

# Self-Selection Into Public Service When Corruption is Widespread: Evidence from Post-Soviet Russia<sup>\*</sup>

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## Abstract

Drawing on experimental games and surveys conducted with students at two universities in Russia, we compare the behavioral, attitudinal, and demographic traits of students seeking public sector employment to the traits of their peers seeking jobs in the private sector. Contrary to similar studies conducted in other high-corruption contexts, such as India, we find evidence that students who prefer a public sector career display *less* willingness to cheat or bribe in experimental games as well as *higher* levels of altruism. One interpretation of these findings is that corruption in Russia results from the transformation of bureaucrats' behavior and attitudes after entering the civil service, rather than through a process of corrupt self-selection. Another interpretation is that despite widespread corruption, state employment in Putin's Russia genuinely attracts at least some of the younger generation for idealistic reasons beyond personal enrichment or job security. Implications of these and other interpretations for the creation of effective anti-corruption policies and for understanding of state capacity in contexts where corruption is widespread are discussed.

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Over the past several decades, scholars have accumulated extensive evidence of corruption’s negative consequences, ranging from reduced levels of investment to the undermining of political institutions.<sup>1</sup> Yet understanding of how corruption – defined here as the use of public office or resources for private gain – proves so resilient, even in the face of widespread reform efforts, has lagged far behind.

Recent research points to the disturbing possibility that in countries where corruption is widespread, citizens driven more by personal financial gain than a sense of public service self-select into government bureaucracies with the aim of using public office for illicit enrichment. As a result, corruption becomes a self-reinforcing phenomenon, a process formalized in models by Barfort et al. (2015) and Klašnja et al. (2016).

In the high-corruption context of India, for example, economists such as Banerjee et al. (2015) find that university students preparing for a career in the civil service are more likely to embezzle in a laboratory corruption game than students enrolled in business school. Hanna and Wang (2017) similarly find that among Indian university students, aspiring civil servants are more likely to cheat in laboratory experiments than their peers aspiring to careers in the private sector. Indian students intending to pursue a civil service career also display lower levels of altruism, as measured by willingness to sacrifice personal financial gain in favor of charitable contributions when playing a modified dictator game.

In the low-corruption context of Denmark, by contrast, Barfort et al. (2015) find the opposite. Aspiring civil servants in Denmark are less likely than students who plan on pursuing a private sector career to cheat in laboratory experiments and display higher levels of altruism. Standard indicators of “public service motivation” – a distinct set of attitudinal traits such as commitment to public values, compassion, and self-sacrifice that public administration scholars have found to distinguish public employees from their private sector counterparts in many Western countries (Perry and Wise, 1990; Perry, 1996) – also are robust predictors of who pursues a civil service career in Denmark.

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<sup>1</sup>On corruption’s consequences, see Olken and Pande (2012, 491-495) and Svensson (2005, 36-39).

Together, these findings suggest that *who chooses* to become a state official is of critical importance for understanding why corruption persists in some countries more than in others. However, nearly all prominent studies seeking to understand corruption’s persistence instead emphasize incentives faced by state officials *once in office*, including factors such as low wages, ineffective monitoring, and low levels of transparency (for a review, see Olken and Pande 2012, 496-503). As a consequence, with the exception of the handful of studies cited above, remarkably little is known about the extent to which individuals with a willingness to engage in corruption self-select into or out of the public sector in various countries.<sup>2</sup>

This article, along with a companion study on Ukraine, is the first to expand the study of corrupt self-selection to the post-communist region.<sup>3</sup> Drawing on experimental games and surveys with 804 students at a top Russian university located in Moscow and 376 students from a major regional university located in Russia’s Ural Federal District, we compare the behavioral, attitudinal, and demographic traits of students seeking public sector employment to the traits of their peers seeking jobs in the private sector.

Recognizing that corruption is a sensitive topic, our approach employs experimental games utilizing incentive payments to elicit observable behavior and reveal participants’ preferences. Our first game measures propensity for dishonesty using an online dice task developed by Barfort et al. (2015). Respondents were asked to guess a number between 1 and 6 and then self-report whether their guess matched a randomly generated outcome of a dice roll, an exercise that was repeated 40 times. Participants received higher payoffs for correct guesses, creating an incentive to cheat. The multiple rounds of guesses then facilitated estimation of individuals’ cheat rates based on a comparison of reported distributions to the

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<sup>2</sup>The one other study of which we are aware, Alatas et al. (2009), finds no differences in a laboratory corruption game across Indonesian students aspiring to public and private sector careers. However, self-selection was not the primary focus of this study, and the null result may reflect a small sample size.

<sup>3</sup>The companion article focuses on corrupt self-selection more narrowly in the judicial sector, rather than on civil servants in general. As in studies of India, we find that Ukrainian students aspiring to public sector legal professions such as judges or prosecutors are more likely in laboratory games to cheat and bribe, and less likely to display altruism, than their counterparts pursuing private sector legal careers. For a broader discussion of who seeks to become a civil servant in Russia, see Rosenfeld (2018).

expected distribution of successful guesses. Our second game consists of a modified version of Barr and Serra’s (2010) bribery experiment, in which participants are randomly assigned to the role of a citizen or a bureaucrat. The citizen is presented with a scenario in which she can increase her payoff by offering the bureaucrat a bribe to obtain a permit. Whether participants offer (in the role of citizen) or accept (in the role of bureaucrat) a bribe serves as an indicator for willingness to engage in corrupt behavior. Finally, to measure pro-social behavior we use a modified dictator game in which participants received a sum of money which could be retained or donated to Russian charities.<sup>4</sup>

Contrary to expectations based on existing studies, we find evidence that despite pervasive public-sector corruption, individuals in Russia with a propensity to engage in corruption self-select *out* of public service. Among university students in the Moscow study, respondents aspiring to the civil service are less likely to cheat and bribe in experimental games, and more likely to engage in pro-social acts such as donating to charities, than students seeking private sector careers. Analyses based on non-experimental survey indicators of corruption and public service motivation also support these findings. In other words, at least at this elite university, Russia’s aspiring civil servants look more like Denmark’s than India’s.<sup>5</sup>

Given that alumni of our Moscow research site occupy important posts throughout the Russian government, our findings from the Moscow study in and of themselves are worthy of recognition. But beyond our initial study we were able to replicate many of our results at a regional university, suggesting that our findings offer insights into a trend that extends beyond Russia’s capital city. Moreover, the findings are not merely artifacts of differences across academic departments (e.g., economics versus public administration students), nor

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<sup>4</sup>Our research design, intended use of these three experimental games, and hypotheses were pre-registered with EGAP (for the Moscow study) and with the Open Science Framework (for the regional study). These pre-analysis plans are included in Section H of the Online Appendix.

<sup>5</sup>We recognize that many students aspire to government employment for pragmatic reasons, such as job security or good benefits, rather than for the pursuit of personal gain or idealistic public service goals. We briefly discuss these issues in Section 3.4 and at greater length in Section D.4 of the Online Appendix.

can they be explained by respondents' levels of risk aversion, gender, family income, or other factors that could potentially confound results.

Several interpretations are consistent with our findings, each with important implications for the creation of effective anti-corruption policies and, more broadly, for understanding the nature of state capacity in contexts where corruption is widespread. One interpretation is that the universities where we conducted our study are outliers, or what other scholars have referred to as “islands of integrity” – government institutions or agencies within an otherwise corrupt system where social norms of probity prevail (see discussion in Prasad et al. 2018). If correct, this interpretation calls for better understanding of what sets apart these outliers and how their uniqueness can be replicated. A second interpretation is that in Russia corruption results more from the transformation of bureaucrats' behavior and attitudes after joining the civil service, rather than from a process of corrupt self-selection. This interpretation points to the need for more research on the indoctrination process of bureaucrats over time. A third interpretation is that despite widespread corruption, state employment in Putin's Russia genuinely attracts at least some of the younger generation for idealistic reasons beyond personal enrichment and job security. Though controversial, this interpretation is in line with recent research by scholars such as Taylor (2018) and Treisman (2018) demonstrating that Russia's ruling class and state apparatus frequently do not act like a typical kleptocracy, but instead pursue a number of policies aimed at improving the welfare of citizens or achieving geopolitical objectives. Although comprehensive analysis of these issues is beyond the scope of this article, we briefly evaluate these and other interpretations of our results in Section 4.

Beyond extending the study of corrupt self-selection to the post-communist region, we make several contributions to this emerging line of research. First, we show that at least in some countries with widespread corruption, there are significant pockets – and perhaps even broader trends – of aspiring civil servants motivated by public service ideals rather than illicit self-enrichment. Second, unlike earlier studies, we investigate multiple measures of career preferences and disaggregate public sector employment into distinct career paths

such as federal government, regional government, and what in Russia is referred to as the “budget sector” – state employees in sectors such as public health, education, science, and culture. Strikingly, we observe similar trends with respect to all types of public sector careers, although the findings are most robust for respondents aspiring to budget sector careers. Third, whereas earlier studies have employed experimental games either to measure dishonesty *or* propensity for corruption, we utilize two distinct games to measure both. Although indicators from these two games are highly correlated, the results from our regional study, in which aspiring civil servants are less likely to bribe but more likely to cheat, suggest that in certain contexts substantive differences between these indicators may exist.

The following section provides context for the setting of our study. Section 2 then discusses issues of measurement, research design, and data collection. In Section 3 we present our primary analyses, while Section 4 discusses possible interpretations of our findings.

## 1 Background on Research Setting

Russia is a highly appropriate research setting for a study on corrupt self-selection given its combination of high corruption levels and rising interest in public sector employment among the younger generation. In 2017 the watchdog agency Transparency International’s Corruption Perception Index (CPI) ranked Russia 135th out of 180 countries and territories. For point of reference, India was ranked 81st, while the United States occupied 16th place. Denmark held the second spot, topped only by New Zealand. Meanwhile, Transparency International’s Global Corruption Barometer (GCB), which directly polls citizens about their encounters with corruption, shows that in 2016 – the most recent year for which data are available – 34 percent of Russians reported paying a bribe when accessing basic government services. Evidence of bribery was even more widespread in India, with 69 percent of Indian citizens reporting the payment of a bribe during the previous year, a stark contrast to 7 percent of US and 1 percent of Danish citizens.<sup>6</sup>

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<sup>6</sup>For CPI data, see [transparency.org/cpi2017](https://www.transparency.org/cpi2017); for GCB data, see [transparency.org/research/gcb/overview](https://www.transparency.org/research/gcb/overview). GCB data for India are from 2017; for the US and Denmark, from 2013. That petty bribery is more

There is little evidence that corruption in Russia, which has consistently ranked in the bottom quartile of the CPI rankings since 2000, is declining over time. Yet substantial shifts have occurred with respect to government employment's allure. According to a periodic nationally representative omnibus survey conducted by Russia's Public Opinion Foundation (FOM), a non-governmental research organization, in 1998 just 6 percent of respondents perceived employment in public administration to be a popular career path for Russian youth. By 2011 this figure had risen to 19 percent.<sup>7</sup> Beyond survey data indicating a growing interest in government employment, in the late 2000s a number of journalists noted a significant increase in applications to study Public Administration at universities throughout the country. In 2010, for example, Moscow State University's School of Public Administration received 18 applications for every position, compared to 11 per position in bioengineering, 10 per position in economics, and 10 per position in world politics, the next most popular departments (Bogdanova, 2010). (In Russia, students apply to specific departments at a university, rather than to the university itself.)

Observers of these trends have largely come to the conclusion that rising interest in public sector employment in Russia reflects, at least in part, the aspirations of young people to exploit public office for personal gain. Russia has longstanding bureaucratic traditions under which bureaucrats served not the people but whomever held power – first the Tsars and then the Communist Party – and subsisted on gifts, sometimes involuntary, from the local population (Ryavec, 2005). As Houston (2014, 847) writes, this history has led to a bureaucratic culture “devoid of a public service ethos” and a civil service that “did not function to serve the people, but to control and pilfer from them.” Moreover, unlike most of the developing world, in which public sector employees frequently enjoy a wage premium over private sector counterparts, the opposite holds true throughout much of the post-communist

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widespread in India than in Russia, yet Russia is rated lower in the CPI rankings, may suggest that experts perceive a significant degree of high-level corruption in Russia, a point to which we return in Section 4.

<sup>7</sup>The surveys posed the question: “In your opinion, which professions today are the most popular among young people?” Data are available at [bd.fom.ru/pdf/d09pp11.pdf](http://bd.fom.ru/pdf/d09pp11.pdf).

world, including Russia (Finan et al., 2017; Gimpelson et al., 2015). From this vantage point, if Russian students motivated more by pecuniary gain than public service aspire to public sector careers, it follows that they may be galvanized by expectations of illicit sources of income supplementing official salaries. Indeed, in 2011 none other than Dmitry Medvedev, Russia’s president at the time, expressed exactly this concern: “It worries me that young people want to become government officials. . . . [M]any questions arise when young people choose the route of government service. . . . Is it a prestigious profession? Not really. Does it pay well? It pays poorly. It means that they are choosing this route because it is a way to quickly get rich – corruption” (*Vzglyad*, July 14, 2011). Meanwhile, in surveys, both experts and Russian citizens express the view that civil servants in Russia rarely enter the public sector out of a desire to improve society or serve the Russian people (Bartsits et al., 2018).

To date, however, these propositions have not been rigorously tested, and the evidence presented below offers a distinctly different perspective.

## 2 Data Collection and Research Design

### 2.1 Implementation – Moscow Study

Our first study was conducted in Moscow with undergraduate and masters students at one of Russia’s top-five universities, with a focus on students in social science departments. Students were recruited using flyers, emails, and classroom announcements by research assistants. We also allowed students to invite other students to participate via a module at the end of the online survey.<sup>8</sup> Eight hundred and four students participated. We focused on social science students because this population contains a significant number of individuals both with an interest in and a realistic possibility of obtaining government employment yet also exhibits significant variation in career goals, both across but also within departments. (Details of the sample compositions for both the Moscow and regional study are presented

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<sup>8</sup>We adopted this recruiting approach because of concerns about the feasibility of recruiting a sufficient number of students, given that studies using student subject pools are relatively novel in Russia.

in Section B.1 of the Online Appendix.) Following a brief pilot, data were collected between May 27 and June 15 of 2016.

The survey and experimental games were conducted online using Qualtrics. Median participation time was 37 minutes. We chose to conduct the study online rather than in a laboratory to facilitate higher participation rates and because we were aiming to develop an approach that could be easily replicated at other universities. While an online study entails less control over the research environment and lower attentiveness on the part of research participants, we believe that higher participation rates, lower costs, and superior scalability outweigh these drawbacks. Moreover, recent research demonstrates the consistency of results across laboratory and online experiments (see, e.g., Dandurand et al., 2008; Clifford and Jerit, 2014), and to further mitigate concerns about participants' attentiveness, we employed screener questions (Berinsky et al., 2014). As discussed below, the overall level of attentiveness was high, and results are robust to the exclusion of inattentive participants.

Students were required to appear in person to present a unique, randomly generated code received at the end of the online study in order to receive their incentive payments. All participants received a minimum of 500 rubles and had the opportunity to earn up to 2000 rubles, depending on their responses during the experimental games. On average, participants received approximately 1050 rubles, or approximately 14 USD at the time of the study. It was made clear to participants that the payoffs for each of the four experimental games were independent and that their total payoff would be the sum of their earnings from across the games. All experimental games were conducted at the outset of the study to ensure that responses to survey questions would not influence participants' choices.<sup>9</sup>

## 2.2 Implementation – Regional Study

To assess whether trends we identified in our first study extend beyond elite Moscow-based universities, we conducted a second study at a regional university in Russia's Ural Federal

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<sup>9</sup>Participants first engaged in a modified dictator game, then in 20 rounds of the dice task game, then in the bribery game, then in a lottery game measuring risk aversion, and then in another 20 rounds of the dice task game. Survey questions then followed.

District, again with undergraduate and masters social science students. We used the same approach to recruitment as in the Moscow study, but recruiting in Russia’s regions proved challenging. Three hundred seventy six students participated, lower than our pre-registered target of 700. Data were collected between December 8, 2017 and January 22, 2018.

The research instruments were identical to those used in Moscow, with the exception that, in accordance with the regional labor market, incentive payments for all games were reduced.<sup>10</sup> Median participation time was 36 minutes, approximately the same as in Moscow. Levels of attentiveness, however, were lower, an issue we return to below. Payments were made via participants’ mobile phones following the study’s completion. All participants received a minimum of 300 rubles and had the opportunity to earn up to 1000 rubles. On average, participants received approximately 590 rubles, or approximately 9 USD at the time of the study.

## **2.3 Measurement**

### **2.3.1 Measuring Dishonesty and Corruption**

Measurement of illicit behavior presents significant challenges. Respondents may be unlikely to respond forthrightly to survey questions pertaining to dishonesty or corruption. Approaches developed in behavioral economics mitigate these challenges by using incentive payments to elicit observable behavior, from which participants’ preferences can be inferred by the choices they make when actual financial loss or gain results from their decisions. To measure dishonesty and willingness to engage in corruption, we employed two games:

*Dice Task Game* We use the dice task game developed by Barfort et al. (2015) to measure dishonesty (see also Hanna and Wang 2017 and Fischbacher and Föllmi-Heusi 2013). Respondents were asked to imagine a dice roll, guess a number between 1 and 6, and then click to the next screen. On this screen a picture of a dice was shown with a randomly

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<sup>10</sup>Payoffs for the bribery and donation games were reduced by exactly half, while in the dice task game participants received three times more for a correct guess (9 rubles versus 3), directly proportional to the Moscow study (15 rubles versus 5).

generated outcome. Participants were then asked to record the number they had imagined and then click to the next screen. For correct guesses, participants earned 15 rubles.<sup>11</sup> For incorrect guesses, participants received 5 rubles. Since there was no way for our research team to observe participants' guesses, an incentive existed to dishonestly report guesses that matched the randomly generated outcome in order to increase one's payoff. Participants engaged in 20 rounds of this exercise at two points in the study, for a total of 40 rounds. A participant who cheated in every round received 600 rubles. An honest participant on average would guess between 6 and 7 rolls correctly, resulting in a payoff of just over 265 rubles. Comparison of a participant's number of correct guesses reported to the expected distribution of correct guesses under the assumption of honest reporting allows for estimation of the participant's cheat rate. The full scripts in Russian and the English translation for this and all other games can be found in Sections A.1-A.4 of the Online Appendix.

*Corruption Game* Whereas the dice task game focuses narrowly on willingness to increase one's payoff by acting dishonestly, the bribery game encompasses multiple dimensions of a real-world bribery experience: the question of ethical norms, strategic uncertainty about whether a bribe will be accepted, and the potential harm to other members of society. Our bribery game builds off Barr and Serra (2010) (see also Abbink et al. 2002 and Cameron et al. 2009). All participants were given 350 rubles at the game's outset. We then randomly assigned participants to the role of citizen or bureaucrat and presented the citizen with a scenario in which she could receive an additional 450 rubles by obtaining a permit. When she seeks to obtain the permit, she is denied and given the chance to offer a bribe to the bureaucrat of a value ranging from 50 to 350 rubles. Bribing entails a risk of punishment, so for offering a bribe the citizen loses 100 rubles, regardless of whether the bureaucrat accepts the offer.<sup>12</sup> The bureaucrat then decides whether to accept, incurring a fine of 150 rubles for

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<sup>11</sup>All references to monetary amounts in this section refer to the Moscow study. See footnote 10 for specifics about payoffs for the regional study.

<sup>12</sup>To avoid conflating measurement of risk aversion and aversion to corruption, we chose, following Barr and Serra (2010), not to make punishment probabilistic.

engagement in corruption, a cost larger than that imposed on the citizen to reflect the greater societal harm that results when officials act corruptly. If the bureaucrat accepts the bribe, the citizen receives the permit and the correspondingly higher payoff.<sup>13</sup> A completed bribe transaction also results in two additional participants (chosen at random) each incurring a loss of 50 rubles, representing the harm that corruption inflicts on society at large.

Payoffs were set up so that the bureaucrat is strictly better off accepting a bribe of 200 or more rubles and indifferent between accepting and rejecting a bribe of 150 rubles. Conditional on the bureaucrat's acceptance of the bribe, the citizen is strictly better off offering a bribe of 300 or less and indifferent between offering or not offering a bribe of 350 rubles. From a purely strategic perspective, citizens maximize their earnings by offering 200 rubles, an offer that a self-interested bureaucrat should accept. However, if the bureaucrat incorporates considerations other than financial payoffs into her decision and rejects the citizen's offer, the citizen is strictly worse off, receiving a payoff of 250 rubles rather than the 350 rubles with which she began the game. The indicators in which we were interested include whether an individual offers (in the role of citizen) or accepts (in the role of bureaucrat) a bribe.

*Non-Experimental Measures* In addition to the two games described above, we employed a World Values Survey question asking respondents to assess the extent to which accepting a bribe in the course of one's official duties can be justified.

### **2.3.2 Measuring Public Service Motivation**

*Pro-Social Preferences Game* Following Banuri and Keefer (2013), Hanna and Wang (2017), and Barfort et al. (2015), we measured pro-social preferences using a variant of the dictator game in which participants were allotted 400 rubles and then could choose to donate any amount from 0 to 400 rubles (in increments of 50) to one of four Russian charities. Actual donations were made in accordance with the participants' preferences. The game therefore

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<sup>13</sup>We use strategy elicitation for the bureaucrat role, in which the participant indicates whether she would accept or reject each possible bribe amount. After the study concluded, payoffs were determined by randomly sorting participants into pairs of citizens and bureaucrats. This process was made explicit to participants.

places participants in a scenario that encompasses a direct tradeoff between personal financial gain and efforts to promote broader societal goals.

*Non-Experimental Measures* While the dictator game offers data based on decisions with a direct financial impact on participants, it measures only a single dimension of pro-social behavior. We therefore also employed a 16-item version of the Public Service Motivation (PSM) index developed by Kim et al. (2013). This version of the index builds on the original index created by Perry (1996) but was designed by an international team of scholars to account for cross-cultural distinctions. The index consists of an unweighted average of a series of attitudinal questions measuring four dimensions of PSM: (1) attraction to public service, (2) commitment to public values, (3) compassion, and (4) self-sacrifice. We additionally presented participants with a series of questions asking them to evaluate the importance of 10 job attributes, including intrinsic attributes, such as valuing a job that improves society, helps others, or involves interesting work; extrinsic attributes, such as a high income, promotion opportunities, networking opportunities, or prestige; and pragmatic attributes, such as job security, good benefits, or a convenient schedule. After using factor analyses to confirm that intrinsic, extrinsic, and pragmatic attributes cluster into three groups, we created three job attribute indices based on unweighted averages.<sup>14</sup> The English versions and Russian translations of these job attribute questions and the questions on which the PSM index is based can be found in Sections A.5 and A.6 of the Online Appendix.

### **2.3.3 Measuring Career Preferences**

We measured career preferences in multiple ways. The first is a dichotomous indicator for which respondents were asked to indicate which of the following best describes their career preferences: a job in the private sector (*chastnyy sektor*) or a job in the public sector (*gosudarstvennyy sektor*). The second approach asked respondents to rate their likeliness of choosing specific career paths on a scale of 1 to 7, where 1 represents “very unlikely” and

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<sup>14</sup>For the regional study, promotion opportunities loaded onto the pragmatic rather than extrinsic factor and accordingly were included in the pragmatic attributes index.

7 represents “very likely.” Nine career paths were evaluated: federal government, regional or local government, the government “budget sector” (e.g., public health, science, education, culture), private corporations, small or medium-sized business, ownership of a private business, banking or finance, consulting, and the non-profit sector. As a robustness check, we also asked respondents to consider the distinction between the job they would like to have (i.e., career preferences) and the job they are most likely to have (i.e., career expectations) upon graduating. They were then asked to rate the likeliness of near-term employment in each of the previously stated career paths, again on a 1 to 7 scale.

### **2.3.4 Other Measures**

To measure risk aversion, we used a series of seven paired lottery choices in which participants selected between a series of fixed payoffs and lotteries with a 50 percent chance of receiving no payment and a 50 percent chance of receiving a higher payment (see Holt and Laury 2002). The indicator of interest is the number of certain payoffs an individual chooses before switching to a riskier – though potentially higher paying – lottery. We additionally collected a wide variety of data on demographic indicators that have been shown or hypothesized to influence career preferences, including gender, age, class year (i.e., first-year, second-year, MA student), field of study, home region, relatives’ occupations, family income, and ability (measured with grade point average and Unified State Exam (EGE) scores).

## **3 Analysis**

### **3.1 Descriptive Statistics from Experimental Games**

Given that studies using incentivized experimental games in Russia and the former Soviet Union are rare, we provide a brief descriptive overview of the findings before turning to the primary analyses. Additional descriptive statistics from the games can be found in Section C.2 of the Online Appendix. As can be seen in Panel A of Figure 1, only three percent of the sample in the Moscow study purely maximized payoffs by reporting 40 correct guesses in the dice task game. Sixteen percent reported 7 or fewer correct guesses – the amount of

or lower than the number of correct guesses an honest individual would be expected to make by chance. Approximately 70 percent of respondents reported 10 or more, despite the fact that the probability of honestly guessing right 10 or more times is around 12 percent. The sample mean of 15.4 correct guesses (see Panel A of Table 1) is equivalent to a cheat rate of 0.26 – in other words, on average participants cheated on about every fourth guess.<sup>15</sup> Levels of cheating were higher in the regional study. Panel B of Figure 1 shows that approximately 6 percent of the sample in the regional study maximized payoffs by reporting 40 correct guesses; around 12 percent of the sample reported 7 or fewer correct guesses; and just over 82 percent reported 10 or more correct guesses. The mean number of correct guesses – 21 – corresponds to an average cheat rate of 0.42.

In the corruption game, 56 percent of participants in the Moscow study assigned to the role of citizen offered a bribe, while 65 percent of participants assigned to the role of bureaucrat were willing to accept a bribe.<sup>16</sup> In total, 61 percent of participants offered or accepted. Meanwhile, while regional students cheated more than the Moscow students, they bribed less. Forty-five percent of participants assigned to the role of citizen offered a bribe, while 49 percent of participants assigned to the role of bureaucrat were willing to accept. In total, 47 percent of participants offered or accepted a bribe.

Finally, with respect to donations made to charity in the dictator game, only 11 percent of the Moscow study sample kept all rubles for themselves. Eighteen percent gave away their full initial endowment. The average donation was approximately 200 rubles, half of the 400 rubles with which each subject began the game. Similarly, in the regional study just under 10 percent of participants kept all rubles for themselves; just over 19 percent donated their full endowment; and the mean donation was 105 rubles, approximately half of the 200 rubles with which regional participants started.

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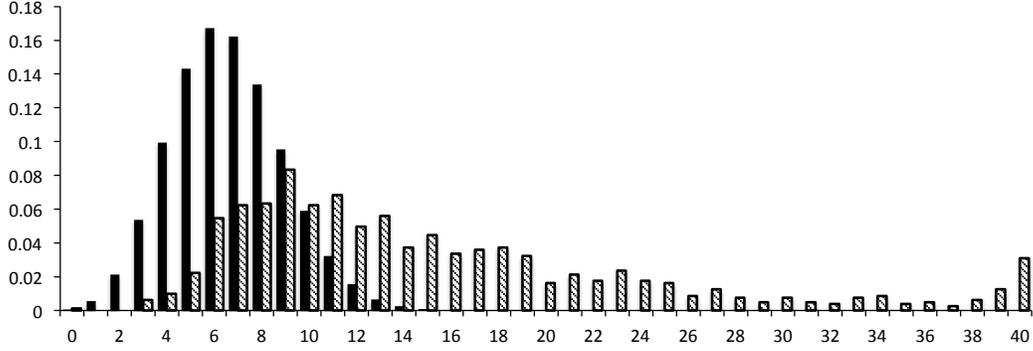
<sup>15</sup>See Section C.1 of the Online Appendix for the calculation of individual cheat rates.

<sup>16</sup>The disparity across roles is at least partly the result of the game's setup: As long as the bureaucrat refused to accept a bribe of less than 150 rubles, she retained at least the earnings with which she started the game. The citizen, by contrast, faced the risk of encountering an honest bureaucrat, in which case the citizen's bribe offer of any amount would be rejected, resulting in lower payoff.

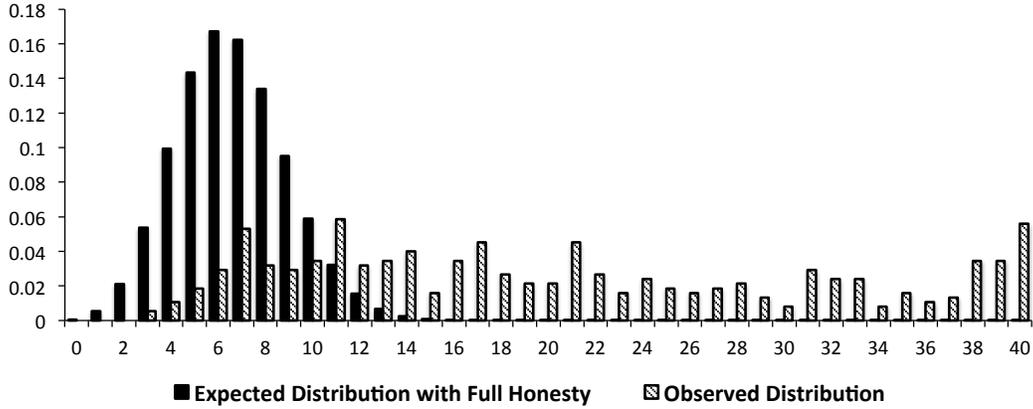
**Figure 1: Number of Correct Guesses for 40 Dice Rolls**

Observed Distribution vs. Expected Distribution with Honesty

**A. Moscow Study (N = 804)**



**B. Regional Study (N = 376)**



As show in Section C.3 of the Online Appendix, there is a robust positive correlation between the indicators of dishonesty and corruption, and both of these indicators are negatively correlated with donations in both the Moscow and regional studies. Additionally, experimental and non-experimental indicators are strongly correlated. Those willing to view bribes as justifiable cheated more in the dice game, bribed more frequently in the corruption game, and donated less in the dictator game. Conversely, higher PSM scores are associated with a lower probability of bribing and more donations. In the Moscow study, higher PSM scores are also correlated with lower cheat rates, but for the regional study there was no correlation between cheating and PSM.

**Table 1: Descriptive Statistics**

	<i>Moscow Study</i>					<i>Regional Study</i>				
	Mean	Std. Dev.	Min.	Max.	N	Mean	Std. Dev.	Min.	Max.	N
A. Experimental Variables										
Gave/Accepted Bribe	0.61	0.49	0	1	803	0.47	0.50	0	1	375
Correct Guesses	15.36	8.92	0	40	804	20.61	10.99	3	40	376
Donations	200.17	129.41	0	400	804	105.12	64.05	0	200	376
B. Non-Experimental Variables										
Bribe Justifiable	2.63	1.77	1	10	804	2.68	2.32	1	10	376
PSM Index	3.62	0.56	1.75	5	803	3.68	0.61	1.63	5	375
Intrinsic Job Attrib.	3.61	0.75	1.33	5	804	3.60	0.74	1.33	5	376
Extrinsic Job Attrib.	3.63	0.64	1.25	5	803	3.60	0.76	1.33	5	376
Pragmatic Job Attrib.	3.36	0.71	1	5	804	3.70	0.68	1.25	5	376
C. Dependent Variables										
Pub. Sector Preference	0.23	0.42	0	1	804	0.30	0.46	0	1	376
Public Sector Index	3.67	1.41	1	7	803	4.03	1.46	1	7	376
Federal Government	4.17	2.04	1	7	804	4.55	1.92	1	7	376
Budget Sector	3.60	1.79	1	7	804	3.39	1.87	1	7	376
Regional Government	3.25	1.83	1	7	803	4.16	1.90	1	7	376
Private Sector Index	5.02	0.99	1	7	804	4.93	0.94	1	6.8	376
Corporate	5.74	1.25	1	7	804	5.52	1.48	1	7	376
Business Owner	5.34	1.62	1	7	804	5.70	1.41	1	7	376
Small Business	5.10	1.43	1	7	804	5.24	1.41	1	7	376
Consulting	4.66	1.76	1	7	804	3.92	1.66	1	7	376
Finance	4.27	1.90	1	7	804	4.26	1.81	1	7	376
Non-Profit Sector	3.67	1.62	1	7	803	3.64	1.46	1	7	376

Note: See Section B.2 of the Online Appendix for descriptive statistics for control variables.

### 3.2 Descriptive Statistics On Career Preferences

When presented with a dichotomous choice, just under 23 percent of the sample for the Moscow study expressed a preference for government employment over a private sector career. Public sector preferences were more pronounced in the regional study, with 30 percent of the sample expressing a preference for government employment.

However, as can be seen in Panel C of Table 1, students express a much stronger preference for employment in the federal government than in regional or local governments or in the state budget sector, particularly in Moscow. On a scale of 1 to 7, where 1 represents “highly unlikely” and 7 represents “highly likely,” students on average rate their likeliness of choosing a career in the federal government a 4.17, compared to 3.60 for the budget sector and 3.25 for regional or local government jobs. For the regional study, students on average rate their

likeliness of choosing a career in the federal government a 4.55, compared to 4.16 for regional or local government and 3.39 for the budget sector.

To facilitate analysis of the factors predicting career preferences, we adopted several approaches for aggregating the public and private sector career ratings. The analyses that follow rely on the dichotomous indicator discussed above, as well as on a public sector preference index and private sector preference index. Factor analyses, presented in Section D.1 of the Online Appendix, show that the three public sector variables load cleanly onto one factor while the five private sector variables load cleanly onto a separate factor. Accordingly, we construct the public sector index as the unweighted average of the public sector variables and the private sector index as the unweighted average of private sector variables. (Creating the indices using factor scores rather than averages produces similar results.) Other approaches to reducing dimensionality, shown in Section D.2 of the Online Appendix, such as the use of metric multi-dimensional scaling (MDS) to create a unidimensional public-private career preferences scale, also produce similar results.<sup>17</sup>

### 3.3 Self-Selection and Career Preferences

We now turn to our primary analyses. The dependent variables of the OLS regressions presented in columns 1-6 in Table 2 are the public and private sector preference indices discussed above, which have been rescaled to mean zero and unit root so that coefficients can be interpreted as the change, measured in standard deviations, of these indices associated with a one unit change in the independent variables. The dependent variables of the linear probability models in columns 7-9 are the dichotomous career measure also discussed above.

Table 2 provides evidence of a substantively and statistically significant negative relationship between cheating or bribing and a preference for the public sector, and a positive relationship between cheating and bribing and a preference for the private sector. As can be seen in Panel A, subjects who offered or accepted a bribe in the corruption game on

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<sup>17</sup>We proposed the MDS approach in our pre-analysis plan but choose to present a more conventional approach here based on feedback received on working paper versions of this article. Note, however, that our results are *more* robust when using the MDS approach shown in Section D.2 of the Online Appendix.

**Table 2: Predictors of Career Preferences: Experimental Indicators  
Moscow Study**

<i>A. Corruption Game</i>									
Dep. Variable:	Public Sector Preference Index			Private Sector Preference Index			Binary Career Preference Indicator		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Gave/Accepted Bribe	-0.227** (0.072)	-0.166* (0.070)	-0.125† (0.072)	0.295*** (0.074)	0.227** (0.073)	0.210** (0.075)	-0.087** (0.031)	-0.053† (0.030)	-0.033 (0.030)
Gender/Department	no	yes	yes	no	yes	yes	no	yes	yes
Full Controls	no	no	yes	no	no	yes	no	no	yes
Observations	802	799	786	803	800	787	803	800	787
R-squared	0.012	0.120	0.153	0.021	0.086	0.099	0.010	0.128	0.186
<i>B. Dice Task Game</i>									
Dep. Variable:	Public Sector Preference Index			Private Sector Preference Index			Binary Career Preference Indicator		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Correct Guesses	-0.008* (0.004)	-0.005 (0.004)	-0.006 (0.004)	0.013** (0.004)	0.013** (0.004)	0.012** (0.004)	-0.002 (0.002)	-0.001 (0.001)	-0.001 (0.001)
Gender/Department	no	yes	yes	no	yes	yes	no	yes	yes
Full Controls	no	no	yes	no	no	yes	no	no	yes
Observations	803	800	787	804	801	788	804	801	788
R-squared	0.005	0.116	0.152	0.013	0.087	0.100	0.002	0.125	0.185
<i>C. Pro-Social Preferences Game</i>									
Dep. Variable:	Public Sector Preference Index			Private Sector Preference Index			Binary Career Preference Indicator		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Donations	0.044** (0.014)	0.033* (0.013)	0.041** (0.013)	-0.040** (0.013)	-0.029* (0.013)	-0.030* (0.014)	0.012* (0.006)	0.005 (0.006)	0.008 (0.006)
Gender/Department	no	yes	yes	no	yes	yes	no	yes	yes
Full Controls	no	no	yes	no	no	yes	no	no	yes
Observations	803	800	787	804	801	788	804	801	788
R-squared	0.013	0.121	0.160	0.011	0.079	0.095	0.006	0.126	0.187

Notes: The public and private sector preference indices are standardized versions of the indices discussed in Section 3.2. Higher values represent stronger preferences for the public and private sector, respectively. The binary career preference indicator takes a value of 1 for students preferring public sector and 0 for students preferring private sector employment. The full set of controls includes variables for gender, field of study, class year, ability (measured by GPA), risk aversion, family ties in the public sector, family income, and home region. Columns 1-6 present results from OLS regressions; Columns 7-9, from linear probability models. Robust standard errors in parentheses. † significant at  $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

average have a public sector index score more than one-fifth of a standard deviation lower than subjects who refused to partake in a bribe transaction, while bribers have a private sector index score that is nearly 0.30 standard deviations higher than non-bribers (columns 1 and 4, respectively). These relationships are robust to the inclusion not only of dummy variables for gender and field of study (columns 2 and 5), but also to fuller specifications that additionally control for class year, ability (as measured by GPA), risk aversion, family ties in the public sector, family income, and home region (columns 3 and 6).

Similarly, each additional correct guess reported in the dice game is associated with a 0.008 standard deviations decline on the public sector preference index, as shown in column 1 of Panel B, meaning that a subject who reported 40 correct guesses in the dice game on average has a rating of more than a quarter standard deviation lower than a subject who

reported 7 correct guesses, the number an honest individual would be expected to make by chance. Conversely, each additional correct guess reported in the dice game is associated with a 0.013 standard deviations increase on the private sector preference index, meaning that a subject who reported 40 correct guesses on average has a rating approximately 0.43 standard deviations higher on the private sector preference index than one who reported 7 correct guesses (column 4 of Panel B). Results concerning private sector preferences are particularly robust, remaining statistically significant when the full set of control variables are included.

Finally, there is a clear positive (negative) relationship between donation levels in the dictator game and preferences for public (private) employment. Each additional 50 rubles donated to charities is associated with approximately a 0.04 standard deviations higher rating on the public sector preference index and a 0.04 lower standard deviation on the private sector preference index, as shown in columns 1 and 4 of Panel C. In other words, on average participants who donated all 400 rubles of their initial endowment had a public sector preference rating of around one-third standard deviation higher, and a private sector rating of approximately one-third standard deviation lower, than those who donated nothing. All results concerning the relationship between donating and both the public and private career indices are robust to the inclusion of the full set of control variables.<sup>18</sup>

Results of linear probability models using the dichotomous career preference variable shown in columns 7-9 of Table 2 offer a similar picture, though these results are less robust, particularly when a full set of control variables are included.<sup>19</sup> Subjects who gave or accepted a bribe in the corruption game have about a 9 percent lower probability of preferring a public sector career (column 7 of Panel A). Meanwhile, each additional correct guesses reported

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<sup>18</sup>Not only are nearly all results robust to controlling for field of study, but we show in Section D.3 of the Online Appendix that our findings are robust even in analyses focusing on variation *within* departments. Within both the economics and public administration departments, the fields of study with the weakest and strongest public sector preferences, respectively, students who cheat and bribe more are less likely to express preferences for the public sector and more likely to express preferences for the private sector, while the converse is true for students who donate more.

<sup>19</sup>Logit models produce similar results.

is associated with a 0.2 percent lower probability of preferring a public sector career, as shown in column 7 of Panel B, indicating that subjects who reported 40 correct guesses on average have more than a 6 percent lower probability of preferring a public sector career than subjects reporting 7 correct guesses. Each additional 50 rubles donated in the dictator game is associated with a 1.2 percent increase in the probability of preferring a public sector career (column 7 of Panel C), indicating that on average a subject who donated all of her money would have a 9.6 percent higher probability of preferring public employment than a subject who donated nothing.

Table 3 presents results using non-experimental indicators of corruption attitudes, public service motivation, and respondents' evaluations of the importance of extrinsic and intrinsic job attributes when choosing a profession. Results are similar to those based on experimental indicators. Participants indicating a willingness to justify bribery express a higher preference for private sector careers, as can be seen in Panel B, although this result is not robust to the inclusion of the full set of control variables.<sup>20</sup> Meanwhile, the higher subjects score on the PSM Index, the higher their preference for public sector careers, as measured by the public sector preference index (Panel A) or the dichotomous career preference indicator (Panel C), and the lower their preference for private sector careers (Panel B). A final piece of evidence that altruistic students are self-selecting in, and students motivated by pecuniary gain self-selecting out, of public sector employment pertains to responses about which job attributes respondents value most. Respondents who value intrinsic job attributes – the opportunity to help others, benefit society, and do interesting work – are on average more likely to express a preference for the public sector, results that are again robust using either the public sector preference index or the dichotomous indicator (Panels A and C, respectively), and less likely to express a preference for the private sector (Panel B). By contrast, respondents who value

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<sup>20</sup>In models including both the “bribe justifiable” variable and the PSM index – which are negatively correlated – there is also a positive relationship between willingness to justify bribery and preference for public sector careers (see columns 9 and 10 of Panels A and C), which runs counter to our other findings. Further analysis revealed an interaction effect between these two variables: At very low (high) levels of PSM, willingness to justify bribery is positively (negatively) correlated with public sector preference.

**Table 3: Predictors of Career Preferences: Non-Experimental Indicators  
Moscow Study**

A. Public Sector Preference Index										
<i>higher values = higher preference for public sector</i>										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Bribe Justifiable	0.003 (0.019)	0.016 (0.019)							0.031 (0.019)	0.043* (0.019)
PSM Index			0.413*** (0.061)	0.382*** (0.059)					0.386*** (0.073)	0.364*** (0.070)
Intrinsic Job Attrib.					0.213*** (0.049)	0.198*** (0.048)			0.074 (0.057)	0.072 (0.056)
Extrinsic Job Attrib.							0.060 (0.054)	0.031 (0.052)	0.071 (0.054)	0.038 (0.053)
Full Controls	no	yes	no	yes	no	yes	no	yes	no	yes
Observations	803	787	803	787	803	787	803	787	803	787
R-squared	0.000	0.150	0.053	0.192	0.025	0.170	0.001	0.150	0.060	0.200
B. Private Sector Preference Index										
<i>higher values = higher preference for private sector</i>										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Bribe Justifiable	0.045* (0.019)	0.027 (0.020)							0.009 (0.018)	-0.001 (0.019)
PSM Index			-0.132 <sup>†</sup> (0.072)	-0.062 (0.070)					0.102 (0.077)	0.131 <sup>†</sup> (0.078)
Intrinsic Job Attrib.					-0.249*** (0.050)	-0.192*** (0.049)			-0.268*** (0.053)	-0.227*** (0.053)
Extrinsic Job Attrib.							0.484*** (0.058)	0.460*** (0.058)	0.473*** (0.056)	0.456*** (0.056)
Full Controls	no	yes	no	yes	no	yes	no	yes	no	yes
Observations	804	788	803	787	804	788	803	787	803	787
R-squared	0.006	0.092	0.005	0.089	0.035	0.109	0.097	0.172	0.129	0.192
C. Binary Career Preference Indicator										
<i>1=public sector pref., 0=private sector pref.</i>										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Bribe Justifiable	0.004 (0.009)	0.008 (0.008)							0.013 (0.009)	0.015 <sup>†</sup> (0.008)
PSM Index			0.118*** (0.025)	0.090*** (0.024)					0.108*** (0.029)	0.084** (0.027)
Intrinsic Job Attrib.					0.066** (0.020)	0.050** (0.019)			0.029 (0.023)	0.022 (0.022)
Extrinsic Job Attrib.							0.018 (0.024)	-0.004 (0.023)	0.020 (0.024)	-0.004 (0.023)
Full Controls	no	yes	no	yes	no	yes	no	yes	no	yes
Observations	804	788	803	787	804	788	803	787	803	787
R-squared	0.000	0.186	0.025	0.197	0.014	0.192	0.001	0.184	0.030	0.202

Notes: See note to Table 2 for full list of control variables. Panels A and B present results from OLS regressions; Panel C, from linear probability models. Robust standard errors in parentheses. <sup>†</sup> significant at  $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

extrinsic attributes – income, networking and promotion opportunities, prestige – are more likely to express a preference for the private sector (Panel B).<sup>21</sup>

In short, evidence presented from the Moscow study is overwhelmingly consistent with self-selection of students who are less prone to dishonesty and corruption, and more likely to demonstrate altruism, into the public sector. But to assess whether trends we identified

<sup>21</sup>In some specifications, not shown here due to space constraints, valuing pragmatic attributes such as job security and benefits also is associated with a public sector preference.

in our first study extend beyond elite Moscow-based universities, we conducted a follow up study at a regional university.

Due to the smaller sample size, our regional study was relatively underpowered. Nevertheless, even at a regional site, the evidence is relatively consistent with the self-selection of altruistic individuals with a lower propensity for corruption into the public sector. As can be seen in Table 4, participants who gave or accepted a bribe in the corruption game were less likely to express a preference for public sector careers, and participants' donation levels were positively associated with a public sector career preference. Not only the direction, but also the magnitude of the coefficients for both variables are remarkably similar to those in the Moscow study, regardless of whether the public sector preference index (columns 1-3) or dichotomous indicator (columns 7-9) is used. In contrast to the Moscow study, however, these selection effects appear to be driven primarily by preferences over public sector careers, as indicated by the lack of correlation between all experimental indicators and the private sector preference index in columns 4-6. Also in contrast to the Moscow study is a positive, and in some specifications statistically significant, relationship between cheating in the dice game and a preference for the public sector, a point to which we return shortly.

Results using non-experimental indicators are firmly in line with the findings from the Moscow study, as can be seen in Table 5. Participants who were more willing to justify bribery expressed a lower preference for public sector careers, although these results are robust only when using the dichotomous career preference indicator (Panel C). Both PSM scores and placing weight on intrinsic job attributes were positively associated with a public sector preference using both the public sector preference index and dichotomous indicator (Panels A and C), while those placing more weight on extrinsic job attributes were more likely to aspire to the private sector (Panel B).

Overall, the results of the regional study are similar to the results of the Moscow study, the prominent exception pertaining to the positive relationship between cheating in the dice game and a public sector employment preference. The divergent findings when using

**Table 4: Predictors of Career Preferences: Experimental Indicators  
Regional Study**

<i>A. Corruption Game</i>									
Dep. Variable:	Public Sector Preference Index			Private Sector Preference Index			Binary Career Preference Indicator		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Gave/Accepted Bribe	-0.228*	-0.196 <sup>†</sup>	-0.206*	0.004	-0.024	0.003	-0.077	-0.067	-0.079
	(0.103)	(0.102)	(0.104)	(0.104)	(0.103)	(0.103)	(0.047)	(0.047)	(0.048)
Gender/Department	no	yes	yes	no	yes	yes	no	yes	yes
Full Controls	no	no	yes	no	no	yes	no	no	yes
Observations	375	375	364	375	375	364	375	375	364
R-squared	0.013	0.045	0.107	0.000	0.026	0.102	0.007	0.024	0.064
<i>B. Dice Task Game</i>									
Dep. Variable:	Public Sector Preference Index			Private Sector Preference Index			Binary Career Preference Indicator		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Correct Guesses	0.011*	0.011*	0.010*	-0.001	-0.001	-0.001	0.004 <sup>†</sup>	0.004 <sup>†</sup>	0.004
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.002)	(0.002)	(0.002)
Gender/Department	no	yes	yes	no	yes	yes	no	yes	yes
Full Controls	no	no	yes	no	no	yes	no	no	yes
Observations	376	376	365	376	376	365	376	376	365
R-squared	0.014	0.048	0.105	0.000	0.024	0.097	0.009	0.026	0.059
<i>C. Pro-Social Preferences Game</i>									
Dep. Variable:	Public Sector Preference Index			Private Sector Preference Index			Binary Career Preference Indicator		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Donations	0.043*	0.035 <sup>†</sup>	0.027	-0.006	0.005	-0.004	0.011	0.007	0.008
	(0.020)	(0.020)	(0.021)	(0.020)	(0.020)	(0.021)	(0.009)	(0.010)	(0.010)
Gender/Department	no	yes	yes	no	yes	yes	no	yes	yes
Full Controls	no	no	yes	no	no	yes	no	no	yes
Observations	376	376	365	376	376	365	376	376	365
R-squared	0.012	0.041	0.097	0.000	0.024	0.097	0.004	0.019	0.054

Notes: See note to Table 2 for details about dependent variables and the full list of control variables. Columns 1-6 present results from OLS regressions; Columns 7-9, from linear probability models. Robust standard errors in parentheses. <sup>†</sup> significant at  $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

the cheating and bribery indicators suggest that previous studies' use of the former as a proxy for willingness to engage in corruption may be problematic. Measures of financially motivated dishonesty, while certainly a component of corruption, fail to account for the normative considerations involved when engaging in an act openly labeled as "bribery," the implications of harming others in society, and the strategic calculations required to navigate a bribe transaction – all of which are explicitly captured in our corruption game. Along these lines, our initial interpretation was that, particularly in a regional economy where private sector opportunities are more limited than in Moscow, students might perceive public employment – particularly federal government employment – as more lucrative with respect to *official* salaries. Accordingly, students most motivated by pecuniary considerations (to the point of being willing to cheat), yet who also see explicitly corrupt acts as crossing a line, might be more likely to express a public sector preference. Some evidence in favor of this

**Table 5: Predictors of Career Preferences: Non-Experimental Indicators  
Regional Study**

A. Public Sector Preference Index										
<i>higher values = higher preference for public sector</i>										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Bribe Justifiable	-0.030 (0.025)	-0.025 (0.026)							-0.006 (0.025)	-0.008 (0.027)
PSM Index			0.383*** (0.082)	0.339*** (0.086)					0.205† (0.107)	0.201† (0.109)
Intrinsic Job Attrib.					0.338*** (0.066)	0.281*** (0.071)			0.227* (0.088)	0.179† (0.092)
Extrinsic Job Attrib.							0.057 (0.067)	0.048 (0.070)	0.029 (0.067)	0.023 (0.071)
Full Controls	no	yes	no	yes	no	yes	no	yes	no	yes
Observations	376	365	375	365	376	365	376	365	375	365
R-squared	0.005	0.095	0.055	0.131	0.063	0.132	0.002	0.094	0.074	0.142
B. Private Sector Preference Index										
<i>higher values = higher preference for private sector</i>										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Bribe Justifiable	-0.006 (0.022)	-0.006 (0.023)							-0.010 (0.024)	-0.008 (0.024)
PSM Index			0.128 (0.092)	0.093 (0.093)					0.272* (0.115)	0.224† (0.117)
Intrinsic Job Attrib.					-0.057 (0.073)	-0.073 (0.076)			-0.229** (0.088)	-0.215* (0.090)
Extrinsic Job Attrib.							0.276*** (0.070)	0.269*** (0.069)	0.289*** (0.071)	0.284*** (0.071)
Full Controls	no	yes	no	yes	no	yes	no	yes	no	yes
Observations	376	365	375	365	376	365	376	365	375	365
R-squared	0.000	0.097	0.006	0.100	0.002	0.100	0.044	0.135	0.066	0.153
C. Binary Career Preference Indicator										
<i>1=public sector pref., 0=private sector pref.</i>										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Bribe Justifiable	-0.024* (0.010)	-0.025* (0.010)							-0.019† (0.010)	-0.021* (0.010)
PSM Index			0.096* (0.042)	0.091* (0.044)					-0.004 (0.053)	0.001 (0.053)
Intrinsic Job Attrib.					0.116*** (0.033)	0.106** (0.035)			0.111** (0.041)	0.100* (0.042)
Extrinsic Job Attrib.							-0.014 (0.034)	-0.012 (0.035)	-0.016 (0.034)	-0.017 (0.035)
Full Controls	no	yes	no	yes	no	yes	no	yes	no	yes
Observations	376	365	375	365	376	365	376	365	375	365
R-squared	0.015	0.066	0.017	0.065	0.035	0.079	0.000	0.052	0.045	0.090

Notes: See note to Table 2 for full list of control variables. Panels A and B present results from OLS regressions; Panel C, from linear probability models. Robust standard errors in parentheses. † significant at  $p < .10$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

interpretation is that, as discussed in Section 3.5 below, there is a positive association in the regional study between placing weight on extrinsic job attributes and preferences for federal government careers. It is also worth noting that this relationship between cheating and public sector preferences becomes weaker, whereas the findings related to bribing and donating – which are in line with the results from the Moscow study – become stronger, when analysis is limited to the most attentive participants in the regional study, as we discuss in Section

3.7 on robustness checks. In summary, for two of the three experimental indicators, and for all non-experimental indicators, the results in the regional and Moscow studies converge – and point to the opposite of corrupt self-selection.

### **3.4 Other Predictors of Career Preferences**

Although secondary to our focus on corrupt self-selection, we recognize that pragmatic considerations (e.g., job security or family connections) as well as a number of demographic traits may influence career preferences. In Section D.4 of the Online Appendix we discuss findings related to these covariates. Overall, we find some evidence that women, risk averse individuals, lower-ability subjects (as measured by GPA and university entrance exam scores), and citizens with relatives in the public sector are more likely to prefer public sector employment, although the robustness of these correlations varies across research sites and across different measures of career preferences.

### **3.5 Disaggregating Career Preferences**

Our study’s emphasis is on aggregated preferences for public versus private sector employment, but an advantage of our research design is the ability to disaggregate preferences for specific career paths. In Section D.5 of the Online Appendix we present separate regression analyses for the three public sector career variables – federal government, regional government, and budget sector. Overall, across all public sector careers, with the exception of the positive correlation between cheating and public sector preferences at the regional site discussed above, we find minimal evidence of the type of corrupt self-selection previous studies have identified in countries such as India.<sup>22</sup> To the contrary, bribers (and, at least in the Moscow sample, cheaters) seem to be selecting out, and altruistic students selecting in, to public sector employment. At both sites, the positive associations between PSM scores and all types of public sector employment are particularly pronounced. However, of the various

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<sup>22</sup>The one other partial exception being a weak positive correlation in some model specifications between the non-experimental indicator of willingness to justify bribery and preference for federal government careers in the Moscow sample.

public sector career paths, the self-selection of the most honest and altruistic into the public sector is most robust for the budget sector, while the types of individuals seeking federal government positions appear more similar to the types of individuals pursuing private sector careers. Whereas those who place value on intrinsic rather than extrinsic job attributes consistently express higher preferences for budget sector careers, the converse is true of those expressing preference for federal government careers.

### 3.6 Career Preferences vs. Actual Career Paths

Following other studies of corrupt self-selection (e.g., Banerjee et al., 2015; Barfort et al., 2015; Hanna and Wang, 2017), we focus on student preferences and/or intended careers. We additionally, however, made efforts to ascertain that career preferences reflect actual career paths. First, as noted in Section 2.3.3, we asked participants to evaluate not only career preferences but also the likeliness of being employed in a given career. Correlation coefficients between preferences and expectations for the three public sector positions are each around 0.60 for the Moscow study. For the regional study, correlation coefficients are 0.53 and 0.54 for federal and regional government careers, respectively, and 0.68 for budget sector careers. We then conducted our analyses using career *expectations* indices in place of the career *preferences* indices, and find our results to be robust (see Section E.1 of the Online Appendix).

Second, one year and two years after the Moscow study we contacted students who had graduated (and had agreed to participate in future research) to inquire about their current employment. We received 224 responses, of whom 41 were either not working or had decided to pursue post-graduate studies, leaving a sample size of 183. Of these, 20 percent (37 individuals) reported employment in the public sector, a figure remarkably similar to the 23 percent in the original sample who expressed a preference for public sector over private sector careers.<sup>23</sup> Moreover, the career preference variables in the original study are robust

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<sup>23</sup>Of these 37 subjects, 11 reported working for the federal government, 3 for the regional government, and 22 for the budget sector; an additional 5 reported working in the non-profit sector. If the same subject responded to both the 2017 and 2018 follow-up surveys, then our analyses employ the more recent information provided.

predictors of actual employment two years later. For example, those expressing a preference for the public sector were approximately 30 percentage points more likely to be employed in the public sector at the time of the 2018 follow-up survey, as can be seen in Section E.2 of the Online Appendix.

We additionally show in Section E.2 of the Online Appendix that cheating in the dice game and bribing in the corruption game, as well as willingness to justify bribery and placing value on extrinsic job attributes, are negatively associated with actual employment in the public sector, while donating in the dictator game, PSM scores, and placing value on intrinsic job attributes are positively associated. Despite the small sample size, cheating and donating are statistically significant in some model specifications, and the PSM indicator is statistically significant in nearly all. In short, the available evidence strongly indicates that our career preference measures offer insights into students' actual career paths following graduation.

### **3.7 Robustness Checks**

We conduct a number of robustness checks, which are discussed in greater detail in Section F.1 of the Online Appendix. Our results in the dice game are not driven by extreme cheaters (those who cheat in all rounds) or by increased cheating, possibly due to fatigue or boredom, as participants engage in multiple rounds of the game. Nor are results affected by variation in participants' previous knowledge of the types of experimental games we employed.

We additionally address potential concerns about our use of an online research instrument. Following Berinsky et al. (2014), we employed screener questions – trick questions that ask respondents to follow a precise set of instructions – to sort out attentive from non-attentive participants. Levels of attentiveness for the Moscow study were high: 97 percent answered at least one screener question correctly, while 83 percent of subjects answered both screeners correctly. We found no statistically significant differences in the play of attentive and non-attentive participants in the experimental games, and our primary results remain robust when we exclude subjects who failed to answer both screeners correctly, who fin-

ished the games and survey abnormally quickly (i.e., two standard deviations faster than the mean), or who participated via a computer or device in a public setting.

For the regional study, levels of attentiveness were lower than in Moscow: 90 percent answered at least one screener question correctly, but only 64 percent answered both correctly.<sup>24</sup> Less attentive participants cheated more frequently, and limiting analysis to the most attentive participants – those who answered both screeners correctly – reduces the magnitude of the positive correlation between cheating and public sector preference, while increasing the magnitude of the negative correlation between bribing and public sector preference and the magnitude of the positive correlation between donating and public sector preference, as shown in Section F.2 of the Online Appendix. Similarly, compared to Moscow, a much higher percentage of subjects in the regional study participated via a smartphone rather than a computer – 23 percent compared to 3 percent – despite instructions requesting that this be avoided due to concerns about attentiveness. Removing smartphone users from the sample has similar effects to removing inattentive students. In short, when limiting our analysis to the most attentive participants, our results concerning bribing and donating become more robust, while less evidence emerges in favor of the one result that fits least well with the findings of the Moscow study – the result concerning cheating.<sup>25</sup>

## 4 Discussion: Interpretation of Findings

Given that Russia’s overall levels of corruption remain high, our results indicating corrupt self-selection *out* of government bureaucracies raise a number of questions. How is it possible

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<sup>24</sup>The first screener question was identical in both studies, but the second differed because the question used in Moscow was about media usage, which risked creating confusion with respect to our question about newspaper readership discussed in Footnote 25.

<sup>25</sup>For the regional study, we additionally encountered a potential concern in that a Russian newspaper reported on the results of our Moscow study, based on a working paper found online, in the week prior to the launch of our regional study. To ensure that this did not affect our results, we asked participants whether they had previous knowledge of the study and, if so, from what source. Less than two percent of the sample – seven participants – indicate some prior knowledge based on newspapers. We also asked in general about students’ newspaper reading habits. Only seven percent of the sample reported being a regular reader of the newspaper in question, and our results are robust when excluding these participants.

that those who appear most likely to engage in corruption self-select out of government, yet public sector corruption remains widespread?

One possibility, of course, is to question the extent to which subjects' choices in experimental games reflect choices they make in real life. While an important consideration, we believe this concern should not be overstated, for previous studies have offered striking evidence of these games' external validity. Hanna and Wang (2017) test their dice game on government employees in India for whom they had administrative data on fraudulent absenteeism, the claiming of a paycheck for time not worked. They found a strong correlation between cheating in the dice game and willingness to defraud the government. Meanwhile, Barr and Serra (2010) demonstrate a remarkable connection between real-world conditions and outcomes in their bribery games conducted at Oxford University: Oxford students from foreign countries that rank poorly on global corruption indicators were significantly more likely to engage in corruption in the laboratory than students from low-corruption countries. Finally, a number of studies show that donations in laboratory games are strong predictors of real-world pro-social behavior such as charitable giving (see, e.g., Benz and Meier, 2008).

Assuming the external validity of our research design, there are at least four possible interpretations consistent with our findings, each of which has distinct implications for the effectiveness of particular anti-corruption strategies, the understanding of state capacity in regimes like Russia, and the interactions among corruption, public service, and state capacity more broadly. Although a thorough evaluation is beyond the scope of this article, we briefly present these interpretations and offer a preliminary assessment of each with the aim of developing an agenda for future research.

1. *Corrupt Public Sector vs. Rent-Seeking Private Sector*: One interpretation of our results is that for students who particularly value wealth, Russia's private sector offers more appealing opportunities than even a corrupt public sector, especially in Moscow.<sup>26</sup>

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<sup>26</sup>One might think that low ability students who value wealth might see a corrupt public sector as more appealing than the private sector, but we find no evidence of this when interacting the cheating and bribing variables with measures of ability, such as GPA and university entrance exam scores. We also find no subgroup effects among students with relatives in the public sector.

In part, such opportunities might pertain to rent-seeking, implying that anti-corruption efforts should focus not only on bureaucrats' extortion of bribes but also on the role of private sector actors in proactively corrupting public officials. But given that private sector salaries in Russia are on average higher than official public sector salaries, as discussed in Section 1, the self-selection of students motivated by pecuniary gain into the private sector could indicate expectations of lawful earnings rather than prospective illicit behavior. Indeed, survey evidence shows that Russians largely perceive the private sector as less corrupt than the public sector.<sup>27</sup> Moreover, even the finding that *relatively* more honest citizens – and citizens motivated less by personal enrichment than desire to improve society – seek public sector employment while their counterparts with opposite traits seek employment in the corporate and finance sectors merits attention, for this would seem more normatively desirable than having wealth-seeking individuals assume positions with direct control over public resources. Ultimately, whether self-selection into the private sector is driven by expectations of legal or illegal profit, this interpretation suggests that better understanding of how private sector opportunities can prevent individuals seeking financial gain from self-selecting into corrupt bureaucracies may be essential for designing effective anti-corruption campaigns.

2. *Islands of Integrity*: A second interpretation is that our research sites are outliers. Certainly, in a country as vast as Russia it would be reasonable to expect regional divides, as well as divides between elite and less competitive universities, and among some sub-populations it is possible that self-enrichment serves as the primary motivation to become a civil servant. That said, the finding of relatively similar trends at our second research site – a regional university – indicates that our results hold relevance beyond Moscow's top-tier universities. Moreover, even a finding that pertains uniquely to our sample is of substantive importance: The site of our first study, where our findings are strongest, is a large and prestigious educational institution whose graduates regularly go on to influential positions

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<sup>27</sup>Russians in recent years rate large corporations as less corrupt than regional and local governments as well as budget sector spheres such as medicine and education, and about as equally corrupt as federal government institutions. See <https://wciom.ru/index.php?id=236uid=9139>.

within the government. As of July 2018, alumni include two current ministers and three deputy ministers. Any patterns pertaining to these students offer insights into the workings of Russia’s bureaucracies and are important in their own right. Determining that our sites are outliers would also have important theoretical implications. A number of scholars have identified “islands of integrity,” institutions and agencies that are remarkably uncorrupt, even in societies where corruption is widespread (see Prasad et al. 2018).<sup>28</sup> The identification of such pockets of probity provides a foundation for a fruitful research agenda to further address the question of why aspiring civil servants at some universities are motivated by public service ideals even as self-enrichment motivates their peers at other institutions.

3. *On-the-Job Indoctrination vs. Corrupt Self-Selection*: A third interpretation is that idealistic aspiring public servants join the civil service but then either quickly leave or become more willing to engage in corruption, and perhaps less optimistic about improving society, throughout their careers. Buurman et al. (2012) provide some evidence of declining pro-social tendencies even among public sector employees in the Netherlands. Early in their careers they found Dutch bureaucrats more likely to sacrifice personal financial gain to make a donation to charity, but later in their careers these bureaucrats exhibit lower levels of pro-social behavior than their private sector counterparts. However, as shown in Section G of the Online Appendix, data from the World Values Survey and the International Social Survey Programme offer little evidence of such trends in Russia. Public sector employees appear less tolerant of bribery than their private sector counterparts, even controlling for gender, age, and education levels. Moreover, tolerance for bribery in the public sector (as well as in the private sector) is lower among older respondents. Public sector workers in Russia also are more likely to value the job attributes of helping others or benefitting society. And while

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<sup>28</sup>Strictly speaking, our research sites would not be islands of integrity per se but rather islands in which aspiring civil servants – though not necessarily the entire student body – show unusual levels of probity. We also cannot rule out the possibility that students at these universities who did not participate in our study act differently than those in the sample. Bear in mind, however, that our results are not contingent on *levels* of cheating, bribing or altruism, but on the *correlation* between these behavioral traits and career preferences. It is therefore unlikely that our findings simply are an artifact of sampling.

there is some evidence that public service motivation is lower among older respondents, the rate of decline appears to be similar among both public and private sector employees.

To be sure, these results should be interpreted with caution, as they rely on non-experimental indicators, and it may be the case that public officials are more concerned than private sector employees about answering survey questions related to corruption truthfully. Unfortunately, research on bureaucrats' evolving attitudes and behavior over time is scarce, both in Russia and elsewhere. Pursuing this line of inquiry may be essential for better understanding of systemic bureaucratic corruption, and whether anti-corruption efforts should place relatively more focus on screening efforts when selecting public sector employees or on incentive structures for bureaucrats once in office.

*4. Types of Corruption and Opportunities for Public Service:* A final interpretation that reconciles the coexistence of a corrupt bureaucracy with the self-selection of public service oriented civil servants draws on recently emerging research about the nature of the Russian state. This research depicts a system in which elites simultaneously engage in corrupt, self-enriching behavior while also implementing policies designed to improve society. As noted in Section 1, petty corruption in Russia certainly exists, but bribe rates are much lower than in India, despite Russia's overall lower ratings in cross-national corruption indices. This points to the possibility that high-level corruption plays an oversized role in Russia. But while such corruption has been extensively documented (see, e.g., Dawisha, 2014), scholars such as Treisman (2018, 4) have noted that "if corruption and theft are all the Kremlin cares about, it is puzzling how and why some difficult tasks, such as the reform and modernization of the Russian armed forces... still get done." Taylor (2018, 136-7) similarly observes that "decisions clearly sometimes are motivated by the desire to make real improvements in the lives of average Russians," and that "[t]his expectation among both the population and elites that the state must continue to provide certain services of a welfare state distinguishes Russian misrule from more authentic versions of kleptocracy."<sup>29</sup>

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<sup>29</sup>It may also be the case that Putin himself inspires interest in public service, as suggested by recent surveys showing that 76 percent of Russians age 18 to 30 see careers in state organs of security – Putin's

This perspective paints the Russian state as fundamentally different from states in which poorly paid lower-level bureaucrats' desire to engage in petty corruption serves as a primary motivator to join the civil service, as well as from pure kleptocracies whose civil servants focus on theft to the exclusion of other policies. From national security to national welfare, Putin's elite has, in this view, been combining corruption with efforts to improve society and Russia's geopolitical stature. Youth motivated by these latter goals may find public service appealing despite of, rather than because of, corruption. More analysis is needed to assess the validity of this interpretation in the Russian case, as well as the extent to which such findings might generalize to other cases, offering another fruitful avenue for future research.

In summary, drawing on surveys and experimental games, this article has shown that aspiring civil servants at two Russian universities display higher levels of altruism, lower tendencies for dishonesty, and less willingness to engage in acts labeled as corrupt, relative to their peers seeking careers in the private sector. This finding runs counter to the existing literature showing that in countries where corruption is widespread, such as India, citizens with low levels of altruism and a tendency for dishonesty self-select into state bureaucracies, presumably with the aim of illicit self-enrichment (Hanna and Wang, 2017; Banerjee et al., 2015). Rather, our findings mirror the results of similar studies in the low-corruption environment of Denmark (Barfort et al., 2015).

A number of fruitful research agendas emerge from our study, including questions pertaining to islands of integrity, the evolution of bureaucrats' attitudes and behavior over time, and the nature of corruption and public service in regimes such as Russia. Our findings raise a number of questions, but most importantly, they show that even in highly corrupt countries, substantial pockets of aspiring civil servants enter state bureaucracies not with illicit motives, but with the altruistic goals of improving society and helping others.

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own professional background – as attractive and prestigious (see <http://bd.fom.ru/pdf/d04gb2018.pdf>). We initially sought to include a survey question about Putin's approval ratings to evaluate the hypothesis that students' support for Putin would be positively correlated with preference for public sector employment. This question, however, was considered too politically sensitive by administrators at our research sites and had to be removed.

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