

An Analysis of Corruption Based on Administrative Data: Measuring Revealed Corruption and Studying the Cultural, Institutional and Historical Origins of Corruption.

Project Description

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Abstract

We build an objective measure of corruption among the Russian traffic police by using administrative databases. Using this measure, we examine regional differences in corruption norms of car drivers and show this is correlated to willingness to pay bribes and police distrust (WVS). Next to this we cross-validate this new measure of police corruption with other corruption measures. In later stages of the research project we will explore the historical roots of differences in contemporaneous corruption behavior and corruption norms.

1 Introduction

Measuring Corruption

Corruption, most commonly defined as the misuse of public office for private gain, has proven difficult to measure for policymakers, civil society and academic researchers alike. The most widely used methods are based on perception surveys, expert assessment or media coverage of corruption scandals. These all have their specific advantages and disadvantages [19]; [20], but the fundamental problem of properly measuring corruption remains unresolved. We propose to exploit the richness of administrative data to provide a more complete and comprehensive measure of specific cases of corruption. This approach relies on objective measurements of corruption, made possible by the rising availability of administrative databases. Examples are Fisman and Miguel who analyzed the evolution of parking tickets of diplomatic license plates in New York to link corruption to cultural norms in the country of origin and enforcement in the country of residence (the US) [8], and Mironov and Zhuravskaya who use banking transactions data to show links between public procurement corruption and shadow campaign financing [16].

What's New Here?

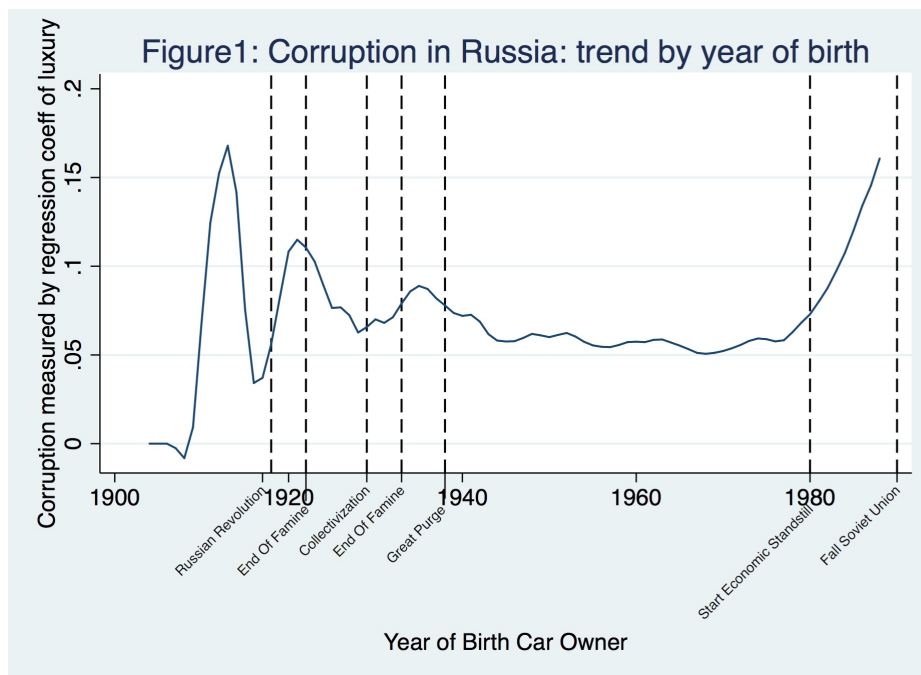
This rather new approach complements the most widely used ones. It studies one specific case of corruption at a time, in contrast to the assessment of the general level of corruption in a country. The use of administrative databases allows for the examining of dimensions of corruption that haven't properly been studied before, like local corruption levels within a country or differences in corruption behavior based on region of birth for people currently living in the same region. The focus on specific cases of corruption, although abandoning the possibility to generalize conclusions to the general level of corruption in a country, allows for the construction of objective measures and the research of previously unstudied aspects of corruption behavior.

To the Micro Level

Quite often, the empirical corruption literature tries to establish a relation between a broad set of country characteristics and country-level corruption measures. However, public corruption is an outcome of complex interactions between the institutions of a country and the social norms of its citizens. The opening of large and individual administrative datasets provides us with the opportunity to study both aspects of corruption behavior.

Historical Shocks to Corruption Norms

Certain events in history have produced an exogenous shock to individual trust. For example, Nunn shows the significant effect of slave trade on later trust [18]. By altering trust, exogenous shocks may shift socio-economic outcomes. Similar traumatizing events might have caused a shock to corruption norms, whatever the mechanisms involved. In my master's thesis, I constructed a measure of revealed corruption behavior based on license plate entitlements. According to this measure, specific patterns indicated higher revealed corruption for individuals born in periods of war, famine or economic crisis. Figure1 presents this trend, where the corruption coefficient is estimated by the equation from WP3. The data is probably too scarce before 1915 to draw conclusions about the first peak in measured corruption. The Russian revolution, the civil war and famine killed 20 million Russians over 1917-1922, which coincides with the second peak. Forced collectivization and famine killed millions more between 1930-1933 (a third peak). Important regional differences in impact of these events allows to study the effect of such an event on the measured corruption. Another interesting period in the graph is 1980-1988. An economic standstill in this period help the Soviet Union collapse by 1990. Russians born in this last period will grow up during the Russian transition crisis.



Famine as a Shock?

A broad literature studies the effects of early-life exposure to famine on adult socioeconomic outcomes. Early-life malnutrition is associated with lower adult education levels and worse health outcomes [2]. BenYishay shows that

early-life exposure to drought also leads to lower adult individual trust [5]. Maccini & Yang find a causal relation from early-life rainfall to infant health, educational attainment, and ultimately adult socioeconomic status [13]. Lastly, Chen and Yang show that differences in exposure to drought during the Great Chinese Famine (1958-1961) are related to differences in political distrust [6].

2 Objectives of the research

The fundamental objective of the research is to broaden our understanding of how cultural values, trust, economic outcomes and corruption outcomes interact. Specifically, this study has the following objectives

1. **Introduce novel ways of measuring revealed corruption** at the regional and the local level, and from the demand and the supply side, based on administrative data like license plates data
2. Gain insight into the **origin of differences in individuals' revealed corruption practices** by studying the effect of exogenous shocks like early childhood famine, genocide, war and socio-economic hardship (the transition crisis in Russia).
3. Understand the importance of **local cultural norms and trust** in the emergence of a “culture of corruption” by studying the place/region of birth variation in revealed corruption and tracing this variation back to its deep historical roots.
4. Study the complex interactions between corruption, social norms, trust and socio-economic outcomes, to understand **how current variations in trust and corruption both over countries and within countries came to exist**.
5. Provide **external validation of the regional and local measures of corruption** by using more than one administrative dataset and by looking at the association between our measures of revealed corruption and other indexes.
6. Study the complex **effects of our different constructs of revealed corruption on outcome variables**, like road safety, local schooling, productivity growth, local government effectiveness and rule of law, regional per capita growth and the regional/local socio-economic equilibrium.

3 Methodology

3.1 Introduction

Exploiting an administrative database at hand enables studying the mechanisms between corruption behavior, social norms, local and regional governance and socioeconomic outcomes. The database in question is a transaction database of the Russian traffic police and similar data has been used to estimate hidden earnings in Russia[4]. Personalized license plates for cars are popular among both drivers and governments around the globe. These plates serve as status goods for the drivers who ‘consume’ them and as a significant source of tax revenue for the countries that charge extra for issuing these vanity plates. Some countries put vanity plates at auction, such as the UK, the UAE, Hongkong and several US states. Prices of these plates can reach several million euros. In Russia, however, vanity plates are officially not for sale. This is not for lack of demand for the plates, as can be seen on several websites dedicated to special Russian license plates [24]; [22]. Some of these plates are believed to be sold in exchange for bribes, while some plates with special letter combinations are seen often with people that have links with the government. Russian vanity plates are associated with luxurious cars, elite connections, immunity for traffic police stops and dangerous and aggressive driving behavior [23]. In the proposed research project, I will assess these claims.

The methodology is further described in the next sections: Measures of Revealed Corruption and Origins of Corruption. Furthermore, the research is subdivided in several work packages, abbreviated WP.

3.2 Measures of Revealed Corruption

WP1: Measuring and Validating Revealed Corruption

Objective: Measuring revealed vanity plate corruption

Estimation: $van_i = a + b * lux_i + \epsilon_i$

with van_i a dummy for a vanity plate, lux_i a dummy for a luxury vehicle

Description: I argue that vanity plates are seen more frequently on luxury cars, but only when there is corruption involved in the entitlement. Ceteris paribus a stronger correlation in a certain subset of the data between luxury cars and vanity plates, indicates a higher fraction of corrupt individuals.

This correlation follows from the fact both luxury cars and vanity plates are to some extent status goods, and individuals with a taste for vanity might prefer a little of both instead of an extreme consumption choice.

Besides this moderate consumption versus extreme consumption argument, more motivation for the correlation comes from the noisiness of the signal the plate sends. A plate might be acquired by luck, without bribery, and then this plate doesn't truly signals the owner's wealth or connections. Building a model in my master's thesis, I show that because of this noise, below a level of luxury of the car, the vanity plate will be uncredible. Therefore it becomes irrational for an individual with too little money to buy a vanity plate. The noise caused by some plates being received by luck, reinforces the correlation between luxury cars and the vanity plates.

The most important prediction from the model is that a higher share of corrupt agents implies higher frequencies of vanity plates for luxury cars. Interacting the luxury term with regional dummies one can estimate in a regression how strong the link is between luxury cars and vanity plates. Ceteris paribus this approach estimates how big the share is of corrupt individuals, across different regions. $van_i = a + b * lux_i * (\text{regional dummies}) + \epsilon_i$

Finally, the obtained regional corruption measures, shall be compared to survey data and existing corruption indexes, such as a regional corruption index based on public procurement corruption constructed by a colleague at our faculty.

Data: License plate data; Study of colleague at our faculty about public procurement corruption; European Social Survey, World Values Survey, Russian Longitudinal Monitoring Survey and New Russia Barometer

Expected Results: I expect to see important regional differences in revealed corruption, which should be correlated to police distrust, willingness to pay bribes and different existing corruption and corruption perception indices.

3.3 Origins of Corruption

WP2: Impact of Cultural Values on Corruption and Their Deep Historical Drivers

Objective: Assert cultural origins of corruption

Estimation: $van_i = a + b_r * lux_i * (\text{region of birth dummies})_r + \epsilon_{ir}$

Call the estimates of b_r of the specification above Rob_r .

Second step: $Rob_r = a + d_r * (\text{historical deep drivers of corruption})_r + \epsilon_r$

Description: By focusing on data from individuals living in the same environment, Moscow and the Moscow region, but with different regions of birth, differences in their revealed corruption behavior can be attributed to their culture of corruption. In a second step this will be linked to deep historical roots of the quality of institutions and corruption norms in these regions of birth. These drivers could be the proportion of rich farmers and industries in the period of the Emancipation [14], the proportion of old Orthodox believers, the destruction of the middle class

by the German invasion [1], the local severity of the collectivization of agriculture, ethno-linguistic fractionalization, the presence of secret closed cities and monotowns [7], the presence of gulag at the locality [9] and a persistent anti-market culture [10].

Data: License plate data; European Social Survey, World Values Survey, Russian Longitudinal Monitoring Survey and New Russia Barometer

Expected Results: There should be a clear pattern of regional variation in the extent of revealed corruption and this should be linked to the deep historical roots of the local/regional “culture of corruption”

WP3: Historical Shocks to Corruption Norms

Objective: Study differences in corruption over birth cohorts

Estimation: $van_{it} = a + b_t * lux_i * (\text{years of birth dummies})_t + (\text{year effects}) + \epsilon_{it}$

Call the coefficients of years of birth estimated above Yob_t .

$\Delta_{it} := Yob_t - Yob_{(t-1)}$ is the first difference

When the shock happens at t , $\Delta_{it}(\text{famine}) - \Delta_{it}(\text{control}) > 0$.

This means that revealed corruption rises faster in famine exposed regions (treatment) than in regions that weren't exposed to the famine (control).

Description: The dataset contains also information about years of birth, which can be used to estimate the effect of a certain shock on revealed corruption measures. The 1933-1934 famine in the Soviet Union was most severe in the Ukraine, the Volga region and Kazakhstan. By using a difference in differences approach I will estimate the effect of the famine on revealed corruption today.

If starting levels of trust or corruption attitudes are different, these have to be taken into account. It is possible that lower trust societies are more vulnerable than high trust societies. Ben-Yishay shows that the adverse effect of drought on adult trust happens mainly in low trust societies, which he proxies by historical exposure to slave trade [5]. Low trust is intergenerationally transmitted, but unless exposed by drought, the low trust is only noisily perceived by young children. To test this heterogeneous effect of shocks on trust between societies/regions with low initial trust and those with high initial trust, I will examine the effect of the Russian transition crisis on revealed corruption behavior. Survey data (e.g. European Social Survey, World Value Survey, Russia Longitudinal Monitoring Survey of HSE and the New Russia Barometer), will form regional initial (in 1990) trust level proxies. Conditioning the differences on initial levels will test if high trust regions had a smaller rise in revealed corruption than low trust regions.

Data: License plate data; Data about geographical impact famine: [17],[21]; other historical accounts

Expected Results: It is expected that birth cohorts in regions that experienced famine show more corruption behavior than those without famine experience. I also expect to see a detrimental effect of the Russian Transition crisis on corruption norms. Conditioning on initial trust levels should show stronger effects of the Russian Transition crisis in low trust regions than in high trust regions.

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