Death and Taxes
How Russian Tax Officials are Hurting SME Growth

Artem V. Zagorodnov
Ohio State University
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1. ABSTRACT

I test the hypothesis that Russian regions with relatively higher *reported* levels of taxes collected would be experiencing more vibrant SME activity. Higher levels of *reported* taxes collected suggest lower levels of ‘under the table’ pressure and stronger rule of law. The hypothesis is motivated by field work completed in Russia, and is tested with data from several state and private organizations. The paper’s conclusions are that, despite some progress in this direction, the Russian federal government has failed to reign in the predatory (illegal) activities of tax authorities and therefore has not established a healthy environment for SME development during Russia’s rocky transition to a market economy.
2. ACKNOWLEDGEMENTS

I would like to thank Professor Belton Fleisher of the Ohio State University for his confidence, commitment and assistance. Without him this project would have been impossible.

I would also like to express gratitude to our economics group: Jafar Olimov, Kent Zhao, Shinye Harie and Will McGuire, whose advice and guidance throughout the process of writing this paper was invaluable. Kent deserves special credit for running the regressions presented in Sector 5 in SAS; the author is not nearly competent enough in programming to be able to perform this.

Gratitude also goes out to a plethora of businessmen, state officials and experts across Russia not mentioned in the references who provided the author with invaluable information on condition of their anonymity.

The author would also like to thank the following individuals: Professor Klara Sabirianova Peter of Georgia State University, Professor Yuriy Gorodnichenko of the University of California, Berkeley and Professor Yekaterina Zhuravskaya of the Centre for Economic and Financial Research in Moscow.
3. INTRODUCTION

Much of the criticism of Russia’s managed transition to a market economy focuses on the “lost opportunity” of creating a large property-owning class of Russians to be the bulwark of future economic and political reforms, as this was done in many of Russia’s East European neighbors and China.

Rather than distributing national wealth in an efficient manner, Russia’s early reformers focused on rapid liberalization of prices and “mass privatization” that one Russian daily called “the largest redistribution of property relations in world history” (Argumenti i Fakti). As a result, many Russians saw their life savings wiped out overnight by four digit inflation, and their country’s wealth pillaged by a few well-connected individuals. The reformers placed hardly any emphasis on establishing basic market mechanisms.

Nearly 10 years after the collapse of the Soviet Union, parts of Russia’s legal code dated back to the 1960s, while a new tax code was not introduced until 2001. A law on organized crime was not passed until 1997, and a legal body to combat money laundering was not established until after 2000. This legal vacuum provided the wrong incentives for businesses during Russia’s early experiments with free market economics, and subsequently provided a poor foundation for the country’s future class of entrepreneurs.

The subsequent privatization schemes of the 1990s also failed to establish a healthy property-owning class of Russians. The privatization of state property began in October 1992 and consisted of two phases: “voucher” or “mass” privatization (which occurred Oct. 1992 – Jun. 1994), and auction privatization (which began in July 1994 and continues to this day). During the first phase, small- and medium-sized businesses were auctioned off through a voucher system. During the second phase, large enterprises were auctioned through direct cash sales (usually to a single wealthy buyer).

The government’s concurrent decisions to denominate vouchers nominally and to liberalize prices caused the value of the vouchers to plummet almost overnight. Another major problem was the government’s decision to allow managers to buy out the controlling shares of stock in their companies. It ordained factory bosses with a lot of control over how the ‘voucher auctions’ took place and whether they accepted vouchers at all. As a result, plant bosses became involved with the criminal underworld in hopes of obtaining capital to buy the controlling shares of their companies. Often they simply resold all of the company’s assets on the secondary market to a competitor or other interested party and bankrupted the firm, leaving investors (i.e. those with a minority share, often the firm’s employees) without any returns from their vouchers and without work (Supyan). In the words of one economist,

“The principal economic shortcoming of...the ‘voucher approach’ was that it did not create any economic incentives for the accumulation of capital and new investments...Th[ey]r situation led to numerous abuses and mass disappointment among citizens who expected to receive real ownership, dividends, and a visible improvement in living standards from their vouchers” (Supyan).
The consequences of Russia’s botched transition were severe: according to the United Nations, average male life expectancy plummeted from 67 to 59 years over the course of a decade. Stephen Cohen, an analyst at Columbia University, has argued that Russia experienced the greatest drop in population during peacetime in history (Cohen). The number of people living below the poverty line skyrocketed to somewhere between 40 and 80 percent. At the same time there was an exodus of skilled labor from Russia (brain drain) coupled with a lack of foreign investment into the country. Finally, the productivity of average Russian worker fell from 30% of that of an average American worker in 1992 to 19% in 1999. The last point is particularly disturbing because it shows that the economy had actually become less efficient after the transition, seemingly eliminating the point of privatization (Black, Kraakman, Tarassova 1780).

Particularly painful for Russian policymakers is that fact that it took GDP (by various estimates) somewhere between 15 and 17 years to recover to its 1990 level. Some of the other macroeconomic effects are demonstrated in the charts below. Inflation figures for the years 1990-94 have been excluded as estimates vary widely (likely percentages were in the thousands):

*Figure 1 Russian Inflation; source: IMF*

*Figure 2 Russian GDP per capita (PPP); source: IMF*
4. THE PROBLEM OF SME GROWTH IN RUSSIA

Background

The botched reforms described in the last section created a hostile environment for SME growth in Russia. Yegor Gaidar, the chief architect of Russia’s economic transition, has always maintained that there was no alternative to his “shock therapy” (Gaidar). Gaidar’s justification for his position is that inflation had become a serious problem for Russia’s centralized economy of 1991, and he believed “reforming” all sectors at once would cause a quick, one-time jump in the price level (caused in part by the massive monetary overhang present in 1991), followed by a return to macroeconomic stability. Central to this idea was the restoration of the ruble’s value, followed by steep budget cuts (Goldman 97).

In regards to creating a property-owning middle class (which could have been the foundation for future SME growth), the biggest question remains: why didn’t the government carry out privatization first, which could in principal have allowed Russians to spend their savings on acquiring capital for future businesses, instead of seeing them wiped out?

During my meetings at the Institute for the Economy in Transition in Moscow (which Gaidar now heads), I met several of Gaidar’s experts who emphasized that at the time Gaidar came into power, the country was on the verge of hunger due to massive market failures (or failure to develop private markets for food). They saw no alternative to the immediate freeing of prices (Tagor), which allowed for a free market for basic goods to develop overnight.

Others whom I interviewed – from entrepreneur to government official – expressed great skepticism that the country was on the verge of hunger in the early 1990s, emphasizing that almost every family had a patch of land somewhere in the countryside where they raised basic crops (Lubimov). Moreover, other East European countries – such as Poland and Hungary – faced exactly the same urgency as Russia during their period of reforms, but managed to establish sufficient institutions to facilitate a surge in the number of SMEs (Goldman 183-92).

Gaidar’s reforms provided a very poor beginning to SME growth in Russia. Today, SMEs are not nearly as vibrant in Russia’s economy as they are in many neighboring states. According to a recent report by Alfa Bank, Russia’s largest private bank:

The country’s last official evaluation of SME business was in 2004, and at the time, SMEs contributed 12 percent of GDP as opposed to 60 to 70 percent in EU countries. They absorbed just 12 percent of the labor force versus 50 to 60 percent in the EU. The latest estimates put the SMEs sector at 25 percent of the labor force, while keeping its modest 12 to 15 percent contribution to GDP (Alfa Bank).

Perhaps even more alarming is the overall hostile attitude in Russia toward free market economics. Many Russians, quite understandably, see the reforms as nothing more than a humiliating submission to Western demands. In his latest book, Collapse of an Empire,
Gaidar expressed worry about the increasingly popular belief among Russians that a healthy, economically vibrant Soviet Union had been subverted into free market economics by Western intelligence services and their agents within Russia. The fact that such opinions remain popular proves that Gaidar failed in his attempt to popularize free market economics through his “shock therapy,” as he had originally intended.

**Difficulties facing SME startups**

The results of a detailed cross-regional study on SME barriers to entry in the 1990s can be found in the book *Property to the People: The Struggle for Radical Economic Reform in Russia* by Nelson and Kuzes. For an account of the criminal situation at the time, consult Paul Klebnikov’s book *Godfather of the Kremlin: The Decline of Russia in the Age of Gangster Capitalism*.

Speaking to individuals who had founded business during the 1990s, I learned of the “3 C’s” that were the primary barriers to entry: credit, crime and corruption. Small business loans were virtually nonexistent, which significantly reduced the pool of people able to open a firm. A man who left the Foreign Trade Department of the USSR Ministry of Foreign Affairs in 1991 to found a window installation company told me that it was only thanks to his contacts at various banks that he was able to acquire starting capital. He told me that out of his business acquaintances, he was the only one who fully repaid his debt, and even that was thanks to the default and currency devaluation of 1998.

The same businessman also described the difficulties faced by any individual attempting to register a firm. Despite heavy lobbying on the part of small businesses within the national parliament, registration remained a costly and time consuming process. This particular individual cited bribes in the thousands of dollars (while the average monthly wage in Russia was well under $100) and lines that could last for days. Both of these factors placed opening a business well beyond the means of most ordinary Russians.

A restaurateur who began his business in the 1990s described the racketeering of the times: any business that flourished and began hiring employees in the double digits immediately attracted the attention of local mafia bosses. One could either pay “protection fees” to one of these mafias, or face vandalism and possible physical abuse.

**Developments since 2000**

New impetus to developing SMEs was provided in 2000 with the election of Vladimir Putin as president. Important steps were taken throughout his tenure, such as the passage of new tax, labor and legal codes, the establishment of a “simplified tax” regime for SMEs (see Section 5) and the development of the credit and mortgage markets.

Some analysts are bullish about the potential for an explosion in the number of SMEs thanks to the vibrant credit market (Mindich). For the first time in Russia’s history, ordinary individuals have access to credit for buying household appliances, electronics and automobiles. Almost every major electronics store has a ‘credit department’ where any consumer can borrow money for purchases (albeit, usually at high interest rates).
Similarly, credit for housing (i.e. mortgage) has also become available thanks to a package of laws pushed through parliament by President Putin in 2005.

Russian banks have also started lending to SMEs. 2006 saw 90% growth of the SME credit market, with its total value passing $10 billion (Expert). A wide body of research and literature is now dedicated to exploring the effects of Russia’s credit market on SME development (see Expert magazine).

Despite these advances, the entrepreneurs I interviewed during the summer of 2007 singled out red tape and corruption as the key barriers to their firm’s growth prospects. This information was consistent with a nationwide poll conducted by the small business lobby organization OPORA Rossii in conjunction with the Ministry of Economic Development and Trade and the VTsIOM polling agency, which found that only 11% of SME proprietors reported almost no under-the-table payments to government officials in 2006 (this figure decreased from 14% the previous year) (OPORA Rossii 57).

The Centre for Economic and Financial Research (CEFIR) of the New Economics School in Moscow has conducted a regular report on “Monitoring administrative barriers to the development of small businesses in Russia” since 2002. Results from 2005 and 2006 indicate “competition” gradually pushing aside the “tax burden” as the primary concern of small businesses; the latter had been a clear leader among all possible categories since 2002. However, despite this optimism, the study confirmed that most businesses still face regular “additional payments” as “many principles enshrined in Russian law do not function as they are supposed to.” Businesses spend much more than the allotted five days on registration, have to pay hefty bribes and are checked by various enforcement bodies much more frequently than is legally allowed (CEFIR).

The results are corroborated by the World Bank’s Business Environment and Enterprise Performance Survey (BEEPS), conducted in 2005 and summarized in table 1. Particularly large differences between Russia and its more SME-friendly European neighbors were observed in the field of tax collection and bribery.

**Question:** How frequently do firms in your line of business have to pay some irregular "additional payments" for any of the following? To deal with taxes and tax collection

<table>
<thead>
<tr>
<th>Country ( # of observations)</th>
<th>Mostly</th>
<th>Frequently</th>
<th>Sometimes</th>
<th>Seldom</th>
<th>Never</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>Czech Republic (126)</td>
<td>1.6%</td>
<td>2.4%</td>
<td>4%</td>
<td>8.7%</td>
<td>83.3%</td>
<td>0%</td>
</tr>
<tr>
<td>Estonia (125)</td>
<td>0.8%</td>
<td>0.8%</td>
<td>5.6%</td>
<td>8%</td>
<td>94.8%</td>
<td>0%</td>
</tr>
<tr>
<td>Poland (209)</td>
<td>2.9%</td>
<td>5.7%</td>
<td>7.7%</td>
<td>12%</td>
<td>71.3%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Russia (532)</td>
<td>3.9%</td>
<td>5.8%</td>
<td>12.8%</td>
<td>14.7%</td>
<td>61.7%</td>
<td>1.1%</td>
</tr>
</tbody>
</table>

**Results for:**
Selected countries: Czech Republic, Estonia, Poland, Russia

**Table 1: Frequency of illegal payments to tax authorities**
A number of sources – including the leading Russian newspaper *Vedomosti* and OPORA Rossii – have reported that small businesses currently spend, on average, 10% of their profits on bribing state officials (Ivanova).

**Anecdotal Evidence**

**The bribe hierarchy**

A long-time grocery store employee in St. Petersburg described how she was pressured into paying bribes to the Health Inspector. According to her, the store was as close to a customer-friendly business as one could imagine as employees were under no pressure to sell old or expired products (a common practice in Russia). However, no matter the circumstances, an inspector would always find violations if not bribed. The employee brought up a case when the store’s manager was told he was in violation of sanitary laws for keeping his freezers at -20 degrees Celsius instead of -19. Soon a pattern would form: each month the inspector would arrive, type the amount of the bribe into his/her cell phone’s keypad and show it to an employee or manager. They would then proceed to a back room, where the money would be placed on a table. The inspector would sweep it with a sheet of paper (to avoid any fingerprints) into his/her jacket. According to this employee, the amount to be paid to such officials has been increasing exponentially over the last few years. Once, when she complained that the store wouldn’t be able to stay afloat, the inspector was sympathetic, but said he/she couldn’t do anything about it. Only a small amount of that bribe would remain in his/her possession: most is paid to superiors in the upper echelons of the Health Inspector’s department.

The store employee believed that SMEs were actually being squeezed out of the national economy, to be replaced with large chains (i.e. supermarkets, electronics stores…) under the protection of major government officials.

**Bribe evasion**

The owner of a small grocery store in Northern Moscow described how, at the end of each day, she would have a specialist come to clear most of the transactions from her register. She insisted that paying the taxes she *really* owed would have put her out of business a long time ago, and balked at the relentlessness of the local tax collectors.

Nearby was a restaurant owned by Azerbaijani businessmen that I regularly frequented. Usually open from noon until after midnight, one day the restaurant remained closed until after five. This occurred the following day, and soon became a regularity. I later learned that the business had continuously been harassed by the health inspector. After learning the sum of the bribe he/she had demanded, the Azerbaijanis chose to try to comply with the demands. They renovated the building three times, and this was still not enough. Finally, after being shut down, they chose to open after the health inspector’s office closed each day and therefore remain in operation. After several weeks, a proper sum for the bribe was negotiated and the restaurant was allowed to reopen.
I learned that a similar incident had occurred at this restaurant the previous summer, when the proprietors temporarily lost their liquor license. They then proceeded to sell hard liquor exclusively to longtime customers by pouring it into unmarked containers and bringing it from the back of the kitchen.

The shadow tourist economy

While on a walking tour of Nizhny Novgorod (a major city on the Volga River) in a group of about 12 people, I was often straddling behind to take photographs. Over the course of one hour, three people approached me with the same question: how did we find this tour operator? They were all local residents who were interested in taking a tour of their own city, but could not find a single company offering such a service.

When I asked our guide why they didn’t advertise (since it seemed there was a huge demand for their services), she tried to shrug off the question by saying that advertising space was too expensive. In private, she later confided to me that they operated in the shadow economy, not because they wanted to, but because declaring their income would inhibit crippling taxes and “operational fees.” The company survived by making deals exclusively with other “familiar” firms. In my case, the company I hired in Moscow for my tour package (our group visited almost a dozen cities over the course of five days, traveling by bus) subcontracted local tours to companies such as this one.

This experience was repeated almost exactly when I took several visiting friends to St. Petersburg for a few days. I booked our hostel reservations through an obscure company recommended to me by a friend. The price (1000 rubles per room per night) was very good, especially considering the central location of the hostel. Paying most of the sum upfront in cash, I was given an address in St. Petersburg.

We arrived in St. Petersburg at around 6am and had great difficulty finding the address, despite the fact that it was in the center of the city. The hostel turned out to be a converted communal apartment. In Soviet times, such apartments housed several families: each family had its own room, and everyone shared a common kitchen and bathroom. I later learned that the proprietor had bought the apartment at a cheap price, renovated it, added an extra bathroom and converted it into a guesthouse. As expected, there was no label on the door indicating that it was a hostel (it was on the fifth floor of an ordinary apartment building).

When I inquired as to why it was almost impossible to find, the owner – as expected – told me that they operated “in the shadows” for exactly the same reasons as the company in Nizhny Novgorod. They had their own network of “friendly” tourist agencies who supplied them with clients, but otherwise tried to remain as obscure as possible. In fact, the owner herself also ran a tourist agency and had used the profits to renovate this apartment (i.e. this was a downstream business).

The obscurity, however, was not enough to protect the business from the local police inspector. However, he had agreed to turn a blind eye to their operation in exchange for
being allowed to book his buddies for free at the hostel at any time. Simply out of luck, this particular inspector turned out not to need such services very frequently.

*Mafia in the Kremlin*

The anecdotal evidence presented above suggests the presence of a large, unchecked and extremely detrimental bureaucracy in Russia. Of the “three C’s” barriers to entry, crime and capital may have improved since the 1990s, but corruption remains a major obstacle to SME growth. In response to an inquiry about the Russian mafia, one businessman told me: “The mafia? The mafia is in the Kremlin!” He then proceeded to describe how the shadow racketeering that was a major problem in the 1990s has now simply been legalized through the methods employed by Russia’s bureaucrats. The major mafia organizations of the 1990s legitimized their businesses and began to pay taxes, while official bodies (e.g. tax and health inspectors) took over the business of obtaining bribes from small businesses. While such assertions are difficult – maybe impossible – to prove the ‘fear of the taxman’ that seemed to be prevalent among every businessman I interviewed suggests that taxes and tax enforcement policy is a fruitful area for research based on hard data.
5. EMPIRICAL INVESTIGATION: TAX LAWS, TAX POLICY AND SME GROWTH

In 2003, the Russian government adopted a “simplified single tax on the revenues of small businesses.” Starting that year, SMEs (firms with under 100 employees) in all of Russia’s regions had the option of paying the “simplified single tax” instead of going through a standard procedure. The results of CEFIR’s latest report (June 2007) on “Monitoring administrative barriers to the development of small businesses in Russia” suggest that the reform did make taxes easier and cheaper for SMEs. OPORA Rossii reported that by 2006, 61% of SMEs had opted for the “simplified single tax” (OPORA Rossii 65).

Under the “simplified single tax,” SMEs have the option of either paying a 6% tax on revenues or a 15% tax on revenues minus (rather rigidly defined in Chapter 26.2 of the Russian Tax Code) expenditures. The possible effects of opting for either option are not examined in this study, and this should have no outcome on the results.

An interesting feature of the “simplified single tax” is that local municipalities were given a say in how large of a tax would be levied (within certain federally-dictated parameters). This is known as the “K2 coefficient,” which allows municipalities to influence how high a tax is levied on local businesses (OPORA Rossii 17).

Therefore,

\[ \text{taxes}\text{collected} = 0.06 \times K2 \times \text{revenues} \]

Or

\[ \text{taxes}\text{collected} = 0.15 \times K2 \times (\text{revenues} - \text{expenditures}) \]

However, some studies have indicated that the municipalities themselves have little influence over the “K2 coefficient,” and that regional governments are largely responsible for determining the level of taxation (Chernyavsky and Vartapetov). Following the introduction of this “K2 coefficient” across Russia’s regions, only 8% of SMEs have reported a lower tax burden (OPORA Rossii 65). In other words, Russia’s regions are, to various degrees, using their influence to further tax SMEs.

The (illegal) predatory nature of tax officials described in Section 4 establishes my hypothesis for SME growth: regions with relatively higher reported taxes collected would be experiencing more SME activity because this would indicate that a larger share of collected payments are legal (suggesting stronger rule of law in the region, and less ‘under the table’ pressure).

**Structure and sources of data**
The data examined concerns the total budgetary revenues of each of Russia’s 83 regions (with some minor overlapping due to the amalgamation of some regions by others over the last five years). It is available on the website of the Russian Ministry of Finance’s Treasury Department and comes in the form of a chart submitted by each region (their official account balance) at the end of each month on their total revenues and expenditures to date for that year.

This data is compared with information from a report titled “Russian Regions,” recently made public by the Russian State Statistics Service. This dataset contains the number of registered SMEs in each region, which, if divided by the population of that region, can demonstrate the number of “SMEs per capita.” Also available is the annual volume of transactions of SMEs by region, which served as a proxy for the tax base; unfortunately, this was available only for the years 2005-06.

**Sample Weaknesses**

Weaknesses include occasionally “bad” numbers for remote regions with too many zeroes. Three regions – the Chechen Republic, the Evenkiya Autonomous Okrug and the Koryak Autonomous Okrug - were excluded from the set due to poor or absent estimations (indeed, the Chechen Republic was in a state of war until very recently, the Evenkiya Autonomous Okrug is one of Russia’s least populated and most isolated regions and the Koryak Autonomous Okrug has been amalgamated into the newly formed Kamchatka Kray). It is not believed that these exclusions influenced the results in any significant way.

**Regression 1**

It is assumed that the taxes collected are directly affected by the tax base:

\[ \text{taxescollected} \to \text{taxbase} + \varepsilon \]

I assume the following relationship:

\[ \text{taxescollected} = \beta_0 + \beta_1 \times \text{taxbase} + \varepsilon \]

The assumption of this model lies in the fact that the error term \( \varepsilon \) can be used as an indicator for how stringent a region is with its enforcement of tax collection and its “K2 coefficient.”

This error term can be represented as:

\[ \varepsilon = \text{taxescollected} - \beta_1 \times \text{taxbase} - \beta_0 \]

Assuming that a region’s enforcement of tax laws (represented in this model by \( \varepsilon = \text{taxescollected} - \beta_1 \times \text{taxbase} - \beta_0 \)) affects its total number of SMEs, we come up with the following model:
Total # SMEs = \( \beta_0 + \beta_2 [\text{taxescollected} - \beta_1 \text{taxbase}] + \varepsilon \)

Which is equivalent to:

Total # SMEs = \( \beta_0 + \beta_2 \text{taxescollected} - \beta_1 \beta_1 \text{taxbase} + \varepsilon \)

Under the following assumptions:

- Total#SMEs = total number of registered SMEs in a particular region in a given year
- taxescollected = total amount (in rubles) of the “simplified single tax on the revenues of small businesses” collected in a particular region in a given year, reported on its account sheet to the Finance Ministry
- taxbase = estimate for the total volume of transactions of all SMEs in a particular region in a given year by the Russian State Statistics Service

This equation was run under a fixed effects model for 84 regions over two years, 2005 and 2006 (the tax base was available for only these two). Tables 2 and 3 demonstrate the results:

<table>
<thead>
<tr>
<th>Number of Cross Sections</th>
<th>84</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Series Length</td>
<td>2</td>
</tr>
<tr>
<td>R-Square</td>
<td>0.9995</td>
</tr>
<tr>
<td>Pr &gt; F</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

Table 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>DF</th>
<th>Estimate</th>
<th>Pr &gt; ltl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
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<td>8.949942</td>
<td>&lt;.0001</td>
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<tr>
<td>tax base</td>
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<td>-.477</td>
<td>0.442</td>
</tr>
<tr>
<td>taxes collected</td>
<td>1</td>
<td>.0189</td>
<td>0.008</td>
</tr>
</tbody>
</table>

Table 3

**Regression 2**

The second model comes in two steps and uses the same initial assumption as the first; namely, that the taxes collected are directly affected by the tax base, and that the error term \( \varepsilon \) can be used to represent “enforcement” of taxes:

\[ \text{taxescollected} = \beta_0 + \beta_1 \text{taxbase} + \varepsilon \]
An Ordinary Least Squares estimation was run on the above equation for each of the two years, 2005 and 2006, to obtain coefficients for the second part of the model (described below). The results of these first two OLS estimation are described in Tables 4-7:

| Number of Cross Sections | 84 |
| Time Series Length | 1 |
| R-Square | 0.8079 |
| Adjusted R-Square | 0.8055 |
| Pr > F | <.0001 |

Table 4: 2005

<table>
<thead>
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<th>Estimate</th>
<th>Pr &gt; Itl</th>
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<tr>
<td>Intercept</td>
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<tr>
<td>tax base</td>
<td>1</td>
<td>1483.05040</td>
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</table>

Table 5: 2005

| Number of Cross Sections | 84 |
| Time Series Length | 1 |
| R-Square | .3260 |
| Adjusted R-Square | .3178 |
| Pr > F | <.0001 |

Table 6: 2006

<table>
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<th>Estimate</th>
<th>Pr &gt; Itl</th>
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<tr>
<td>Intercept</td>
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<tr>
<td>tax base</td>
<td>1</td>
<td>4301.77446</td>
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Table 7: 2006

In step two, the error coefficients obtained from the previous model were used as values for “enforcement” for each of the two years.

\[ SME_{density} = \beta_0 + \beta_1 * \text{enforcement} + \varepsilon \]
• SME density = total number of registered SMEs in a particular region in a given year, divided by the population of that region for that year

This OLS regression yielded the following results:

<table>
<thead>
<tr>
<th>Number of Cross Sections</th>
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</thead>
<tbody>
<tr>
<td>Time Series Length</td>
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</tr>
<tr>
<td>R-Square</td>
<td>.2366</td>
</tr>
<tr>
<td>Adjusted R-Square</td>
<td>.2273</td>
</tr>
<tr>
<td>Pr &gt; F</td>
<td>&lt;.0001</td>
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</tbody>
</table>

Table 8: 2005

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<th>Variable</th>
<th>DF</th>
<th>Estimate</th>
<th>Pr &gt; Itl</th>
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</thead>
<tbody>
<tr>
<td>Intercept</td>
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<td>3510000</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>enforcement</td>
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<td>.0059248</td>
<td>&lt;.0001</td>
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Table 9: 2005

<table>
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<tbody>
<tr>
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</tr>
<tr>
<td>R-Square</td>
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</tr>
<tr>
<td>Adjusted R-Square</td>
<td>.3851</td>
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<td>Pr &gt; F</td>
<td>&lt;.0001</td>
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Table 10: 2006

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<th>Variable</th>
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<th>Pr &gt; Itl</th>
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</thead>
<tbody>
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<tr>
<td>enforcement</td>
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</table>

Table 11: 2006
6. CONCLUSIONS

Both models support the hypothesis: regions with higher rates of *reported* tax collection – and, presumably, lower rates of unreported, or illegal, collection – experience higher rates of SME activity. Thus, there is a strong negative correlation between the illegal predatory nature of local tax officials and the wellbeing of SMEs in that region. These findings are consistent with the information presented in Section 4.

While Russia’s early reformers made important progress in the direction of a free market economy following the collapse of communism, they largely failed to establish the necessary institutions for a healthy SME sector. To this day – despite numerous attempts to do so – federal officials have failed to reign in the corruption persistent among Russian tax collectors.

This study served as an important start to research I hope to continue over the upcoming summer. In establishing a strong negative relationship between corruption and SME growth, the study has set up an important – yet much more complex – goal of finding a way to quantify the regional level of corruption from available data to further support the hypothesis.
7. REFERENCES


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