

Corruption and Property Rights in Russia: Evidence from the Commercial Court System

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Abstract

Corruption is often rampant within state bureaucracies and judicial systems, yet we know little about its micro-level consequences on policymaking and the provision of public goods. In this paper, we investigate how corruption undermines the rule of law and property rights protection in one prominent autocracy: Russia. First, we use income and asset disclosures to create unique individual-level measures of corruption for 360 Commercial court judges working in and around Moscow. We then exploit the fact that judges are randomly assigned to court cases using data on nearly 2 million decisions from 2011-2018. Our results show that corrupt judges are more likely to find in favor of wealthier litigants, back private firms in their disputes with government agencies, and exercise haste in passing down decisions. Corruption can exacerbate market consolidation and inequality by shoring up the property rights of only the select connected few.

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What are the governance costs of corruption? Even if pursuing their private interest guides their time in office, corrupt public officials still must legislate, implement policy and provide public goods. Perhaps surprisingly, we know little about the aggregate consequences of corruption within bureaucracy, particularly how the drive for personal gain affects the specific decisions officials make about distributional outcomes. Work in economics, for example, has calculated the welfare and efficiency losses of misappropriating budget funds from education and infrastructure (Ferraz, Finan, and Moreira, 2012; Olken, 2007). But in many political settings, corrupt officials thrive not from their access to government coffers, but their authority in relations with citizens and businesses. When and how do opportunities for self-enrichment affect governance and the rule of law?

This paper introduces several new datasets on individual officialdom in Russia to investigate the relationship between corruption and bureaucratic performance. Answering this question raises several thorny empirical challenges, perhaps partially explaining the minimal progress in the literature so far. What we know about the political and economic costs of corruption often cannot account for the fact that not only is corruption often very difficult hard to measure, but it is also endogenous to other antecedents of governance quality (Olken and Pande, 2012). Individuals inclined towards self-enrichment often self-select into the public service, and in particular specific agencies, institutions, and roles (Banerjee, Baul, and Rosenblat, 2015). This can undermine the task of cleanly measuring how different types of bureaucrats perform their jobs. This paper introduces a new approach to tackling both problems. First we generate novel measures of corruption at the individual level, and next exploit a robust identification strategy to overcome endogeneity related to measuring individual effects on policy outcomes.

Our data comes from the Russian Commercial court system. No matter the institutional setting, commercial and trading disputes are a staple of doing business. Disputes vary widely, from contract obligations with suppliers going unmet, aggressive competitors orchestrating hostile raids or takeovers, or rapacious bureaucrats burdening firms with regulatory demands. In many countries, governments have invested heavily in commercial courts as a mechanism for resolving such disputes, adjudicating property claims, and more generally enforcing private rights (Pistor, 1996). Acting as neutral third-parties, Commercial courts hear cases involving both private disputes between commercial enterprises, disputes between companies and government agencies, and bankruptcy cases (Hendley, 1998). In Russia, firms have increasingly turned to litigation to resolve their problems (rather than relying on private enforcement methods such as violence, e.g. Gans-Morse (2017)). By the mid 2010s, some commentators have even gone as far lauding Russia's commercial court system as among "the very best of the post-Soviet legal

system” (Pomeranz and Rojansky, 2014). Though still imperfect and marked by significant corruption and political capture, Commercial courts are among the most important political institutions backing investment and the broader business environment (Frye, 2017).

To study the Commercial courts’ operations, we first assign corruption probabilities to individual judges using a brand new dataset on public income and asset declarations. Since 2008, the Russian government has required nearly every elected and appointed public official, including Commercial court judges, to annually report all income, real estate and transportation assets for themselves, their spouses and dependent children earned over the previous year. We collect, parse, and standardize these disclosures for all 360 commercial court judges in Moscow and Moscow region and develop a new measure of judges’ hidden earnings based on methods developed using similar Russian data (Braguinsky, Mityakov, and Liscovich, 2014). Greater transparency requirements alone may not be enough to compel officials to honestly report their personal wealth. Therefore we are currently developing several approaches for validating the disclosure data against both official asset registries and actual investigations.

Second, the Commercial court system is a unique setting where government officials are randomly assigned to make policy decisions. This exogeneity allows us to study the effect of individual traits (such as corruption) on case outcomes. We collect complete data on 1.8 million cases adjudicated by these judges in Moscow and Moscow region from 2011-2018. In addition, we bring together a number of datasets related to cases and litigants involved (firms, government agencies, etc.). Building off the extensive literature studying similar processes in US court systems, our identification strategy exploits the random assignment of cases to judges to investigate whether specific judge characteristics affect which and how decisions are handed down. We develop a simple theoretical framework to derive predictions about how cases heard by corrupt judges may turn out differently than those heard by those not so concerned with personal profit.

Our results show first that in case between private companies, corrupt judges are first more likely to find in favor of the wealthier litigant. We argue this pattern reflects corrupt judges privileging the interest of the party most willing to pay the largest bribe to secure its favored ruling. Related, we show that corrupt judges are more likely to find in favor of private firms in their disputes with government agencies, another indicator of private firms being able to undermine the process by offering bribes (and where their opponents likely cannot). One empirical implication of this preferential treatment is that corrupt judges also exercise haste in passing down decisions. We do not however find evidence that decisions entered by corrupt judges are more likely to be overturned in appeals court.

A corrupt decision entered on the first instance may become permanently entered into the court record, with the losing party having little recourse to overturn it.

These results are among the first to directly connect personal corruption motives with the administration of property rights. By opening the black box of a central economic institution, we show how key building blocks of market capitalism, such as contract enforcement and tax collection, can be undermined by individual judges seeking bribes. We extend micro-level level on corruption among bankers (Weill, 2011), bureaucrats (Bertrand et al., 2007), CEOs (Mironov, 2015), and elected officials (Eggers and Hainmueller, 2009; Fisman, Schulz, and Vig, 2014) to include work on the judicial branch, which has not received the same degree of scholarly attention. Importantly our findings contrast with popular accounts of judicial corruption in Russia that posit the importance of ‘telephone justice’, whereby higher-level officials pressure judges, including those working in Commercial courts, to pass certain rulings (Ledeneva, 2008). Our results instead show that corrupt judges rule against the government more often, suggesting that the vertical political hierarchy is not so strong as to prevent private actors from influencing the judicial system for their own ends. Judges may be pursuing profit and personal ambitions without direction from above, and seeing financial windfalls accrue to their families from catering to private companies that make the most attractive offers.

By helping larger firms win disputes against their rivals and the government, corrupt judges may be contributing to the market consolidation and firm inequality that has produced such a drag on economic growth in Russia (Di Bella, Dynnikova, and Slavov, 2019). The evidence suggests some commercial court judges in Russia are privileging the property rights of a select powerful few, undermining the judiciary’s ability to contribute to fair and equitable development (Chemin, 2009). Our work is most similar to Lambert-Mogiliansky, Sonin, and Zhuravskaya (2007) who find that regional commercial court quality in Russia affects firm performance after reorganization procedures are completed, and (Shvets, 2013) who show that banks change their lending behavior based on perceived judicial quality. In the conclusions, we discuss future directions of research we will pursue to better understand the downstream consequences of judicial corruption for firm performance.

1 Theoretical Framework

Unpacking how corruption affects about judges’ decision making first requires tracing how illicit money enters the judicial system. We assume that the primary mechanism through which corruption operates is through bribes paid by different litigants on the

case to the judge in charge. Commercial court judges extract rents from their office not from siphoning off funds from state budgets (Liu and Mikesell, 2014) or taking personal ownership stakes in companies (Szakonyi, 2020), but by accepting money in exchange for passing preferential decisions.

A review of journalistic accounts of corruption in the Russian Commercial court systems helps corroborates this assumption. One experienced lawyer likened the corruption to an efficient market, with an average bribe paid of 25,000 Euros, but total sums exchanged reaching the hundreds of millions of dollars.¹ Intermediaries – often judges’ relatives and close friends – facilitate the payments, helping litigants (plaintiffs, defendants, etc.) make an offer, usually as a percentage of the amount of the claim, to the judge in exchange for the desired ruling. Judges rarely demand specific sums, but instead can entertain several offers and enter into an agreement (sometimes informal, sometimes written down) through the intermediary with the chosen litigant. In some cases, judges actually meet in person with the potential clients operating on the principle of ‘whoever brings the most money will win the case.’² A single bribe in an important case can equal the official annual income of a judge.

These media accounts align with the small number of anecdotes we have from criminal cases against commercial court judges brought about by law enforcement officials. A commercial court judge in Sverdldodsk Oblast was sent to seven and a half years in prison for accepting 14 million rubles (\$350,000) in bribes through his son to help commercial firms win cases.³ Another case from Moscow Oblast accused two judges of helping fake companies win large VAT refunds; the case was ultimately overturned by a higher appellate court’s decision.⁴ Moscow Commercial court Judge Irina Baranova fled to the United States after being accused to accepting over 100 thousand Euros in exchange for helping a company orchestrate a hostile takeover (raid) of a valuable building in the center of Moscow.⁵ However, only a small percentage of corruption is ever uncovered by law enforcement officials.

We treat the corruption in the adjudication process as conforming most closely to an auction. Corrupt judges review the bids submitted in the form of bribes by litigants and hand down the ruling preferred by the highest bidder. Although our data does not allow

¹Remeslo, Ivan ‘Korruptsiya v Sudax: Vzglyad Praktikuyushhego Yurist’ *Ekho Moskvy*, July 19, 2014.

²Quote from a letter sent by Chairperson of the Council of Judges Yuri Sidorenko to the Russian FSB (equivalent the US FBI) documenting corruption in the Moscow Oblast Commercial court system. Reported in Regnum, May 3, 2012

³Lukmanov, Aleksandr. ‘Sledovateli Nashli Dokazatsva v Dele o Vzyatke Sudi Arbitrazhnogo Suda Sverdlovskoy Oblasti’ *Ura.Ru* August 28, 2019

⁴Klerk. ‘Uvolen Sudya, Prinimavshiy Resheniye v Polzu Nalogoplatelshikov’ November 28, 2016

⁵Polataev, Vladimir. ‘Sudya pod Arestom.’ *Rossiskaya Gazeta*, May 30, 2018.

us to observe the size of bribes offered, we can observe characteristics of the litigants and infer their ability to pay through their financial records. For disputes between privately owned firms, we expect that litigants with greater revenue will be more likely to win if a corrupt judge is assigned to their case. For example, for all cases involving relatively small-sized plaintiffs and relatively large defendants, more corrupt judges would be on average, and holding other characteristics constant, more likely to find in favor of the defendant. On the other hand, less corrupt judges would see a more even distribution of outcomes between small and large litigants.

Hypothesis 1. *In cases involving private firms, corrupt judges will ceteris paribus be more likely to find in favor of better resourced litigants.*

If money does indeed talk, we should also expect that corrupt judges will be more receptive to the interests of litigants in their disputes with government agencies, for example over unpaid tax bills or VAT refunds. Although state officials may be able to place other types of pressure on judges to make sure their investigations are properly heard, few have such vested interests that they would be able to offer large monetary sums to offset the bribes proposed by private litigants. Corrupt judges may also be particularly hesitant to accept monetary overtures from state officials, considering the perhaps higher risk of connected law enforcement officials finding out about this illegal activity. Therefore, we expect corrupt judges to exhibit differential decision-making patterns in public-private disputes, and in particular when the private firm litigant has substantial resources to expend.

Hypothesis 2. *In cases involving private firms and government agencies, corrupt judges will ceteris paribus be more likely to find in favor of private firms, especially those with greater financial resources.*

Corrupt judges have many levers at the disposal to tip a case in one litigant's favor, and if corruption is operating as theorized, we should uncover procedural differences in cases heard by corrupt versus non-corrupt judges. First, bribes should speed up the adjudication process, as judges come to a quicker conclusion on a case's merits (based on the money they receive) and block attempts by the losing litigant to submit evidence and compel a fair, full hearing. Even controlling for case complexity, a bribe offered and accepted should 'grease the wheels' of judicial administration.⁶

⁶We acknowledge that there may be some instances where the bribing litigant may prefer a delayed ruling in order to shore up some other strategy while the case remains in limbo. However, on average, bribes should lead to quicker deliberations and more preferential treatment for the bribing litigant.

Hypothesis 3. *Cases assigned to corrupt judges will ceteris paribus be completed over shorter time frames.*

Next, the offering and accepting of bribes should make it less likely that cases result in partial or settled outcomes where one litigant does not completely emerge victorious. The rationale is that the bribing litigant is paying a substantial and illegal sum of money with the expectation of a full return on their investment. Presumably winning a partial verdict is a sign that the judge correctly acknowledged some nuance in the case and did not fully back the interests of one litigant or the other. In addition, unlike criminal cases where negotiated settlements are often the product of undue pressure from the government on defendants, a negotiated settlement in commercial court cases is often a strong signal that the different sides were able to amicably come to an agreement before the judge rendered his or her verdict. Bribing litigants would prefer rulings be actually handed down by the judges they have paid off.

Hypothesis 4. *Cases assigned to corrupt judges will ceteris paribus be less likely to result in partial verdicts or negotiated settlements.*

Overall, we expect that corrupt judges will return lower quality decisions that do not stand up to increased scrutiny and are biased towards one litigant, presumably the one paying the bribe. One way to test that expectation is to examine whether the verdict is appealed, and then upheld in higher level appellate courts. Successful appeals often indicate that more experienced judges (and in the case of Russia a panel rather than an individual) found significant issue with a lower court ruling and overturned.

Hypothesis 5. *Cases assigned to corrupt judges will ceteris paribus be more likely to be overturned on appeal.*

2 Data and Measurement

To some, Russia's judicial system may seem an unlikely candidate for accurately measuring the impact of corrupt behavior on governance. Yet whereas access to data in most settings with widespread corruption is limited, Russia enacted transparency measures in the 2000s that made Commercial court decisions publicly available to a degree rarely found even in Europe or North America.⁷ Complete data on roughly twelve million commercial and bankruptcy cases filed from 2011 to 2018 is stored on a publicly accessible

⁷Russia's Commercial courts (*arbitrazhnye sudy*) are specialized courts that only hear inter-firm disputes or disputes between firms and state agencies. Criminal cases and civil cases involving individual litigants are heard in the courts of general jurisdiction.

website KAD (kad.arbitr.ru).⁸ Not only can the litigants to each case be identified and matched to external datasets, but the courts provide detailed information on the judges assigned, hearings held, and every document, decision, and enforcement of the entire litigation process, from filing to final appeal. Russia's Commercial court system is hierarchically structured, with 84 1st instance courts located in each of Russian's regions, 21 appellate courts, 10 district courts (1st cassation instance), and then two higher courts located within the Supreme Court (Bocharov and Titaev, 2018). Case rise up the ladder on appeal, though scholars have noted the different levels of courts are functionally independent from one another.

Next, in order to more precisely measure corruption at the individual level, we focus only on cases heard in the two Commercial courts of the 1st instance representing the city of Moscow and the Moscow region, respectively. Only in these two regions do we have access to much more detailed information on judges and their personal wealth. Because Moscow and its surrounding region account for such a disproportionate part of Russia's economy, we are still left with roughly 12% of our original sample, or 2,044,907 cases. Because all analysis is done at the case level, each observation is a case filed at one of these two 1st instance courts, though we code up appellate outcomes.

We then take several steps to narrow the data further to fit our precise research aims. First, we are interested in the effect of corruption on 'civil' disputes between firms and 'administrative' disputes between firms and the government. Therefore, we exclude the 2.2% of cases that involve bankruptcy claims or court orders. To ensure we can draw a direct line for individual officials to case outcomes, we restrict to only cases overseen by a single judge for whom we have basic biographic and income data. This excludes mainly cases where judges were substituted in over the course of proceedings as well as those who submitted limited documentation.⁹ We are left with 1,818,772 cases heard by 360 unique judges, each of whom we required to have overseen at least 100 cases during their time in the position. For the sake of simplicity, we refer collectively to the plaintiffs, respondents, third parties, and other parties connected to the case as 'litigants.' We begin by operationalizing background data on the judges before bringing in the rest of the case data to assess randomization and conduct the analysis.

⁸We restrict our end date to 2018 so as to ensure that complete data on all cases had been entered at the time of scraping in early 2021. Since some cases can last over two years, for consistency we only use those that began in 2018.

⁹Future versions of the paper will check the reasons behind these changes

2.1 Background on Commercial Court Judges

Commercial court judges take office after passing a stringent application process.¹⁰ Candidates for judgeships must be 25 years of age, hold a university law degree, and possess at least five years of legal experience. Applicants must first pass a judicial exam and submit a series of documents to the regional judicial qualifying board (*kvalifikatsionnye kollegii sudej*). More recent reforms required documents including certificates of income and assets for the applicant as well as his or her spouse, parents, and adult children, as discussed in more detail below. At monthly meetings, judicial qualifying boards then evaluate and nominate their preferred candidates.¹¹

Formally, the Russian judicial corps is a self-governing body, with the judicial qualifying boards, which are comprised of judges, playing the lead role in selecting, promoting, and disciplining members of the judiciary. Court chairmen also exert significant influence over the selection process, encouraging certain candidates to apply, submitting letters of support on the behalf of favored candidates, and participating in judicial qualifying board meetings. Yet while the institutions of self-governance are intended to preserve judicial independence, non-judicial actors such as representatives of the Presidential Administration and top law enforcement officials now sit on and influence decisions of the presidential commission that officially confirms judicial qualifying boards' nominations. In recent years the commission has wielded significant power in the judicial appointment process, rejecting as many as 1 in 4 nominations (Dzmitryieva, 2021, 134-135).

As in many countries with civil law traditions, the Russian judicial system largely resembles a "career judiciary." Legal professionals aspiring to the bench frequently work within the court apparatus as a judge's assistant or a court clerk. Most judges spend their entire careers within the judicial apparatus, seeking promotions within their court or to higher courts. This stands in contrast to the "recognition judiciary" model characteristic of Anglo-American common law systems, in which judges are appointed or elected at later phases in their career, usually based on their accomplishments as a practicing lawyer or legal academic (Georgakopoulos, 2000). Accordingly, judges in Russia often rise to the bench at a relatively young age. In our sample of judges from the Moscow City and Moscow Oblast commercial courts, the average judge was appointed at the age of 36, with some judges receiving appointments as early as age 26.¹²

¹⁰Russia's 1993 Constitution establishes the prerequisites for judicial appointees, with further details provided by two federal laws, the Law 'On the Judicial System' and the Law 'On the Status of Judges in the Russian Federation.'

¹¹For details of the selection process, see Volkov et al. (2015, 107-114) and Dzmitryieva (2021, 136-137).

¹²Five judges in the sample joined the bench while still 25 years of age or younger, but all of these were appointed during Soviet times.

Although judges in the 1990s came to the judiciary from relatively diverse backgrounds, with approximately 1 in 3 having worked as private sector legal professionals or as legal academics (Solomon and Foglesong, 2000, 97-98), the clear majority of applicants since the mid-2000s have worked exclusively or primarily within the court apparatus or, to a lesser degree, in the prosecutor's office. Not only are applicants with experience outside of state institutions increasingly rare, but Dzmitryieva (2021, 148) finds that judicial qualifying boards are less likely to nominate such candidates. Our data from the Moscow sample reflect these broader trends. Around 77 percent of judges about whom we have data worked in the court apparatus before appointment to the bench. Approximately 12 percent came to the bench after working as prosecutors, lawyers in government agencies, or serving in the military. Less than 6 percent had private sector experience as a commercial or defense lawyer; another 5 percent worked as legal researchers or professors before becoming judges.

Following the Soviet Union's collapse, the judicial system was underfunded, judges poorly paid, and the profession's prestige low, but since the early 2000s, the Russian government has significantly improved funding for the judiciary (Solomon and Foglesong 2000, ch. 5; Volkov et al. 2015, 32-36). The commercial courts in particular are considered relatively prestigious, even for administrative staff (Bocharov and Titaev, 2018, 129-132). Bocharov and Titaev (2018, 135) estimate that an average commercial court judge earns approximately 20,000 USD annually.¹³ Commercial court judges also enjoy a lifelong pension with a salary commensurate to the earnings of an active judge at the rank at which they retire. Relevant to our analyses below, judges' salaries and perks are high enough that bribes have to be of a reasonably large magnitude to warrant the risk of engaging in corruption, and the size of a bribe that might tempt judges exceeds the sums of money at stake in many court cases. At the same time, the fact that judgeships in Russia's civil law system resemble in many ways a typical civil service position, with few individuals leaving lucrative private sector careers to take up the post, facilitates our development of corruption indicators based on anomalies in income and assets that exceed expectations of what an honest judge should be able to accumulate.

¹³Salaries for judges in Russia are determined by statutory law according to a complex formula that takes into account the type of court a judge works in (e.g., commercial courts versus courts of general jurisdiction); the level of the court (e.g., first instance versus appellate courts); the court's geographic location; judges' rank on a 10-level scale of "classes" that reflects years served, legal knowledge demonstrated, and position within the judicial hierarchy; and additional awards and distinctions such as post-graduate degrees in law and knowledge of foreign languages. See Ekaterina Borzenkova, "Tsena sudyi: skolko poluchayut rossiiskie sudyi" [The price of a judge: How much Russian judges earn], *Pravo.ru* (March 1, 2019).

2.2 *Measuring Corruption*

Our first empirical challenge relates to identifying judges with a higher likelihood of engaging in corruption. Obviously this is not a straightforward measurement task, as corruption is illegal in Russia. Even though we have ample evidence that corruption prosecutions are selectively pursued based on political connections (Popova and Post, 2018; Rochlitz, Kazun, and Yakovlev, 2020), Commercial court judges, as occupants of high-profile and powerful positions, have strong incentives to avoid any overtones of misusing their office for personal gain. What we present below is a first attempt at using publicly available data on the income and assets of judge to define continuous measures of ‘corruption propensity’ among judges. We then outline several ways of further developing and validating our measure.

We begin with the income and asset disclosure forms that judges file annually. By April 1 each year, every judge must submit an eight-page form, entering information on their income, expenditures, bank accounts, stocks, real estate, and transportation assets for themselves, their spouses and dependent children. Most of this information is kept confidential from the general public, save for basic fields on income, real estate and transportation. Appendix Section A1 shows examples in Russian and English. Recent work has shown that incorrectly filing these disclosures (or refusing to at all) can carry significant legal penalties (Szakonyi, 2020). Although prominent examples of enforcement are not enough to ensure complete honesty among officials, we cannot not simply ignore the information in the forms as meaningless.

First, we collect, parse, and standardize the raw disclosure information for all 360 commercial court judges working in Moscow and Moscow Oblast from 2011-2018; these data come from the official websites for each court. First, we aggregate all data to the entire family for each year, given the ample evidence in Russia about corrupt earnings accruing to or being hidden away by relatives of officials (Szakonyi et al., 2019). The result is a judge-year dataset that includes total family income, the number and size of real estate holdings, and the specific car make and models owned by all members of the family. Given the many reasons for judges to misrepresent their wealth on their disclosures, measuring corruption based on the amount of income they declare may be misleading.

We instead operationalize our measure of corruption through the concept of hidden earnings. Judges are legally mandated to report all of their income, real estate, and transportation assets in their disclosures, yet each asset class carries a different probability of detection by investigating authorities. For example, corrupt officials may be able to figuratively (or literally) hide cash derived from bribes in their mattress, but more tangible assets such as property and cars purchased must be registered with the government in

order to be enjoyed. Economists working with leaked datasets on Russia from the early 2000s developed a set of forensic tools to exploit this discrepancy and measure the extent of informal or hidden income in the Russian economy Braguinsky and Mityakov (2015); Braguinsky, Mityakov, and Liscovich (2014). Taking advantage of the fact that driving an unregistered car is nearly impossible in Russia, for example, Braguinsky and Mityakov (2015) compare individuals' officially reported earnings to the market values of the cars recorded in automobile registries.¹⁴

Judges who drive expensive cars yet report modest earnings in their disclosures may be attempting to hide illicit sources of income from authorities. Hiding income could be part of a tax avoidance strategy: judges may also be underreporting their income to tax authorities and fear that not reporting the same numbers on their anti-corruption disclosures will draw the authorities' attentions. But several high-profile investigations have caught Russian government officials driving cars that far exceed their disclosed income and made the case the proceeds are derived from corruption. For example, in 2018, a team of investigators led by activist Alexey Navalny published a report on State Duma Deputy Leonid Slutsky that compared the market value of his family's car collection (two Bentleys and a Mercedes-Benz) and his official annual income (roughly \$30,000).¹⁵

We used a dictionary of all make and models for sale in Russia over the past three years to identify every car owned by a judge, his or her spouse, or dependent children. Table 1 shows the 15 most popular car brands owned by judges. We then scraped the 'for-sale' listings from the website of Russia's largest automobile marketplace (<http://www.auto.ru>) each month from May to August 2021. The data includes listing price information for roughly 700,000 new and used vehicles for sale in Russia; there are on average 44 cars representing each make-model-year combination (a more popular car, such as a 2012 Honda Civic, saw 92 different listings over these four months).

To back out the value of each car when it appeared in a judge's declaration, we applied a 12% exponential depreciation rate calculated by (Braguinsky, Mityakov, and Liscovich, 2014).¹⁶ Unfortunately, only a small number of judge disclosures include the year of the car owned. For the sake of consistency, where this data point was missing, we assumed that the manufacture year was three years prior to the first year the car appeared on a

¹⁴Data came from the Moscow auto registry database and the universe of incomes reported to the Russian Pension Fund, both of which were mysteriously posted online.

¹⁵<https://navalny.com/p/5798/>

¹⁶Using car price data from 2004-2005, (Braguinsky, Mityakov, and Liscovich, 2014) arrive at 12% by regressing listing price on the age of the car and category (luxury, country of origin, etc.). The website auto.ru calculates an average 10.1% depreciation rate using more recent sales data, but though not every make and model combination was included. Future versions of this paper will show results with brand-specific depreciation rates as a robustness check.

TABLE 1: TOP 15 MOST COMMON CAR BRANDS OWNED BY JUDGES

| Make | Num. Cars | Mean Price (Rub) | Mean Price (USD) |
|---------------|-----------|------------------|------------------|
| Toyota | 38 | 3,115,343 | 47,928 |
| Mercedes-Benz | 29 | 3,714,080 | 57,140 |
| Volkswagen | 24 | 2,188,801 | 33,674 |
| Kia | 24 | 1,688,552 | 25,978 |
| Volvo | 24 | 2,584,229 | 39,757 |
| Nissan | 22 | 1,701,297 | 26,174 |
| BMW | 15 | 2,719,274 | 41,835 |
| Lexus | 15 | 4,237,008 | 65,185 |
| Honda | 14 | 2,062,148 | 31,725 |
| Audi | 14 | 2,395,678 | 36,857 |
| Hyundai | 13 | 1,437,369 | 22,113 |
| Ford | 12 | 1,039,156 | 15,987 |
| Land Rover | 10 | 3,490,552 | 53,701 |
| VAZ | 9 | 371,789 | 5,720 |
| Mitsubishi | 9 | 1,224,125 | 18,833 |

Note: This table shows the 15 most common car brands (manufacturers) owned by judges from 2011-2018. Mean price is calculated using the methodology described in (Braguinsky, Mityakov, and Liscovich, 2014), with prices shown in rubles and dollars (at an exchange rate of 65 rubles per dollar).

disclosure. In other words, deputies on average enter into office with cars that are three years old, and any cars they acquire during their time in office were three years old at the time of purchase. This is a very conservative assumption for dealing with the missing data problem (it forces downward the total value of cars owned), and future versions of the paper will show robustness checks that allow deputies to own new cars.

To give a more concrete example, the mean price of a 2012 Honda Civic for sale in 2021 was 827,500 rubles (roughly \$12,000). For a deputy who owned that car in 2015, its value would be set at 1,507,803 rubles, or roughly \$21,500. The rightmost columns in Table 1 show the average imputed price in rubles and USD calculated for each brand using this methodology. Luxury vehicles such as Mercedes-Benz, Lexus and Land Rovers are assigned much higher market values, while more mass-market and domestically produced models such as Ford and VAZ are valued much lower.

We calculate the hidden earnings ratio by summing the car values for each judge and his or her family and dividing by the total income declared in each year. Because income can fluctuate year to year, we average this ratio across all years the judge submitted declarations and arrive at a continuous measure of corruption as our main predictor. Higher hidden earnings ratio are more suggestive of corruption. The median judge has a hidden earnings ratio of 0.53, indicating that the total value of their cars in any year amounts to roughly half of the total declared income for their family that year. Nearly 100 judges have a ratio over one.

For purposes of illustration, we designate a judge as ‘corrupt’ if he or she has a hid-

den earnings ratio above the median for sample analyzed. Table 2 presents summary statistics using this binary indicator for corrupt versus non-corrupt judges on a variety of hand-coded demographic, educational, and professional data. We coded the official biographies where available for commercial court judges on the two courts' websites. For the 40% of judges that had missing or incomplete biographies, we collected open-source biographical data from the internet.

We see first that judges with higher hidden earnings ratios declare slightly more income, both as individuals and through their families than non-corrupt ones. We also see that corrupt judges have more experience serving on the court and are more likely to have won awards while in office. But there are only slight differences along other demographic dimensions, such as the proportion that are female or the quality of university education, a seven-point variable with top Moscow and international universities taking values of 1 and institutions located in small regions or former Soviet republics taking values of 7. In general, the two groups of judges appear quite similar. Table 3 analyzes the correlates of hidden earnings in a multivariate setting at the individual judge level, finding only that judges who went to more prestigious institutions are more likely to have discrepancies in their ratio. We include these demographic characteristics in the main results below.

As a validation check, we had a research assistant comb the internet for all information about judges in the two 1st instance courts being caught up in any official investigations or prosecutions. We were able to identify 12 such instances, and we include that indicator in all models of Table 3. The point estimates are positive but noisily estimated. The small number of judges publicly connected to corrupt acts have roughly one quarter of a standard deviation higher hidden earnings ratios. Though this correlation is purely speculative, the hidden earnings ratio may be capturing a more underlying dimension of corruption.

TABLE 2: SUMMARY STATISTICS: CORRUPT VERSUS NON-CORRUPT JUDGES

| Judge Type: | Corrupt | Non-Corrupt |
|--------------------------------------------------------|---------|-------------|
| (1) Number of Judges | 180 | 180 |
| (2) Female (%) | 0.689 | 0.689 |
| (3) Log Age (mean) | 3.759 | 3.748 |
| (4) Oblast Court (%) | 0.306 | 0.344 |
| (5) Log Years of Experience on Court (mean) | 2.012 | 1.836 |
| (6) University Rank, 1-7 scale (mean) | 4.270 | 4.466 |
| (7) Won Award (%) | 0.567 | 0.545 |
| (8) Leadership Position In Court (%) | 0.161 | 0.174 |
| (9) Judge Total Disclosed Income (mean, mil. rubles) | 2.183 | 2.080 |
| (10) Family Total Disclosed Income (mean, mil. rubles) | 2.808 | 2.613 |

This table shows summary statistics for demographic measures at the judge level for corrupt versus non-corrupt judges. Corrupt judges are defined as having hidden earnings ratios above the median for the sample.

TABLE 3: CORRELATES OF HIDDEN EARNINGS

| | Hidden Earnings Ratio | | |
|------------------------------------|-----------------------|-------------------|--------------------|
| | (1) | (2) | (3) |
| Judge is Female | 0.023 (0.097) | 0.004 (0.099) | 0.061 (0.121) |
| Judge Age (log) | -0.127 (0.244) | -0.308 (0.293) | -0.225 (0.388) |
| Moscow Oblast Court | -0.109 (0.096) | -0.120 (0.096) | -0.108 (0.116) |
| Years of Experience on Court (log) | | 0.105 (0.070) | 0.066 (0.110) |
| Judge University Rank | | | -0.059* (0.032) |
| Won Award | | | -0.102 (0.152) |
| Leadership Position In Court | | | -0.143 (0.139) |
| Anecdotal Evidence of Corruption | 0.157 (0.272) | 0.078 (0.274) | 0.176 (0.296) |
| Observations | 353 | 347 | 237 |
| R ² | 0.006 | 0.013 | 0.028 |

This table shows the correlates of the hidden earnings ratio using data collected at the judge level. Standard errors are clustered on udge.

The accuracy of the hidden earnings measure assumes that judges are faithfully disclosing all of their transportation assets. But judges may believe that authorities will never find the cars that fail to appear on their disclosures. The next version of this paper will use an alternate strategy for measuring corruption that compares reported assets in the disclosures to assets actually held by the judges. Currently we are developing dictionaries to match each judge with their entry in state car registry: the General Administration for Traffic Safety (GIBDD) database. The GIBDD and related datasets have been used extensively in economics to track individual wealth, bribe-taking among the traffic police, and propensity to commit traffic violations (Braguinsky, Mityakov, and Liscovich, 2014; Braguinsky and Mityakov, 2015). We argue that discrepancies between the cars listed on disclosure forms and those actually registered reflect an attempt by judges to hide ill-gotten gains from office. Judges who fail to accurately disclose their cars, particularly luxury brands, may be guilty of using their positions for self-enrichment and then not attract attention from media outlets, civil society organizations, and prosecutors who come through the disclosure data.

2.3 Case Outcomes

Our primary outcome variable comes from the 1st instance ruling for each case. This is the first decision handed down by a judge in the case, and if no appeal is subsequently filed, it becomes final and enforced by the court. We use a simply coding key to collapse the roughly 100 raw text rulings into the seven unique values in Table 4. At this stage we set aside any cases that do not lead to any of these outcomes (for example those that led to different kinds of reports) and will analyze them separately (as well as assess selection effects). When operationalizing below, we code plaintiffs as winning in cases with full or partial victories, and plaintiffs losing in cases with full or partial losses, as well as when the court ended proceedings or refused to hear the case.

TABLE 4: DISTRIBUTION OF CASE OUTCOMES

| Outcome | Number | % |
|---------------------------|-----------|------|
| Court ends proceedings | 148,835 | 8.2 |
| Court refused to hear | 56,176 | 3.1 |
| Plaintiff loses | 216,592 | 11.9 |
| Plaintiff loses partially | 1,726 | 0.1 |
| Plaintiff wins | 1,122,076 | 61.7 |
| Plaintiff wins partially | 122,504 | 6.7 |
| Settled out of court | 795 | 0 |
| Total Cases | 1,668,704 | |

The next step involves classifying cases based on the types of litigants and bringing in external information on their financials. The raw data from the Russian Commercial

court system includes full coverage on the name and legal address for all 255,458 plaintiffs, respondents, third parties, and related parties involved in the Moscow and Moscow Oblast cases. However, unique tax identification numbers are given for only 45% of this total. To fill in this missingness, we first standardize company names and geolocate addresses, and then match on both fields with the full Russian firm registry available from the Russian Tax Service. These cleaning and matching procedures improve our coverage of tax numbers to 79% of all litigants.

Using these identifiers, we merge in company registration data from the Russian Tax Service. First, we code whether a litigant's ownership was private, state, foreign, or mixed. These indicators are available for the full set of litigants. Next we average revenue data and rank companies into quantiles (0,100) based on where they fall into a distribution of all firms operating in Russia. Litigants with higher ranks on average over 2011-2018 generated more revenue than those with lower ranks. Revenue data is available for 42% of all litigants; government agencies, non-profits, and other types of legal entities do not need to report such figures, while many smaller companies fail to file.

3 Identification Strategy

To demonstrate whether corrupt commercial court judges have an independent effect on case outcomes, we exploit randomness in the assignment of cases to judges. This identification strategy has a rich history in the literature on criminal justice worldwide. In the US criminal context, scholars have used random judge assignment to analyze the money bail system ([Gupta, Hansman, and Frenchman, 2016](#)), pretrial detention ([Dobbie, Goldin, and Yang, 2018](#)), and judge political affiliation ([Cohen and Yang, 2019](#)). Work on Israel has looked instead at random assignment to panels, showing that the ethnic composition of judges affects the severity of punishments handed down ([Grossman et al., 2016](#)). To our knowledge, this is the first paper to apply such an empirical strategy using commercial court data.

However, this widespread use of judge random assignment has recently come under sharp criticism for ignoring common 'de-randomizing events'. [Thorley \(2020\)](#) makes a series of cogent arguments that verifying causal claims is often significantly more complicated than simply assuming randomization is taking place as is explicitly codified in court proceedings. In this section, we attempt to implement the solutions proposed in that article to tackle the myriad problems concerning initial assignment and non-compliance that can crop up in the assignment process.

3.1 Case Assignment in Russia

The system for assigned cases to judges functions slightly differently in each 1st instance court in Russia. As of 2012, three-quarters of courts were using a random system, as originally allowed for by a decision of the Higher Commercial court in 2008.¹⁷ What follows is our assessment for the Moscow and Moscow Oblast courts, which both moved over to a random electronic system in 2007, based on our primary source research. We hope to supplement this with interviews with court employees and lawyers in the coming months.

First, court judicial staff assign an incoming case to a specific category, based on its content and type of dispute. In our data, we see 147 distinct categories. Then an automated system assigns the case to a judge with the appropriate specialization, based on their education and experience (Vladimir, 2009). This assignment is mostly random, but also takes into account the complexity of the case and available judges current and planned workload.¹⁸ Bankruptcy and intellectual property cases are considered the most complex, the former of which we excluded from our analysis in order to focus exclusively on disputes. The assignment system also takes into account each judge's administrative duties, and availability, i.e. whether they are being sick or on vacation at the time of the filing. If a judge is recused from the case or is unable to work for an extended period of time, then the automated system is used to pick the replacement judge. Prior to 2010, the chairmen of some courts could have maintained some control over assignment, but reforms and a complete move to an electronic system took that lever out of their hands.

Assessments of the random assignment system in general are quite positive. Bocharov and Titaev (2018) argue that the random distribution has prevented litigants from manipulating the system to their advantage; for example that the "implementation of the electronic system of justice in Arbitrazh courts has made it much more difficult to steer the case towards the 'preferred' judge" (Bocharov and Titaev, 2018, 134). But no system is completely perfect and anecdotal evidence exists of plaintiffs creatively filing cases to bypass the automated system and get their case assigned to a preferred judge. Several tactics exist, such as filing multiple identical cases but only paying the court fees for the one that lands with the judge they want, or similarly, by making intentional mistakes in multiple filings and then correcting the mistakes only for the filing that lands with the judge they want. Not all this maneuvering may be done to facilitate corruption in the

¹⁷Kazmin, Dmitriy and Kseniya Boletskaya. 'Kak Poluchit' Otvod Neugodnogo Sudya' Vedomosti, April 13, 2012. Pravo.Ru 'VAS Sobiraetsya do Kontsa Goda Polnostyu Otluchit' Rukovoditeley Sudov ot Raspre-deleniya Del', August 2, 2013

¹⁸Moskovskaya Gorodskaja Kollegiya Advokatov, 'Formirovanie Sostava Arbitrazhnogo suda', October 17, 2018

form of bribes paid. Plaintiffs may be aware of a judge’s record in similar cases and want to either ensure or steer clear of her assignment depending on their expectation of his or her ruling.

To the greatest extent possible, we use our detailed data to assess whether cases assigned to treatment (i.e. corrupt judges) look broadly similar to those assigned to the control group (i.e. non-corrupt judges). We group our cofounders based on four categories, given our reading of the factors taken into account by the electronic assignment system. First, to measure *specialization*, for each judge, we numerically ranked case categories by the number of cases they adjudicated over the entire sample period. This measure ‘Judge Category Rank’ ranks from 1-53, depending on how many unique cases each judge heard. On average, each judge hears cases across 20 distinct categories. In Appendix Section A2, we show that the variety of case categories (as denoted by a HHI-inspired specialization index) a judge hears is dependent on their experience. The vast majority of judges work across many specializations.¹⁹ We also code a binary indicator ‘Judge Top 5 Category’ for whether a specific case fell into one of the top 5 categories for that assigned judge. Next, we bring in several judge-level characteristics to better capture experience, including the university quality rank, judge age, and a cumulative number of cases heard by that judge prior to being assigned the case in question.

To measure *case complexity*, we argue that a greater number of litigants connected to the case will result in a more complicated, resource-intensive judicial process. For example, the number of hearings ultimately held in a case is strongly predicted by the number of plaintiffs, respondents, other and third parties that are on the initial filing.²⁰ We include counts of each type of litigant in our balance assessment. We also include separate indicators for whether either the plaintiffs or respondents were government agencies or state-owned enterprises as an additional check. Finally, we suspect that cases involving larger amounts of money will be more complex. However, not all cases involve monetary claims; we include an indicator for whether there was a specific amount specified, or if a different non-monetary outcome was pursued by the plaintiff.

To measure *judge workload*, we calculate the number of cases a judge was assigned to during the month the case was initially filed, as well as the quarter. We have also calculated such measures using the previous month and previous quarter and may ultimately go with those. Finally, we include other characteristics of the judges, including their gender, whether the court was in Moscow or Moscow Oblast, and whether it involved an

¹⁹Appendix Section A2 also calculates how many judges work within each specific category. A small number categories that have a small number of cases usually see 1 or 2 judges assigned. But for the most part, there are multiple judges that can assigned to each category.

²⁰Appendix Table A1 shows these results.

administrative dispute with a government agency. Unfortunately, we do not have data on several other cofounders potentially of interest. For example, we cannot know easily if a case was withdrawn, e.g. whether a plaintiff was pursuing one of the maneuvers to file multiple cases and withdraw those not assigned to their preferred judge. Moreover, we do not have data on judge’s vacation schedules or availability.

Table 5 shows the balance tests across cases based on whether judges scored above or below the median hidden earnings ratio for the sample (corrupt or non-corrupt judges); we show means and standard deviations for each group. In addition, we show standardized differences in means and set a means threshold of 0.1, indicating whether any of the these differences surpassed that threshold. Finally we show variance ratios and set a threshold of 2, noting that variance ratios close to 1 indicate equal variances in both groups, and thus group balance (Austin, 2009). The results show strong balance across the cofounders. Almost all of the groups are balanced across a standardized magnitude of the group difference, which often is a better indicator of imbalance than significance tests (Stuart, Lee, and Leacy, 2013). One exception is judge experience, given higher values. Next, as a robustness check, in Appendix Table A2 we show simple difference in means and standardized differences means between the same cofounders, but also with z-scores based on simple t-tests. There are quite a few significant differences, but these may result from the large sample size. Our interpretation of these results is that there is strong evidence in favor of random assignment across judges in the case of Russia, but that inferences would be improved by controlling for the factors we know might possibly undermine that randomization.

4 Empirical Results

We present empirical results testing the first two hypothesis in Table 6. All models use OLS and include the cofounders listed in Tables 5 and A2 as controls: (1) at the judge level: specialization, education, age, experience, workload and gender; and (2) at the case level, claim amount, number of litigants, and region. All models also include fixed effects for the month of the first filing and detailed case category. Standard errors are clustered on case category. The main predictor is the continuous measure of hidden earnings for the single judge assigned to the case.

The first three columns examine the outcome of whether the larger private firm won disputes with another private firm, i.e. “private-private” disputes (Hypothesis 1). The outcome is a binary indicator if the revenue rank from 0-100 was larger for the winning litigant (either plaintiff or respondent). For cases with multiple plaintiffs or respondents,

TABLE 5: BALANCE TEST, M-THRESHOLD AND VARIANCE RATIOS

| Case Assigned to: | Non-Corrupt Judge | | | Corrupt Judge | | Std. Diff | M-Thr | V-Ratio | V-Thr |
|-------------------------------|-------------------|---------|---------|---------------|---------|-----------|----------------|---------|----------|
| | Type | Mean | SD | Mean | SD | | | | |
| Specialization | | | | | | | | | |
| Judge Category Rank | Contin. | 3.846 | 4.597 | 4.143 | 4.905 | 0.063 | Bal., <0.1 | 1.139 | Bal., <2 |
| Judge Top 5 Category | Binary | 0.808 | | 0.783 | | -0.024 | Bal., <0.1 | | |
| University Rank | Contin. | 4.586 | 1.744 | 4.539 | 1.800 | -0.027 | Bal., <0.1 | 1.066 | Bal., <2 |
| Missing: University Rank | Binary | 0.278 | | 0.248 | | -0.030 | Bal., <0.1 | | |
| Judge Num. Cases (Cumulative) | Contin. | 7.903 | 1.087 | 8.043 | 1.058 | 0.131 | Not Bal., >0.1 | 0.946 | Bal., <2 |
| Judge Age (log) | Contin. | 3.740 | 0.191 | 3.752 | 0.167 | 0.072 | Bal., <0.1 | 0.766 | Bal., <2 |
| Missing: Judge Age (log) | Binary | 0.023 | | 0.004 | | -0.020 | Bal., <0.1 | | |
| Num. Plaintiffs | Contin. | 1.073 | 0.334 | 1.075 | 0.342 | 0.007 | Bal., <0.1 | 1.043 | Bal., <2 |
| Case Complexity | | | | | | | | | |
| Missing: Num. Plaintiffs | Binary | 0.000 | | 0.000 | | -0.000 | Bal., <0.1 | | |
| Num. Respondents | Contin. | 1.046 | 0.460 | 1.030 | 0.470 | -0.033 | Bal., <0.1 | 1.044 | Bal., <2 |
| Num. Other Parties | Contin. | 0.098 | 0.370 | 0.120 | 0.407 | 0.057 | Bal., <0.1 | 1.210 | Bal., <2 |
| Num. Third Parties | Contin. | 0.168 | 0.674 | 0.167 | 0.667 | -0.001 | Bal., <0.1 | 0.978 | Bal., <2 |
| Num. Gov. Plaintiffs | Contin. | 0.317 | 0.495 | 0.306 | 0.490 | -0.023 | Bal., <0.1 | 0.982 | Bal., <2 |
| Num. Gov. Respondents | Contin. | 0.252 | 0.489 | 0.260 | 0.494 | 0.016 | Bal., <0.1 | 1.018 | Bal., <2 |
| Claim Amount (log) | Contin. | 11.320 | 2.720 | 11.379 | 2.712 | 0.022 | Bal., <0.1 | 0.994 | Bal., <2 |
| Missing: Claim Amount (log) | Binary | 0.157 | | 0.195 | | 0.038 | Bal., <0.1 | | |
| Workload | | | | | | | | | |
| Judge Num. Cases in Month | Contin. | 168.848 | 129.056 | 165.914 | 113.230 | -0.024 | Bal., <0.1 | 0.770 | Bal., <2 |
| Judge Num. Cases in Quarter | Contin. | 469.227 | 321.523 | 464.175 | 277.534 | -0.017 | Bal., <0.1 | 0.745 | Bal., <2 |
| Other Characteristics | | | | | | | | | |
| Judge is Female | Binary | 0.739 | | 0.677 | | -0.062 | Bal., <0.1 | | |
| Moscow Oblast Court | Binary | 0.292 | | 0.288 | | -0.005 | Bal., <0.1 | | |
| Administrative Case | Binary | 0.210 | | 0.239 | | 0.029 | Bal., <0.1 | | |

Total Cases: 763,576 1,055,200

This table shows balance across the treatment group (cases assigned to corrupt judges) and the control group (cases assigned to the non-corrupt judges) for the Moscow and Moscow Oblast sample. The leftmost columns show raw means and standard deviations for each group. The difference in means is standardized, with any over a means threshold of 0.1 indicating in the 'M-Thr' column. The rightmost columns show the variance ratio with a column flagging if any values exceeded a threshold of 2.

we use the highest revenue rank among the involved parties. For a private-private dispute to be included in the sample, we require that revenue information is available for on at least one plaintiff and at least one respondent. All specifications subset the sample to only civil, rather than administrative, disputes where the plaintiffs and respondents are private firms. Each column subsets the cases by minimum monetary amount being claimed by the plaintiff: all cases (Column 1), claims larger than \$25,000 (Column 2), and claims larger than \$100,000. This allows us to see whether the effects carry forward to the largest, most important cases coming through the Commercial court docket.

The results show a positive and statistically significant effect of an assigned judge's hidden earnings on the probability that the larger firm wins the dispute. A one-standard deviation increase in hidden earnings by a judge increases the likelihood a larger firm will win by a little more than 1%, a small but meaningful effect. This effect holds no matter than minimum size constraint imposed, suggesting that judges who are hiding income on their disclosures favor larger firms during the proceedings.

Columns 3-4 examine whether private firms prevail in disputes with government agencies. Here we restrict to only administrative cases, where government agencies such as tax collectors or law enforcement authorities are suing firms in commercial courts for various violations, i.e. "private-government" disputes. The plaintiffs are always private firms. The point estimate in Column 4 is again positive and significant: private firms are more likely to win their cases against government agencies when judges with greater hidden earnings are assigned to hear the case. The magnitude of the effect is similar to that described above. To test the second part of Hypothesis 2, we interact our indicator for the corruption judge with revenue sales rank of private firm (either as a plaintiff or a respondent). We do not see evidence of this interaction, as investigated in Column 5, Table 6. Firms of all sizes appear to fare well against government adversaries in court when they are assigned a more corrupt judge.

In Table 7, we analyze other procedural outcomes from the cases that help shed light on how corrupt judges help certain litigants. The outcomes in Columns 1 and 2 capture how quickly cases are decided in two different ways: the total number of days between submission and final first instance ruling (Column 1) and whether a delay or extension was issued by the judge at any point during the first instance (Column 2). We see strong evidence that corrupt judges decide their cases more quickly overall and are less likely to issue delays. Though speed may be an indicator of efficiency, these results could also suggest that judges are not taking adequate time to review evidence presented and fully hear the two sides of the case. Instead their decision is made beforehand in coordination with the bribing litigant.

Column 3 analyzes whether cases heard by more corrupt judges even in partial rather than full rulings in favor of either the plaintiff or the defendant. Hypothesis 4 predicts that corrupt judges are less likely to return partial verdicts of negotiated settlements. Per Table 4, rulings with these characteristics occur roughly 8% of the time. We do not find evidence in favor of this hypothesis, as there is no relationship between hidden earnings and the likelihood of a partial ruling.

Finally, we analyze whether a case heard by a judge with hidden earnings was more or less likely to be appealed (Column 4), and if so overturned by an appellate court (Column 5). In both instances, the results are small and not statistically significant. More corrupt judges do not see their decisions changed by higher courts, which could suggest that any money paid in a bribe has a lasting impact on a litigant's fate.

4.1 *Robustness Checks*

Ultimately we hope to use the alternate measurement strategy (cars missing from disclosures) as our primate measure of hidden wealth and propensity to engage in corruption. As described above, discrepancies between the value of cars owned and disclosed earnings is strongly suggestive of judges living beyond their official means, but validating such a measure quickly runs into serious selection effects concerning which judges disclose owning which of their cars. As this paper evolves, we expect to use this hidden earnings measure as one of several robustness checks illustrating how corruption, differently measured, has similar effect on case outcomes.

In support of its usage, we find that the correlations between hidden earnings and victories by large, private firms, as shown in Table 6, do pass a battery of robustness checks. Table A3 shows that more corrupt judges are more likely to find in favor of larger private firms both in Moscow and Moscow region. Moreover, we do not see evidence that reforms made to consolidate the arbitration courts under the wider judiciary in 2013 changed the predilection of corrupt judges to favor larger firms. The effects do not change markedly based on earlier versus later periods. As we build out our corruption measures, we expect to run more robust analyses of these main effects.

TABLE 6: PREFERENTIAL TREATMENT FOR LARGE PRIVATE FIRMS

| | Private-Private Cases | | | Private-Government Cases | |
|-----------------------------------------|-----------------------|---------------------|---------------------|--------------------------|----------------------|
| | Larger Firm Wins | | | Private Firm Wins | |
| | (1) | (2) | (3) | (4) | (5) |
| Hidden Earnings Ratio | 0.007*** (0.003) | 0.005*** (0.002) | 0.009*** (0.003) | 0.010*** (0.002) | 0.014*** (0.002) |
| Hidden Earnings Ratio * Respondent Rev. | | | | | −0.004 (0.005) |
| Judge Top 5 Category | 0.005 (0.008) | 0.001 (0.012) | −0.007 (0.013) | 0.013 (0.013) | 0.024 (0.016) |
| Judge University Rank | −0.002*** (0.001) | −0.002* (0.001) | −0.003 (0.002) | −0.007** (0.003) | −0.008*** (0.002) |
| Judge Num. Cases (Cumulative) | 0.0002 (0.003) | 0.002 (0.005) | −0.005 (0.006) | 0.079*** (0.009) | 0.105*** (0.009) |
| Judge Age (log) | −0.002 (0.008) | −0.032** (0.014) | −0.025 (0.021) | 0.011 (0.027) | 0.015 (0.024) |
| Judge Num. Cases in Month | 0.021*** (0.005) | 0.024*** (0.008) | 0.029** (0.013) | 0.048 (0.031) | 0.048 (0.031) |
| Judge Num. Cases in Quarter | −0.006* (0.004) | −0.013* (0.007) | −0.014 (0.012) | 0.312*** (0.044) | 0.309*** (0.046) |
| Judge is Female | −0.003 (0.004) | −0.007 (0.005) | −0.009 (0.007) | 0.039*** (0.007) | 0.043*** (0.006) |
| Case Claim Amount (log) | −0.029*** (0.005) | −0.003 (0.006) | 0.003 (0.007) | 0.007*** (0.002) | 0.008*** (0.003) |
| Case Num. Plaintiffs | 0.041*** (0.015) | 0.057*** (0.012) | 0.050*** (0.012) | 0.109*** (0.038) | 0.104*** (0.038) |
| Case Num. Respondents | 0.020*** (0.005) | 0.022*** (0.006) | 0.020*** (0.007) | −0.077*** (0.012) | −0.091*** (0.018) |
| Moscow Oblast Court | −0.015* (0.008) | −0.023* (0.012) | −0.026 (0.016) | 0.021 (0.025) | 0.007 (0.036) |
| Respondent Revenue | | | | | 0.005 (0.005) |
| Start Month, Category FE | Yes | Yes | Yes | Yes | Yes |
| Case Size | All | >\$25,000 | >\$100,000 | All | All |
| Observations | 232,388 | 58,101 | 25,507 | 80,226 | 54,886 |
| R ² | 0.121 | 0.074 | 0.076 | 0.257 | 0.268 |

*** p<0.01, ** p<0.05, * p<0.1 The outcome variable in Columns 1-3 is whether the larger firm (by revenue) won civil cases where both plaintiff and defendant are private firms. The outcome in Columns 4-5 is whether a private firm won its administrative case against a government plaintiff, such as a tax agency. All models include fixed effects for the month the case began and the detailed case category. Standard errors are clustered on case category.

TABLE 7: PROCEDURAL OUTCOMES

| | Case Length (1) | Delayed (2) | Partial Ruling (3) | Appealed (4) | Overtured (5) |
|-------------------------------|----------------------|----------------------|-----------------------|---------------------|----------------------|
| Hidden Earnings Ratio | −0.027*** (0.010) | −0.011*** (0.003) | 0.0004 (0.001) | 0.0004 (0.001) | 0.001 (0.002) |
| Judge Top 5 Category | 0.061 (0.057) | −0.014** (0.006) | 0.008 (0.005) | −0.005 (0.006) | −0.008 (0.006) |
| Judge University Rank | −0.003 (0.005) | 0.004*** (0.001) | 0.002* (0.001) | | 0.001 (0.001) |
| Judge Num. Cases (Cumulative) | 0.019 (0.036) | −0.020*** (0.004) | −0.002 (0.002) | −0.001 (0.001) | −0.003 (0.003) |
| Judge Age (log) | −0.079 (0.089) | −0.032*** (0.011) | −0.008 (0.007) | 0.016* (0.008) | 0.051*** (0.011) |
| Judge Num. Cases in Month | −0.090** (0.045) | 0.0004 (0.005) | −0.009 (0.006) | −0.0002 (0.003) | −0.002 (0.007) |
| Judge Num. Cases in Quarter | −0.046 (0.047) | −0.0003 (0.003) | −0.019*** (0.006) | 0.001 (0.003) | 0.012* (0.006) |
| Judge is Female | 0.034* (0.019) | 0.026*** (0.006) | 0.009*** (0.002) | −0.005** (0.002) | −0.016*** (0.003) |
| Case Claim Amount (log) | 0.052*** (0.009) | 0.040*** (0.003) | 0.014*** (0.003) | 0.032*** (0.002) | −0.003*** (0.001) |
| Case Num. Plaintiffs | 0.130*** (0.006) | 0.065*** (0.004) | 0.022*** (0.004) | 0.255*** (0.008) | 0.007*** (0.002) |
| Case Num. Respondents | 0.127*** (0.017) | 0.051*** (0.012) | 0.017*** (0.004) | 0.146*** (0.028) | 0.003* (0.002) |
| Case is Administrative | −0.493** (0.213) | 0.016 (0.026) | −0.004 (0.014) | 0.047*** (0.017) | −0.034*** (0.012) |
| Moscow Oblast Court | −0.202*** (0.018) | −0.011 (0.007) | 0.021* (0.012) | −0.021 (0.017) | 0.061*** (0.008) |
| Start Month, Category FE | Yes | Yes | Yes | Yes | Yes |
| Dispute | All | All | All | All | All |
| Observations | 1,082,375 | 1,082,404 | 996,936 | 1,461,676 | 125,541 |
| R ² | 0.498 | 0.147 | 0.035 | 0.182 | 0.018 |

*** p<0.01, ** p<0.05, * p<0.1 Outcome variables are shown in the column headers. Both civil and administrative cases are included in the analysis, with no minimum monetary threshold being applied. All models include fixed effects for the month the case began and the detailed case category. Standard errors are clustered on case category.

5 Concluding Remarks

Analysis using the hidden earnings measure suggests that judges who drive expensive cars relative to their declared income give preferential treatment to certain types of private firms that appear before them in court. Companies with more resources to offer bribes benefit from having a more corrupt judge assigned to their case, yet we see little evidence that the random assignment in use within the Russian system is being undermined by companies trying to work the system to get certain judges to hear their disputes. These results suggest that although substantial progress has been made to the Russian judiciary, the continued presence of profiteering judges threatens the institution's ability to effectively protect the property rights of all interested parties coming before it. Corruption threatens to turn the commercial courts become a weapon of powerful firms to use against both their smaller rivals and government agencies that attempt to hold them accountable for administrative or other violations.

The next steps for this paper will not only be to improve and better validate the measure of corruption at the individual judge level, but investigate the wider market consequences of the judiciary being populated by judges seeking personal financial gain over their professional duties. We are especially interested in the fate of the litigants losing cases heard by corrupt judges, i.e. those parties that either refused to or fell short of fully bribing their assigned judge to rule in their favor. Using data on bankruptcies and reorganizations, we will analyze how impartial contract enforcement potentially seals the fates of non-participants in corrupt behavior, further advantaging those that willingly and/or successfully buy off judicial institutions. The result may be the creation of a vicious cycle by which powerful firms purchases judges which help them further consolidate their market dominance.

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Appendix

A1 Example Income and Asset Disclosure

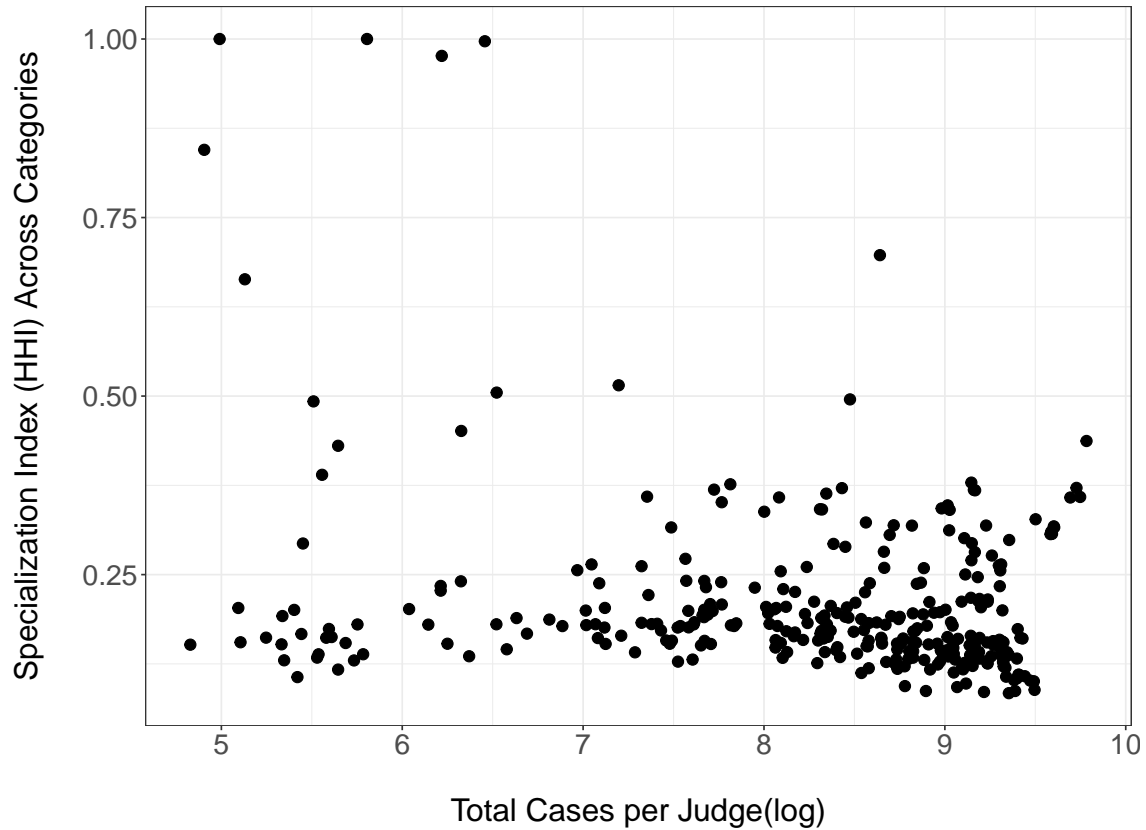
FIGURE A1: ORIGINAL RUSSIAN LANGUAGE

| Фамилия, имя, отчество | Должность | Общая сумма декларированного годового дохода за 2015 г. (тыс. руб.) | Перечень объектов недвижимости | | | Перечень транспортных средств, принадлежащих на праве собственности | Сведения об источниках получения средств, за счет которых совершена сделка |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------|---------------------|------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| | | | Вид объектов недвижимости | Площадь (кв. м.) | Страна расположения | | |
| Кондратьева Ирина Вячеславовна | член комиссии Совета народных депутатов муниципального образования город Гусь- Хрустальный | 629 577,08 | Квартира (общая долевая собственность, доля в праве 1/2) | 77,90 | Россия | | |
| Супруг | | 383 996,26 | Квартира (безвозмездное пользование) | 77,90 | Россия | Автомобиль легковой VOLKSWAGEN POLO (индивидуальная собственность) | |
| Сын | | 17 382,50 | Квартира (общая долевая собственность, доля в праве 1/2) | 77,90 | Россия | | |
| Сын | | | Квартира (безвозмездное пользование) | 77,90 | Россия | | |

FIGURE A2: TRANSLATED INTO ENGLISH

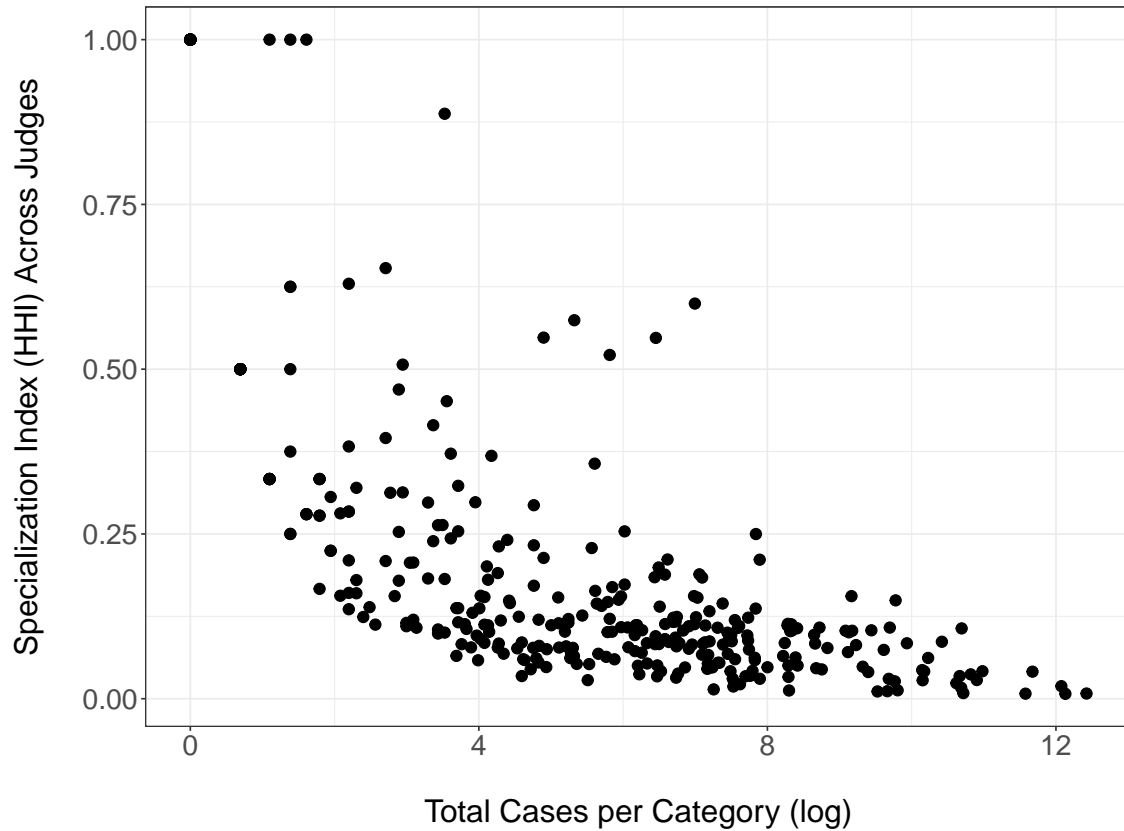
| Last Name, First Name, Patronymic | Position | Total Declared Annual Income for 2015 (ths. Rubles) | List of Real Estate Properties | | | List of Transportation Assets | Information on the sources of assets on which a transaction was made |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|----------------------------------|---------------|---------|-----------------------------------------------------------|----------------------------------------------------------------------------------|
| | | | Type of Property | Sq. Meters | Country | | |
| Kondrat'eva Irina Vyacheslavovna | Member of the Council of People's Deputies of the Municipal Organization City Gus'-Krustalnyi | 629 577,08 | Apartment (total share - 1/2) | 77,90 | Russia | | |
| Spouse | | 383 996,26 | Apartment (free use) | 77,90 | Russia | Light automobile VOLKSWAGEN POLO (individual asset) | |
| Son | | 17 382,50 | Apartment (total share - 1/2) | 77,90 | Russia | | |
| Son | | | Apartment (free use) | 77,90 | Russia | | |

FIGURE A3: JUDGE SPECIALIZATION ACROSS CATEGORIES



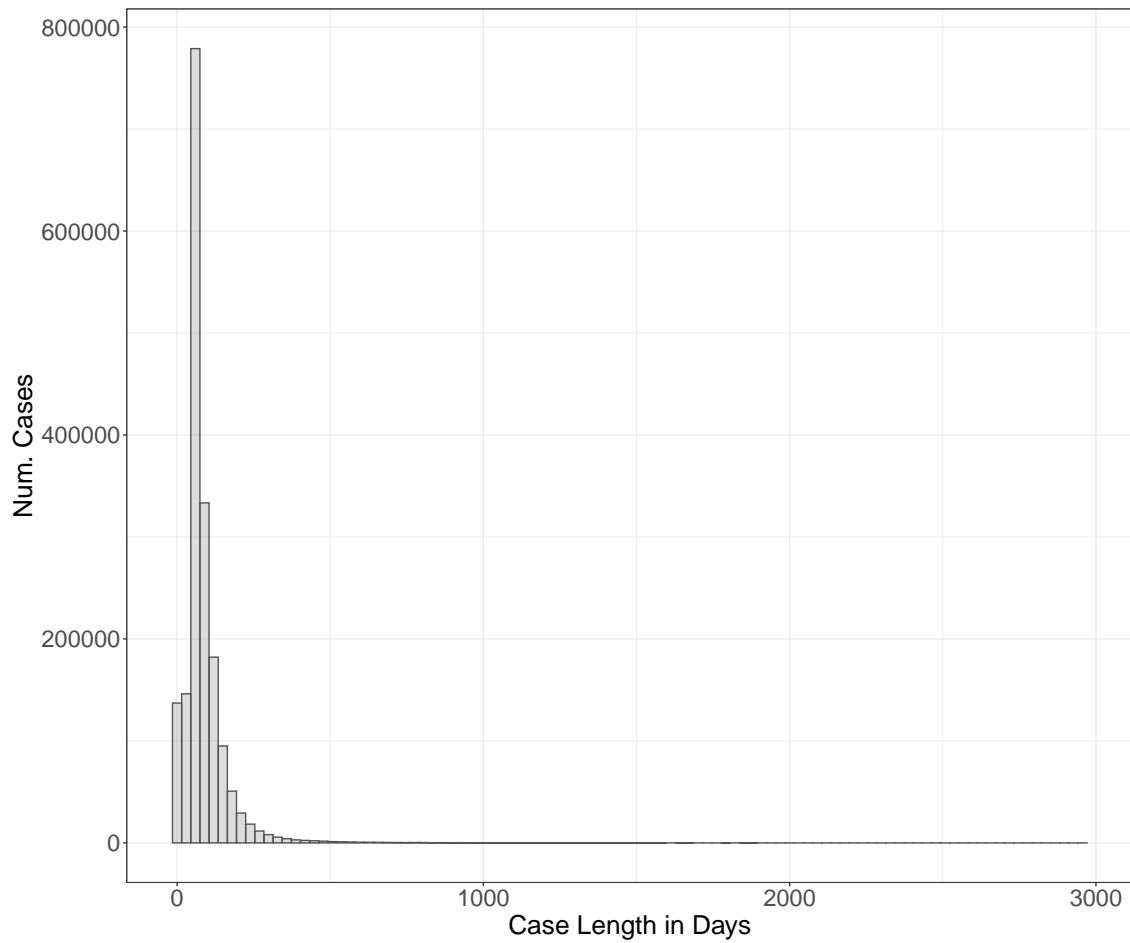
This figure plots a specialization (Herfindahl-Hirschman) index on the y-axis by the number of cases per *judge* on the x-axis. First we counted the number of cases that each judge oversaw in each category. We then calculated a concentration index for each judge across the different categories, with higher values indicating that a judge mainly worked on cases within fewer categories (an index value of 1 means a judge worked only on cases from a single category). Lower values of the index means that judges spread their time across many different case categories. The x-axis plots the number of cases a judge oversaw across all categories.

FIGURE A4: DISTRIBUTION OF JUDGES INTO CATEGORIES



This figure plots a specialization (Herfindahl-Hirschman) index on the y-axis by the number of cases per *category* on the x-axis. First we counted the number of cases that each judge oversaw in each category. We then calculated a concentration index for each category across the different judges, with higher values indicating that a category saw a smaller number of judge assigned to its cases (an index value of 1 means a single judge worked cases from that category). Lower values of the index means that the category saw multiple different judges assigned to it. The x-axis plots the number of cases in each category across all judges.

FIGURE A5: DISTRIBUTION OF CASE LENGTHS



This figure plots the length of each case in days. The median case was resolved in 65 days, with 99% of cases resolved within a year.

TABLE A1: NUMBER OF RELATED PARTIES PREDICT CASE COMPLEXITY

| | Num. Hearings | Num. Events | Case Length |
|---------------------------------------|---------------------|---------------------|---------------------|
| | (1) | (2) | (3) |
| Num. Plaintiffs | 0.526*** (0.041) | 0.135*** (0.010) | 0.093*** (0.008) |
| Num. Respondents | 0.460*** (0.038) | 0.134*** (0.020) | 0.093*** (0.015) |
| Num. Third Parties | 0.526*** (0.025) | 0.061*** (0.005) | 0.117*** (0.008) |
| Num. Other Parties | 0.803*** (0.075) | 0.053* (0.030) | 0.109*** (0.024) |
| Region, Month, Category Fixed Effects | Yes | Yes | Yes |
| Observations | 1,818,772 | 1,818,772 | 1,818,712 |

*** p<0.01, ** p<0.05, * p<0.1 This table analyzes the factors predicting the number of hearings a case will ultimately have. All models use OLS and cluster errors on category.

TABLE A2: BALANCE TEST, T-TESTS

| Case Assigned to: | Non-Corrupt Judge Mean | Corrupt Judge Mean | Adj. Diff | Std. Diff | Z-Score | |
|-------------------------------|---------------------------|-----------------------|-----------|-----------|----------|-----|
| Specialization | | | | | | |
| Judge Category Rank | 3.846 | 4.143 | 0.297 | 0.062 | 41.417 | *** |
| Judge Top 5 Category | 0.808 | 0.783 | -0.024 | -0.060 | -40.121 | *** |
| University Rank | 4.423 | 4.405 | -0.018 | -0.012 | -7.840 | *** |
| Judge Num. Cases (Cumulative) | 7.903 | 8.043 | 0.140 | 0.131 | 86.934 | *** |
| Judge Age (log) | 3.739 | 3.752 | 0.013 | 0.073 | 48.668 | *** |
| Case Complexity | | | | | | |
| Num. Plaintiffs | 1.073 | 1.075 | 0.002 | 0.007 | 4.681 | *** |
| Num. Respondents | 1.046 | 1.030 | -0.015 | -0.033 | -22.024 | *** |
| Num. Other Parties | 0.098 | 0.120 | 0.022 | 0.056 | 37.364 | *** |
| Num. Third Parties | 0.168 | 0.167 | -0.000 | -0.001 | -0.475 | |
| Num. Gov. Plaintiffs | 0.317 | 0.306 | -0.011 | -0.023 | -14.986 | *** |
| Num. Gov. Respondents | 0.252 | 0.260 | 0.008 | 0.016 | 10.958 | *** |
| Claim Amount (log) | 11.309 | 11.355 | 0.045 | 0.018 | 12.262 | *** |
| Workload | | | | | | |
| Judge Num. Cases in Month | 168.848 | 165.914 | -2.934 | -0.024 | -16.254 | *** |
| Judge Num. Cases in Quarter | 469.227 | 464.175 | -5.052 | -0.017 | -11.329 | *** |
| Other Characteristics | | | | | | |
| Judge is Female | 0.739 | 0.677 | -0.062 | -0.136 | -90.315 | *** |
| Moscow Oblast Court | 0.292 | 0.288 | -0.005 | -0.010 | -6.763 | *** |
| Administrative Case | 0.210 | 0.239 | 0.029 | 0.069 | 45.887 | *** |
| Missing Indicators | | | | | | |
| University Rank | 0.278 | 0.248 | -0.030 | -0.067 | -44.747 | *** |
| Judge Age (log) | 0.023 | 0.004 | -0.020 | -0.183 | -121.491 | *** |
| Num. Plaintiffs | 0.000 | 0.000 | -0.000 | -0.002 | -1.338 | |
| Num. Respondents | 0.000 | 0.000 | -0.000 | -0.002 | -1.338 | |
| Num. Other Parties | 0.000 | 0.000 | -0.000 | -0.002 | -1.338 | |
| Num. Third Parties | 0.000 | 0.000 | -0.000 | -0.002 | -1.338 | |
| Gov. Plaintiffs | 0.000 | 0.000 | -0.000 | -0.002 | -1.338 | |
| Gov. Respondents | 0.000 | 0.000 | -0.000 | -0.002 | -1.338 | |
| Claim Amount (log) | 0.157 | 0.195 | 0.038 | 0.100 | 66.583 | *** |
| Total Cases: | 763,576 | 1,055,200 | | | | |

*** p<0.01, ** p<0.05, * p<0.1 This table shows balance across the treatment group (cases assigned to corrupt judges) and the control group (cases assigned to the non-corrupt judges) for the Moscow and Moscow Oblast sample. The leftmost columns show raw means and standard deviations for each group. The difference in means is shown both as raw and as standardized, with a Z-score from a hypothesis test.

TABLE A3: PREFERENTIAL TREATMENT FOR LARGE FIRMS: ROBUSTNESS

| | Private-Private Cases | | | |
|-------------------------------|-----------------------|----------------------|------------------------------|----------------------|
| | Moscow | Moscow Region | Larger Firm Wins pre-2014 | post-2014 |
| | (1) | (2) | (3) | (4) |
| Hidden Earnings Ratio | 0.007** (0.003) | 0.003 (0.003) | 0.005** (0.003) | 0.007** (0.003) |
| Judge Top 5 Category | -0.004 (0.005) | 0.007 (0.013) | -0.007 (0.018) | 0.008 (0.009) |
| Judge University Rank | -0.003*** (0.001) | -0.001 (0.002) | -0.002 (0.002) | -0.002*** (0.001) |
| Judge Num. Cases (Cumulative) | -0.002 (0.004) | 0.004 (0.004) | -0.011* (0.006) | 0.002 (0.003) |
| Judge Age (log) | 0.0002 (0.009) | 0.002 (0.021) | -0.002 (0.010) | -0.003 (0.008) |
| Judge Num. Cases in Month | 0.023*** (0.006) | 0.016** (0.006) | 0.004 (0.006) | 0.027*** (0.006) |
| Judge Num. Cases in Quarter | -0.012** (0.005) | 0.004 (0.007) | 0.015** (0.007) | -0.012*** (0.003) |
| Judge is Female | -0.002 (0.004) | -0.004 (0.006) | 0.003 (0.006) | -0.003 (0.003) |
| Case Claim Amount (log) | -0.030*** (0.005) | -0.027*** (0.005) | -0.024*** (0.006) | -0.030*** (0.005) |
| Case Num. Plaintiffs | 0.037** (0.017) | 0.052*** (0.013) | 0.025 (0.020) | 0.044*** (0.014) |
| Case Num. Respondents | 0.024*** (0.007) | -0.002 (0.012) | 0.035*** (0.007) | 0.016** (0.007) |
| Moscow Oblast Court | | | -0.015** (0.007) | -0.017* (0.009) |
| Start Month, Category FE | Yes | Yes | Yes | Yes |
| Case Size | All | >\$25,000 | >\$100,000 | All |
| Observations | 181,037 | 51,351 | 42,820 | 189,568 |
| R ² | 0.122 | 0.121 | 0.178 | 0.109 |

*** p<0.01, ** p<0.05, * p<0.1 The outcome variable is whether the larger firm (by revenue) won civil cases where both plaintiff and defendant are private firms. Column 1 subsets the same only to cases heard in the city of Moscow, while Column 2 subsets to only those heard in Moscow region. Column 3 subsets cases heard before the court reorganization in 2014, while Column 4 includes those heard afterwards. All models include fixed effects for the month the case began and the detailed case category. Standard errors are clustered on case category.