: Main Regression Results by Bill Type, VR8

The table reports the results from OLS regression estimations (Model 3 in Table 3) of vote choice on reform bills by bill type—anti-corruption ($N = 51$), public procurement ($N = 8$), competition policy ($N = 19$), and combined ($N = 76$). Robust standard errors are clustered at the deputy level.

	Anti-Corruption	Public Procurement	Competition	Combined
(Intercept)	0.91*** (0.01)	1.04*** (0.02)	0.87*** (0.02)	0.92*** (0.01)
Loyalist deputy	0.00 (0.02)	0.05 (0.03)	0.03 (0.02)	0.01 (0.02)
Oligarch deputy	-0.05 (0.07)	0.11 (0.13)	0.01 (0.13)	-0.02 (0.07)
Faction: Fatherland	-0.46*** (0.02)	-0.42*** (0.04)	-0.50*** (0.03)	-0.47*** (0.02)
Faction: Dovira	-0.08** (0.03)	-0.27*** (0.04)	-0.00 (0.03)	-0.09*** (0.02)
Faction: European Solidarity	-0.43*** (0.02)	-0.15*** (0.03)	-0.47*** (0.02)	-0.40*** (0.01)
Faction: Holos	-0.26*** (0.02)	-0.18*** (0.03)	-0.58*** (0.03)	-0.29*** (0.02)
Faction: Opposition Platform FL	-0.73*** (0.02)	-0.82*** (0.02)	-0.72*** (0.02)	-0.76*** (0.01)
Faction: For the Future	-0.38*** (0.03)	-0.45*** (0.04)	-0.28*** (0.04)	-0.38*** (0.03)
Faction: Unaffiliated	-0.39*** (0.04)	-0.34*** (0.06)	-0.36*** (0.05)	-0.38*** (0.04)
SMD deputy	0.03** (0.01)	0.01 (0.01)	0.00 (0.01)	0.02** (0.01)
Former deputy	-0.05* (0.02)	-0.04 (0.03)	-0.05* (0.02)	-0.05* (0.02)
Reform score	-0.00 (0.00)	-0.05*** (0.01)	-0.08*** (0.01)	-0.01 (0.00)
Loyalist deputy x Reform score	-0.04** (0.01)	-0.07** (0.02)	-0.04 (0.03)	-0.04** (0.01)
Oligarch deputy x Reform score	-0.07* (0.04)	-0.15* (0.07)	-0.07 (0.14)	-0.08* (0.03)
Year fixed effects	Yes	Yes	Yes	Yes
R ²	0.40	0.45	0.47	0.38
Adj. R ²	0.40	0.45	0.46	0.38
Num. obs.	10056	2547	2901	15147

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table H5: Main Regression Results by Bill Type, VR9

The table reports the results from OLS regression estimations (Model 3 in Table 4) of vote choice on reform bills by bill type—anti-corruption ($N = 25$), public procurement ($N = 6$), competition policy ($N = 6$), and combined ($N = 36$). Robust standard errors are clustered at the deputy level.

	Model 1	Model 2	Model 3	Model 4
(Intercept)	1.57*** (0.13)	1.90*** (0.14)	0.05 (0.19)	0.23 (0.24)
Loyalist deputy	-0.67*** (0.12)	0.20 (0.12)	0.18 (0.11)	0.18 (0.11)
Oligarch deputy	-1.39*** (0.28)	-0.22 (0.24)	-0.27 (0.25)	-0.24 (0.25)
Reform score	0.10*** (0.01)	0.11*** (0.02)	0.11*** (0.02)	0.11*** (0.02)
Loyalist deputy x Reform score	-0.15*** (0.03)	-0.19*** (0.04)	-0.17*** (0.03)	-0.17*** (0.03)
Oligarch deputy x Reform score	-0.12 (0.08)	-0.15* (0.08)	-0.12 (0.08)	-0.12 (0.08)
Faction: Fatherland		-0.39** (0.12)	0.56*** (0.14)	0.57*** (0.14)
Faction: People's Front		0.47*** (0.11)	0.48*** (0.11)	0.47*** (0.11)
Faction: Opposition Bloc		-2.71*** (0.12)	-0.97*** (0.15)	-0.98*** (0.15)
Faction: Radical Party		-0.85*** (0.09)	-0.09 (0.11)	-0.11 (0.11)
Faction: Self-Reliance		-0.54*** (0.09)	0.23 (0.12)	0.23 (0.12)
Faction: Economic Development		-2.09*** (0.33)	-0.13 (0.34)	-0.14 (0.34)
Faction: Revival		-1.73*** (0.14)	0.05 (0.17)	0.05 (0.17)
Faction: People's Will		-1.31*** (0.14)	0.47** (0.16)	0.46** (0.16)
Faction: Unaffiliated		-1.11*** (0.12)	0.61*** (0.15)	0.60*** (0.15)
SMD deputy			0.02 (0.09)	0.00 (0.09)
Former deputy			-0.16 (0.09)	-0.14 (0.08)
Government			1.73*** (0.09)	1.73*** (0.09)
Female				-0.11 (0.10)
Age				-0.00 (0.00)
Year fixed effects	Yes	Yes	Yes	Yes
AIC	28484.93	25019.52	24562.61	24559.25
BIC	28566.64	25174.76	24742.36	24755.34
Log Likelihood	-14232.47	-12490.76	-12259.31	-12255.62
Deviance	28464.93	24981.52	24518.61	24511.25
Num. obs.	26123	26123	26123	26123

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table H6: Additional Regression Results, VR8

The table reports the results from logistic regression estimations of vote choice on reform bills related to anti-corruption, public procurement, and competition policy combined ($N = 76$). Robust standard errors are clustered at the deputy level.

	Anti-Corruption	Public Procurement	Competition	Combined
(Intercept)	−0.83*** (0.16)	0.76 (0.39)	0.25 (0.26)	0.05 (0.19)
Loyalist deputy	0.17 (0.14)	0.26 (0.31)	0.14 (0.16)	0.18 (0.11)
Oligarch deputy	−0.25 (0.33)	−0.10 (0.77)	−0.22 (0.31)	−0.27 (0.25)
Faction: Fatherland	0.61*** (0.15)	1.39*** (0.37)	0.38 (0.22)	0.56*** (0.14)
Faction: People’s Front	0.47*** (0.13)	0.59** (0.18)	0.42** (0.13)	0.48*** (0.11)
Faction: Opposition Bloc	−1.05*** (0.16)	−2.00*** (0.40)	−0.23 (0.24)	−0.97*** (0.15)
Faction: Radical Party	−0.31* (0.12)	0.56 (0.37)	0.41* (0.18)	−0.09 (0.11)
Faction: Self-Reliance	0.04 (0.13)	1.61*** (0.42)	0.51* (0.20)	0.23 (0.12)
Faction: Economic Development	0.50 (0.38)		−2.58* (1.08)	−0.13 (0.34)
Faction: Revival	0.37* (0.18)	−1.15** (0.43)	0.11 (0.27)	0.05 (0.17)
Faction: People’s Will	0.88*** (0.18)	−0.09 (0.45)	0.21 (0.28)	0.47** (0.16)
Faction: Unaffiliated	0.95*** (0.17)	0.20 (0.39)	0.48* (0.24)	0.61*** (0.15)
SMD deputy	0.03 (0.10)	−0.25 (0.14)	0.08 (0.11)	0.02 (0.09)
Former deputy	−0.15 (0.09)	−0.14 (0.14)	−0.22* (0.10)	−0.16 (0.09)
Government	2.19*** (0.11)	0.66* (0.34)	1.53*** (0.18)	1.73*** (0.09)
Reform score	0.18*** (0.02)	0.07 (0.05)	0.09* (0.04)	0.11*** (0.02)
Loyalist deputy x Reform score	−0.18*** (0.05)	−0.18 (0.11)	−0.15* (0.07)	−0.17*** (0.03)
Oligarch deputy x Reform score	−0.06 (0.10)	−0.44 (0.33)	−0.36* (0.17)	−0.12 (0.08)
Year fixed effects	Yes	Yes	Yes	Yes
AIC	15614.92	2557.80	6556.78	24562.61
BIC	15778.24	2669.85	6705.82	24742.36
Log Likelihood	−7786.46	−1259.90	−3256.39	−12259.31
Deviance	15572.92	2519.80	6512.78	24518.61
Num. obs.	17630	2690	6468	26123

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table H7: Additional Regression Results by Bill Type, VR8

The table reports the results from logistic regression estimations of vote choice on reform bills by bill type—anti-corruption ($N = 51$), public procurement ($N = 8$), competition policy ($N = 19$), and combined ($N = 76$). The model specification is the same as in Model 3 in Table H6. Robust standard errors are clustered at the deputy level.

	Model 1	Model 2	Model 3	Model 4
(Intercept)	1.32*** (0.09)	2.64*** (0.07)	2.52*** (0.08)	2.55*** (0.16)
Loyalist deputy	-0.92*** (0.16)	0.03 (0.12)	0.04 (0.12)	0.04 (0.12)
Oligarch deputy	-2.36*** (0.21)	-0.25 (0.36)	-0.20 (0.37)	-0.18 (0.37)
Reform score	-0.05* (0.03)	-0.07 (0.04)	-0.07 (0.04)	-0.07 (0.04)
Loyalist deputy x Reform score	-0.15* (0.06)	-0.24* (0.11)	-0.24* (0.11)	-0.24* (0.11)
Oligarch deputy x Reform score	-0.44* (0.22)	-0.48 (0.25)	-0.49* (0.25)	-0.49* (0.25)
Faction: Fatherland		-2.90*** (0.09)	-2.92*** (0.10)	-2.90*** (0.11)
Faction: Dovira		-1.26*** (0.14)	-1.01*** (0.15)	-1.00*** (0.15)
Faction: European Solidarity		-2.65*** (0.07)	-2.63*** (0.09)	-2.63*** (0.10)
Faction: Holos		-2.03*** (0.09)	-2.13*** (0.11)	-2.14*** (0.11)
Faction: Opposition Platform FL		-4.39*** (0.11)	-4.43*** (0.12)	-4.42*** (0.12)
Faction: For the Future		-2.62*** (0.13)	-2.36*** (0.14)	-2.36*** (0.14)
Faction: Unaffiliated		-2.56*** (0.18)	-2.40*** (0.18)	-2.40*** (0.19)
SMD deputy			0.27** (0.10)	0.26** (0.10)
Former deputy			-0.21* (0.08)	-0.20* (0.08)
Female				0.06 (0.07)
Age				-0.00 (0.00)
Year fixed effects	Yes	Yes	Yes	Yes
AIC	15852.31	11260.61	11234.82	11237.64
BIC	15913.31	11374.99	11364.46	11382.52
Log Likelihood	-7918.15	-5615.30	-5600.41	-5599.82
Deviance	15836.31	11230.61	11200.82	11199.64
Num. obs.	15147	15147	15147	15147

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table H8: Additional Regression Results, VR9

The table reports the results from logistic regression estimations of vote choice on reform bills related to anti-corruption, public procurement, and competition policy combined ($N = 36$). Robust standard errors are clustered at the deputy level.

	Anti-Corruption	Public Procurement	Competition	Combined
(Intercept)	2.67*** (0.10)	4.31*** (0.30)	2.47*** (0.16)	2.52*** (0.08)
Loyalist deputy	−0.02 (0.13)	0.36 (0.32)	0.25 (0.19)	0.04 (0.12)
Oligarch deputy	−0.26 (0.33)	0.61 (0.63)	0.00 (0.78)	−0.20 (0.37)
Faction: Fatherland	−3.30*** (0.13)	−3.08*** (0.26)	−3.34*** (0.23)	−2.92*** (0.10)
Faction: Dovira	−1.27*** (0.24)	−2.36*** (0.28)	0.01 (0.32)	−1.01*** (0.15)
Faction: European Solidarity	−3.18*** (0.12)	−1.76*** (0.24)	−3.12*** (0.19)	−2.63*** (0.09)
Faction: Holos	−2.37*** (0.15)	−1.93*** (0.24)	−3.86*** (0.20)	−2.13*** (0.11)
Faction: Opposition Platform FL	−4.60*** (0.15)	−5.47*** (0.25)	−5.15*** (0.23)	−4.43*** (0.12)
Faction: For the Future	−2.67*** (0.16)	−3.13*** (0.26)	−1.93*** (0.27)	−2.36*** (0.14)
Faction: Unaffiliated	−2.70*** (0.18)	−2.70*** (0.32)	−2.45*** (0.31)	−2.40*** (0.18)
SMD deputy	0.41** (0.13)	0.11 (0.21)	0.03 (0.12)	0.27** (0.10)
Former deputy	−0.19* (0.09)	−0.22 (0.15)	−0.38* (0.16)	−0.21* (0.08)
Reform score	−0.03 (0.04)	−0.64*** (0.10)	−1.03*** (0.14)	−0.07 (0.04)
Loyalist deputy x Reform score	−0.24* (0.10)	−0.42 (0.24)	−0.16 (0.28)	−0.24* (0.11)
Oligarch deputy x Reform score	−0.43 (0.22)	−1.19 (0.80)	−1.50 (1.05)	−0.49* (0.25)
Year fixed effects	Yes	Yes	Yes	Yes
AIC	6722.34	1564.26	2123.66	11234.82
BIC	6845.01	1663.58	2225.19	11364.46
Log Likelihood	−3344.17	−765.13	−1044.83	−5600.41
Deviance	6688.34	1530.26	2089.66	11200.82
Num. obs.	10056	2547	2901	15147

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

Table H9: Additional Regression Results by Bill Type, VR9

The table reports the results from logistic regression estimations of vote choice on reform bills by bill type—anti-corruption ($N = 25$), public procurement (6 unique bills), competition policy ($N = 6$ unique bills), and combined ($N = 36$). The model specification is the same as in Model 3 in Table H8. Robust standard errors are clustered at the deputy level.