**Policy Note**

# Russian Federation: National and Regional Trends in Regulatory Burden and Corruption*

**February, 2013**

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## EXECUTIVE SUMMARY

A broad range of evidence from other Bank and external sources shows that overly burdensome regulation and corruption are significant impediments to firm entry, productivity and growth. This policy note uses results of the fifth round of the Business Environment and Enterprise Performance Survey (BEEPS) to assess levels and trends in administrative burden and corruption facing Russian private businesses. The intended audiences of this note are policymakers, policy analysts in the NGO and academic communities, and representatives of the private sector.

This 2011 survey, for the first time, was designed to be representative not only at the national level but also at the regional level, allowing comparisons across 37 Russian regions –from Moscow to Primorsky Kray and from Kaliningrad to Rostov Oblast – accounting for the majority of economic activity, value-added and population in the country.

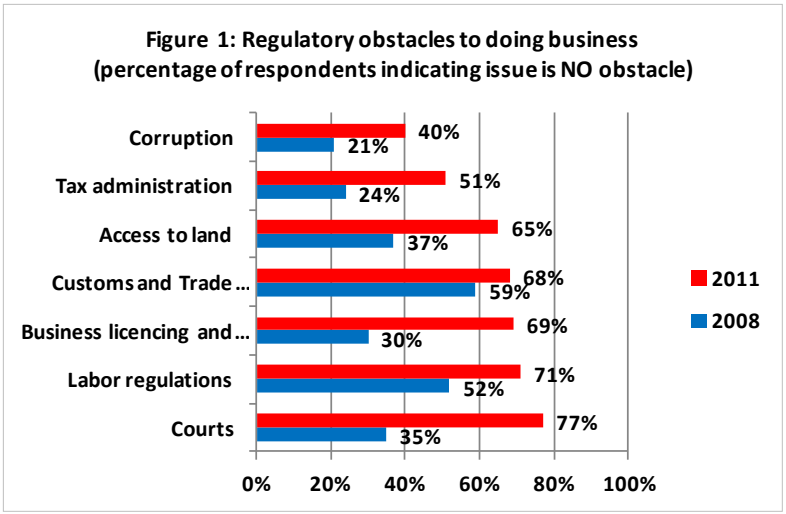
This report assesses trends at the country level, and draws comparisons with the ECA region as a whole. It also identifies regions where the private sector confronts the most serious challenges, and regions where problems are much less severe, that may suggest the way for other regions to lighten the burden of regulation on firms and reduce corruption. Cross-regional variation in corruption and regulatory burden in Russia is a potentially important factor in explaining differential performance in private sector development, income levels and growth rates.

Two major policy implications emerge from the data analysis:

- Greater transparency and government dissemination of information can strengthen accountability and improve the business climate. Regional government procurement systems that are more transparent are associated with a lower average "kickback tax" firms report paying to officials. Perceptions of state capture and frequency of administrative bribery are lower in regions with higher newspaper circulation.
- Streamlining regulation can reduce some aspects of regulatory burden experienced by firms. Interacting with officials in more regulatory areas, and being subject to more tax inspections and meetings is associated with more frequent complaints about tax administration, licensing and permits, and a higher incidence of bribe paying. More intensive research is required however to gain greater clarity regarding which reforms will have the largest effects on firm entry and operations, or whether their effects are additive or redundant. Established firms may work strategically with officials to impede potential competitors effectively through only one or two administrative barriers.

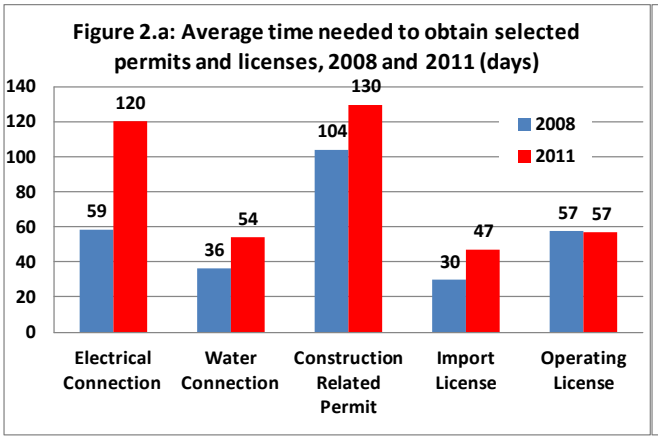
Since the previous round of the BEEPS conducted in 2008, Russia has made significant progress in addressing the **administrative burden imposed on firms** by regulations, tax and court administration, etc. Overall, trends in the administrative burden are favorable, as measured by the BEEPS:

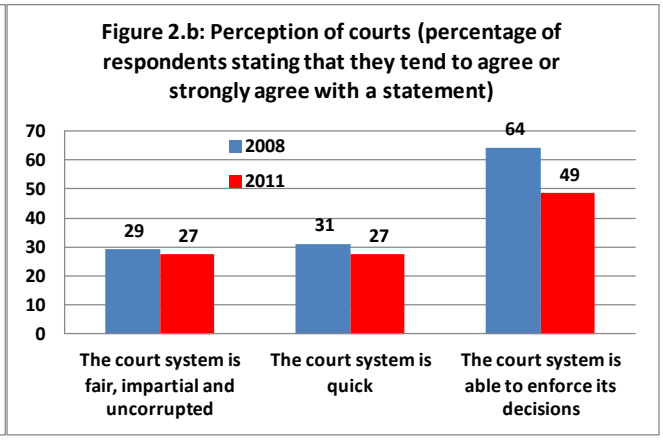
- The average "time tax" is significantly lower in 2011 with 17% of senior management time spent on dealing with regulations, compared to 22% in 2008[1].
- Among the various regulatory and administrative sub-sectors, licensing, courts and tax administration are the areas where perceptions have improved the most (Figure 1).




While respondents see these areas as less problematic than before, the survey results also suggest areas for further improvements (Figures 2.a and 2.b):

- Evidence regarding licensing, permits and utility connections suggests that while fewer firms cite licensing and permits as an obstacle to their business, in some cases (e.g., new electrical connection) they have to endure longer average waiting times in 2011 than in 2008.[2]
- Similarly, fewer firms report that courts are an obstacle, but the reasons for this trend are unclear. Firms in 2011 are less likely to agree that court decisions will be reliably enforced, perhaps partly explaining why fewer firms report having used courts.



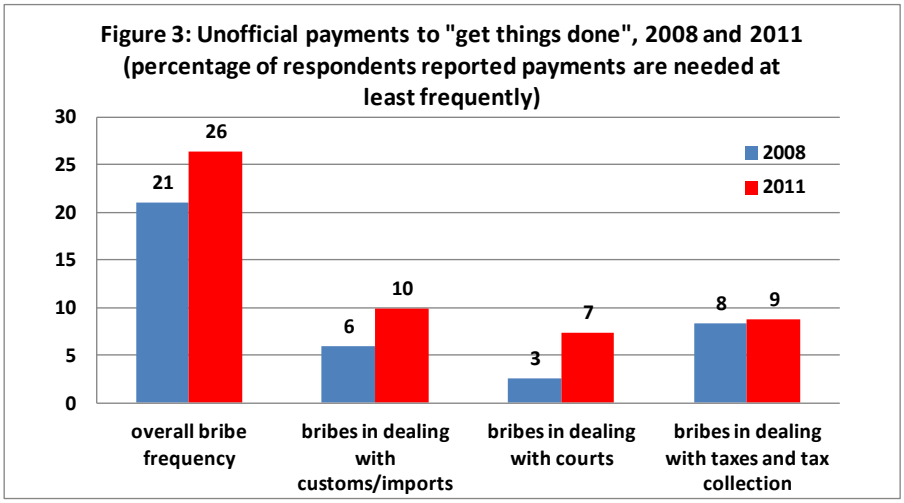




**Corruption** was ranked by firms in the 2008 BEEPS as the 3rd most serious problem doing business in Russia. In 2011, corruption moved up to 2nd on the list of most frequently-cited

[1] All reported differences between the 2008 and 2011 estimates for the various measures are statistically significant at the 10% level or better, unless indicated otherwise.
[2] The differences in water connection, construction permits, import and operating licenses are not statistically significant.

problems, moving ahead of "inadequately educated workforce" and behind only "tax rates." This does not necessarily mean corruption worsened. In fact, fewer firms cited corruption as a major or very severe problem in 2011 (33.5%) than in 2008 (50%). Rather, the improvements in areas other than taming corruption were even larger. Further complicating interpretations of the trends in this question is that corruption can take many forms. Fortunately, the BEEPS includes more detailed questions on some (but not all) specific forms of corruption as experienced or perceived by business firms, allowing for more nuanced conclusions.

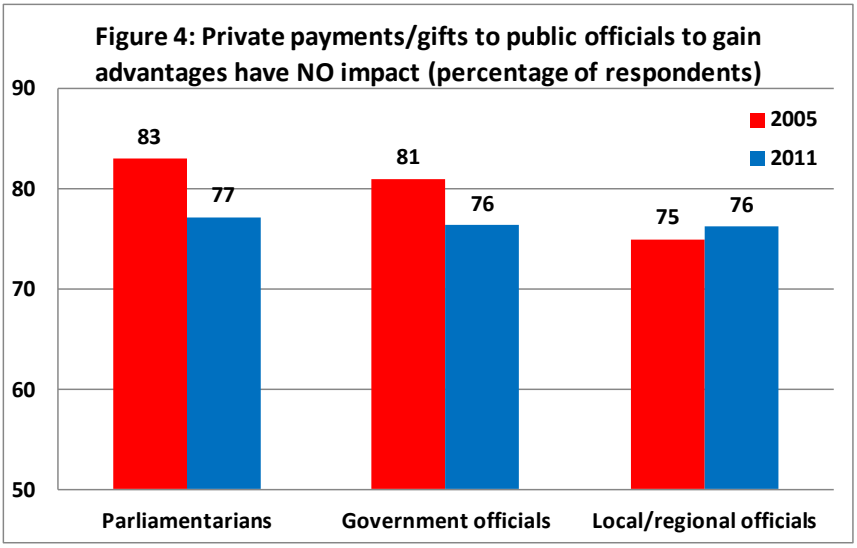
- A summary "Graft Index" representing the share of all interactions between firms and public officials in which a bribe was expected has also improved. In 2008 the index value was 0.18, i.e. every fifth transaction would involve a bribe; in 2011 Russia's value improved to 0.081 (one in twelve transactions involves a bribe). By comparison, the ECA average in 2008 was 0.15, but in 10 Eastern European countries the ratio was 1 in 20 or less.
- The "bribe tax" or percentage of annual sales spent on bribe payments has also decreased from 1.7% of sales (above the ECA average of 1.0%) to 0.9% of sales in 2011.[3]
- Among firms reporting payments, however, bribes as a percentage of sales increased from 4.5% of sales in 2008 to 7.3% in 2011. Payment of bribes thus became more concentrated over time: fewer firms report paying them, but those that do pay more.
- Bribe requests were slightly more frequent in 2011 relative to 2008 for obtaining electrical and water connections, operating and import licenses[4], but downward trends are observed for construction permits, and meetings with tax officials.
- A more general question about bribe frequency shows that a somewhat greater share of firms in 2011, compared to 2008, indicates that bribes are frequently (or always) necessary (Figure 3).[5]




[3] Marginally statistically significant (P=0.120)
[4] None of these changes were statistically significant.
[5] The differences in overall bribe frequency and bribes in dealing with customs/imports are not statistically significant

Administrative corruption is not necessarily the most damaging form of graft for economic growth and private sector development. The 2011 BEEPS marked the return of several questions on "**state capture**"[6] that were included in the 1999, 2002 and 2005 BEEPS, but dropped from the 2008 survey.

The perceived impact of state capture increased between 2005 and 2011. As shown in Figure 4, the percentage of firms claiming that these practices had no impact on their business declined, by 6 and 5 percentage points for officials holding federal-level elected and executive offices, respectively, but remained almost unchanged - increasing by 1 percentage point - for local and regional officials. Viewing responses from the other end of the scale, the adverse trend appears more serious. The percentage of firms claiming a major or decisive impact doubled for the latter category of official and tripled for the former two.




The BEEPS questions on administrative bribe-paying and state capture are intended to measure the experiences and perceptions of firms on aspects of government corruption that affect them directly. An alternative source, the World Economic Forum (WEF) surveys, complements the BEEPS by its inclusion of survey questions on other aspects of corruption. The WEF's indicators on corrupt diversion of public funds for private use, and on financial honesty of public officials, have shown a deteriorating trend in the last several years, and its state capture indicators corroborate the worsening trend exhibited in the BEEPS.

Results show that the business environment differs significantly across the **37 regions** included in the BEEPS. The region in which firms are located turns out to have stronger implications for the degree of corruption and the regulatory burden they confront than other firm characteristics such as firm size age, ownership, main activity, and product or service accounting for the largest proportion of sales.

Although regions differ significantly from each other, the same regions that rank at or near the top on some indicators – perhaps surprisingly – rank at or near the bottom on others. For

[6] The term "state capture" refers to "the actions of individuals, groups or firms both in the public and private sector to influence the formation of laws, regulations, decrees and other government policies to their own advantage as a result of the illicit and non-transparent provision of private benefits to public officials" (World Bank, 2000).

example, Smolensk Oblast ranks best on waiting time for electrical connections, with an average of only 8 days, while waiting time for Primorsky Kray is 730 days, nearly double the time for any other region. On the other hand, Primorsky Kray has the shortest average wait for water connections, at only one day, while Smolensk Oblast was in second place at 1.8 days average wait.

In order to summarize various aspects of business-government interactions, a statistically reliable composite index of Administrative Burden was constructed from questions pertaining to seven potential obstacles to firm operations and growth. The top 5 regions having the lowest values of this index are: Smolensk, Belgorod, Stavropol, and Irkutsk Oblasts and Republic of Mordovia. The bottom 5 regions are (starting with the worst): Rostov, Leningrad, and Samara Oblast, Krasnodar Kray, and St. Petersburg City (Table 1).

**Table 1: Composite Indexes of Regional Performance - Regions in the top and bottom quintiles**

| Top performers | Administrative Burden Index | Administrative Corruption Index | Graft Index | State Capture Index |
|---|---|---|---|---|
| **1** | Smolensk Oblast | Stavropol Kray | Smolensk Oblast | Khabarovsk Kray |
| **2** | Belgorod Oblast | Ulyanovsk Oblast | Novosibirsk Oblast | Kursk Oblast |
| **3** | Stavropol Kray | Lipetsk Oblast | Saint Petersburg | Ulyanovsk Oblast |
| **4** | Irkutsk Oblast | Republic of Mordovia | Moscow City | Republic of Mordovia |
| **5** | Republic of Mordovia | Tomsk Oblast | Primorsky Kray | Omsk Oblast |
| **6** | Rep. Bashkortostan | Republic of Tatarstan | Leningrad Oblast | Tomsk Oblast |
| **7** | Tomsk Oblast | Rep. Sakha (Yakutia) | Chelyabinsk Oblast | Voronezh Oblast |

| Poor performers | Administrative Burden Index | Administrative Corruption Index | Graft Index | State Capture Index |
|---|---|---|---|---|
| **31** | Volgograd Oblast | Moscow City | Samara Oblast | Kaluga Oblast |
| **32** | Kaliningrad Oblast | Krasnodar Kray | Yaroslavl Oblast | Belgorod Oblast |
| **33** | Saint Petersburg | Irkutsk Oblast | Perm Kray | Tver Oblast |
| **34** | Krasnodar Kray | Chelyabinsk Oblast | N. Novgorod Oblast | Krasnodar Kray |
| **35** | Samara Oblast | Rostov Oblast | Krasnodar Kray | Rostov Oblast |
| **36** | Leningrad Oblast | Tver Oblast | Rep. Bashkortostan | Irkutsk Oblast |
| **37** | Rostov Oblast | Primorsky Kray | Voronezh Oblast | Primorsky Kray |

While regional patterns of firm behavior show highly significant variation, results of the regional BEEPS confirmed several important propositions:

- Excessive red tape can provide public officials with more opportunities to deliberately slow down processing to increase the incentives for firms to pay bribes. The BEEPS data are consistent with this idea: regions with more burdensome regulation exhibit a higher incidence of corruption.
- The need to pay bribes and the administrative procedures they are intended to circumvent both constitute significant obstacles from the standpoint of firms. Regions where firms report tax administration as a more serious obstacle also tend to be regions where firms

report a higher number of meetings with tax officials, and a greater need to pay bribes in connection with paying taxes. Moreover, firms reporting a higher "bribe tax" also tend to report a higher "time tax".

- Firms that report interacting with officials in more "sub-sectors" – tax, utility connections, operating licensing, etc. – tend to report a higher "time tax," higher perceptions of bribe frequency, a higher "bribe tax," and more frequently cite licensing and permits as an obstacle. Moreover, they also report paying bribes in a greater *proportion* of these interactions (as measured by the Graft Index), not merely in a larger absolute number of them.
- The earlier BEEPS showed that two types of corruption – administrative and state capture - were positively correlated among countries in the ECA region, although the relationship was only modest in strength. In Russia, the relationship between state capture and administrative corruption appears to be strong - bribe frequency is strongly correlated with state capture.

There are several implications for regulatory and anti-corruption policies that emerge from the analyses:

- Less onerous regulatory requirements are associated with a lower average "time tax", shorter wait times to obtain an operating license, fewer firms citing licensing and permits as an obstacle to their operations, and lowered bribe expectations (as measured by the Graft Index).
- Contrary to common findings in the cross-country literature, corruption and regulatory burden at the regional level in Russia are not worse in poorer regions (as measured by per capita gross regional product), or in regions more dependent on natural resource extraction.
- Contrary to some other sources, corruption and regulatory burden are not worse in southern than in northern regions.
- Voting participation and freedom of information practices in the regions are unrelated to corruption and regulatory burden, but some types of corruption are less severe in regions with higher newspaper circulation.
- Bribe-paying to obtain government contracts is less frequent in regions with more transparency in regional-government procurement systems.

The analyses in this report do not exhaust all of the rich data available on the Russian regions from government and other sources; nor do they provide thorough tests of all of the various fiscal and political economy hypotheses that can be derived from the literature. This report nevertheless provides a description of selected BEEPS indicators, and illustrative examples of how the data can be used to investigate why the business climate varies so much across regions. In conjunction with the accompanying BEEPS-at-a-Glance report for Russia, the report can facilitate independent interpretations, and complementary and more in-depth analyses, by researchers in government, civil society and academia.

# I. INTRODUCTION

Using data from BEEPS and other Enterprise Surveys, studies have shown that firm entry, growth and productivity are impeded by corruption and overly burdensome regulation.[7] Most of these studies have been based on cross-country data (e.g. Barseghyan, 2008), or country-specific studies of firms in China (e.g. Cai et al., 2011; Cull and Xu, 2005), Mexico (Bruhn, 2011) and other nations. Other studies, however, are specific to Russia (e.g. Yakovlev and Zhuravskaya, 2007). Cross-regional variation in corruption and regulatory burden in Russia are potentially important factors in explaining differential performance in private sector development, income levels and growth rates.

This report assesses trends over time in corruption and the regulatory burden in Russia, draws comparisons with the ECA region as a whole, and for the first time uses BEEPS to make comparisons across 37 Russian regions that represent the majority of economic activity and value-added produced in the country[8]. The intended audiences of this note are policymakers and policy analysts in the NGO and academic communities who are interested in regulatory reform, corruption, and related aspects of the business environment in Russia.

**Box 1: Useful definitions**

**Regulatory (or administrative) burden** refers to the administrative costs incurred by firms in dealing with government regulation of business. Use of the term "burden" should not be taken to imply that the optimal amount of regulations is zero, but reflects instead that fact that costs of complying with regulations (in senior managers' time, fees and bribes) remain unnecessarily high for transitional countries overall, for example in comparison with OECD countries.

**State capture** refers to the actions of individuals, groups, or firms both in the public and private sectors to influence the formation of laws, regulations, decrees, and other government policies to their own advantage as a result of the illicit and non-transparent provision of private benefits to public officials. All forms of state capture are directed toward extracting rents through distorting the basic legal and regulatory framework with potentially enormous losses for the society at large. They thrive where economic power is highly concentrated, countervailing social interests are weak, and the formal channels of political influence and interest intermediation are underdeveloped.

While state capture encodes advantages for particular individuals or groups in the basic legal or regulatory framework, **administrative corruption** refers to the intentional imposition of distortions in the prescribed implementation of existing laws, rules, and regulations to provide advantages to either state or non-state actors as a result of the illicit and non-transparent provision of private gains to public officials. The classic example of administrative corruption is that of business owners forced to pay bribes to a seemingly endless stream of official inspectors to overlook minor (or possibly major) infractions of existing regulations, or "grease payments" to gain licenses, to win public procurement contracts, etc. Finally, state officials can simply misdirect public funds under their control for their own or their family's direct financial benefit.

Sources: *World Bank (2000), Anticorruption in Transition: A Contribution to the Policy Debate. Washington, DC:*

[7] Djankov (2009) provides a useful review of the literature on the effects of regulatory barriers to starting new businesses.

[8] The list of 37 regions with accompanying variables is shown in Table A1, Annex 1 and Table 4, Annex 1.1.

Section II of this report discusses trends at the national level in regulatory burden and corruption in Russia, comparing findings from the new 2011 BEEPS to results from the 2008 survey, and for state capture questions from the 2005 survey. Most indicators show improvement over time, but there are a few exceptions, including the "state capture" questions that returned to the 2011 survey after being omitted in 2008.

**Box 2: The Russia 2012 Business Environment and Enterprise Performance Survey Data Set**

The Russian Regional Business Environment and Enterprise Performance Survey (RRS) was conducted between August 2011 and June 2012 as part of the fifth round of the Business Environment and Enterprise Performance Survey (BEEPS), a joint initiative of the World Bank Group (WB) and the European Bank for Reconstruction and Development (EBRD). The main objective of the survey was to gain an understanding of firms' perception of the environment in which they operate. The survey was until now administered four times at an interval of approximately three years with samples representative at country level. This RRS is the first BEEPS survey that provides representative though small samples for 37 separate regions of the country. A total of 4223 firms were interviewed.

The sample for Russia was selected using stratified random sampling. Three levels of stratification were used: industry, establishment size, and region:

1. Industry stratification split the universe into eight manufacturing industries (food, wood and furniture, chemicals and plastics and rubber, non-metallic mineral products, fabricated metal products, machinery and equipment, electronics and precision instruments, and other manufacturing), and seven service industries (construction, wholesale, retail, hotels and restaurants, supporting transport activities, IT, and other services).
2. Size stratification defined small (5 to 19 employees), medium (20 to 99 employees), and large (more than 99 employees), where the number of employees was defined on the basis of reported permanent full-time workers.
3. Regional stratification was defined in 37 regions (city and the surrounding business area) throughout Russia.

The sampling methodology was the same that was used for BEEPS IV and therefore allows for a direct comparison of country level results for 2008 and 2011. The 2008 BEEPS questionnaire and sampling methodology were significantly modified from previous rounds to enhance comparability of BEEPS and enterprise surveys in other regions. For that reason country level comparisons with earlier periods are avoided, except for "state capture" questions that were a part of the 2005 survey, but omitted in the 2008 round.

Great efforts were made to obtain the best source for regional sampling frames. In the majority of 37 sampled regions the survey yielded approximately 120 interviews per region. Where needed adjustments were made to correct for the presence of ineligible units within regional sampling frames. These adjustments and other implementation-specific challenges reflected in and addressed through the sampling weights computation. All estimates, if not specified otherwise, are weighted.

Source: The detailed sampling methodology and the survey questionnaire can be found at http://www.enterprisesurveys.org/documents/Implementation_note.pdf

More importantly, the 2011 BEEPS is the first one designed to be representative both at the national and regional levels. Section III discusses regional-level differences in regulatory burden and corruption. There are significant differences across Russian regions in per capita income, and lagging regions (particularly those that are not rich in natural resources) are unlikely to catch up without major improvements in the business climate. As shown in this report, there is enormous variation among regional-level means for most of the indicators. There are no strong

and consistent patterns that can justify constructing a single overall index of business climate for the regions. However, it is possible to point to several specific regions that tend to rank high, and others that rank low, on many indicators.

The high degree of regional variation not only identifies where private sector development confronts the most serious challenges. It also identifies regions where problems are much less severe, that can potentially point the way for other regions to reduce corruption and lighten the burden of regulation on firms. However, this report makes only limited progress in identifying policy differences or other underlying factors that explain why corruption and regulatory burden are much less severe in some regions than in others. For this reason, policy implications (discussed in Section IV) must remain somewhat tentative and conjectural.

This report is accompanied by the BEEPS-at-a-Glance report for Russia – a compendium of graphical illustrations of various aspects of business environment measured by BEEPS in 2008 and 2011. The dataset and questionnaire are publicly available[9], and cover many more topics than can be addressed in this note. Interested parties can conduct their own complementary analyses on regulatory, corruption-related or other issues.

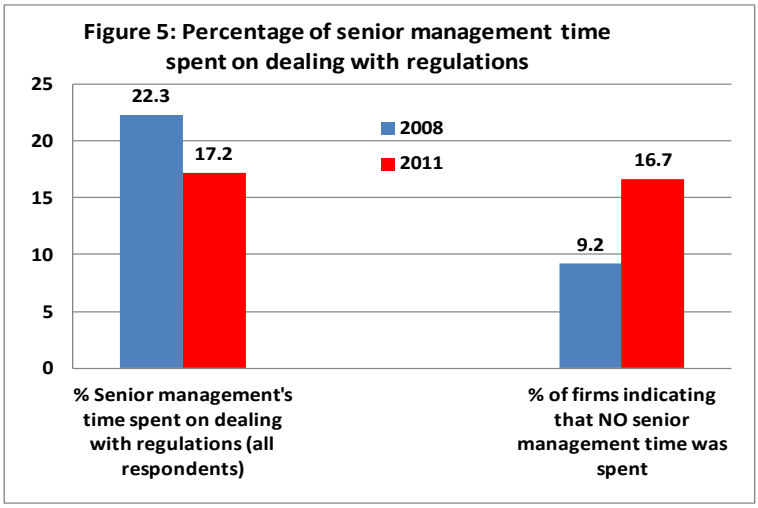
[9] http://www.enterprisesurveys.org

## II. NATIONAL TRENDS

### *Administrative Burden*

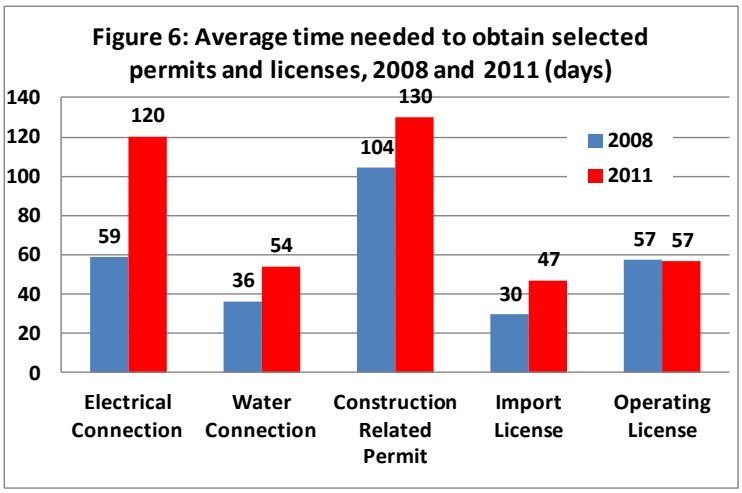
Regulations and red tape are commonly considered to be a major problem for starting and operating private sector businesses in Russia. Overall, the BEEPS indicates progress in this area between 2008 and 2011.

In the 2008 BEEPS, firms reported that 22% of the total time of their senior management on average was spent on "dealing with requirements imposed by government regulations." This figure represented a large increase for Russia from the 2005 BEEPS, and was nearly double the 12% average for ECA overall. In 2011, the average "time tax" for Russian firms declined to 17%. The share of firms reporting that no time was required to deal with regulations increased from 9% to 17% (see Figure 5). Among those firms reporting some time was required, the average fell from 25% to 21%.[10] This summary indicator of administrative burden on firms thus shows substantial improvement over the 3-year interval.




Fewer firms in 2011 also cite business licensing and permits as an obstacle to their current operations. In 2008, 30% indicated licensing and permits was not a problem, well under the ECA average of 45%; situation improved even further - 69% of respondents indicated that licensing and permits was not a problem in 2011 (see Annex 1, Figure A1).

Despite the reduction in complaints regarding licensing and permits as an obstacle, several other BEEPS questions indicate that the average waiting time between application and receipt of licenses and permits or utility connections increased somewhat between 2008 and 2011, most notably for electrical connections (see Figure 2.)[11]

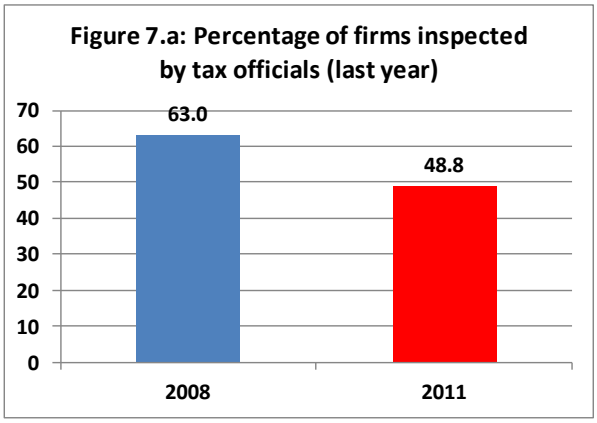


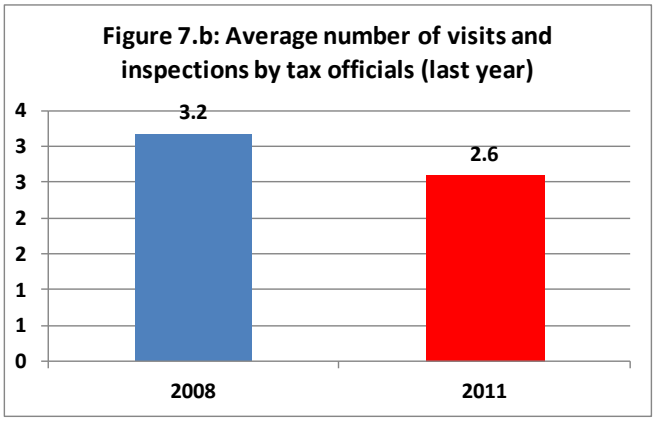

Fewer firms in 2011 cite tax

[10] This difference is not statistically significant.
[11] None of the differences in Figure 2 are statistically significant, except for "Electrical Connection."

administration as an obstacle to their current operations. In 2008, 24% indicated tax administration was not a problem, below the ECA average of 33%. The figure for Russia more than doubled to 51% in 2011 (see Figure A1 in the Annex 1).

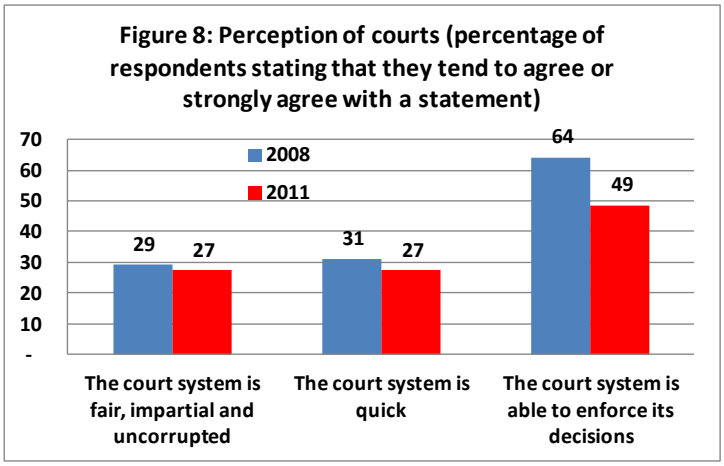
The BEEPS includes a question about the number of times either the firm was inspected by tax officials, or its managers were required to meet with them. Trends over time in responses to this question are consistent with improvement in the number of firms citing tax administration as an obstacle. In 2008, 63% of firms reported they were subject to at least one such meeting or inspection, slightly higher than the 58% average for ECA. In 2011, as shown in Figure 7.a, only 49% of Russian firms were required to meet with or be inspected by tax officials. Figure 7.b shows that among firms required to deal with tax officials, the average number of meetings or inspections declined, from 3.2 in 2008 to 2.6 in 2011.[12] In comparison, the ECA average for 2008 was slightly higher, at 3.4.




The share of firms citing labor regulations, and customs and trade regulations, as obstacles to their business operations also declined, but only slightly, between 2008 and 2011. On both of these indicators Russia's values were very close to the ECA average in 2008 (see Annex 1, Figure A1).

Perceptions of courts also improved between 2008 and 2011. In 2008, 21% of firms viewed the courts as a major or severe obstacle; compared to only 7% in 2011 (see Annex1, Figure A2). Fewer firms also report having been to court in the last three years, either as a plaintiff or defendant, in 2011 (32%) than in 2008 (43%). However, court usage in both years was higher than the ECA average of only 27% for 2008. Three additional BEEPS questions inquire about the quality of courts. As shown in Figure 8, there is little change between 2008 and 2011 in the share of firms that agree courts are "quick" or "fair, impartial and uncorrupted."




[12] This differences is not statistically significant

There is a substantial decline however in the share of firms agreeing that "the court system is able to enforce its decisions."[13] This decline appears to be inconsistent with the fact that fewer firms consider courts a major obstacle to business operations in 2011 than in 2008. However, both trends may be related in part to the lower usage of courts that firms also report. Firms may avoid courts because of low confidence in their ability to enforce decisions, and may complain less about them as an obstacle if they have not had as much recent experience with them.

Overall, trends in the administrative burden imposed on Russian firms by regulations, tax and court administration are favorable, as measured by the BEEPS:

1. The average "time tax" is significantly lower in 2011 than in 2008.
2. Among the various regulatory and administrative sub-sectors, licensing, courts and tax administration are the area where perceptions of positive trends - measured by the share of firms stating that these are not an obstacle - are most unambiguous.
3. Evidence regarding licensing, permits and utility connections is somewhat mixed: firms report longer average waiting times in 2011 for electrical connections, but fewer of them cite licensing and permits as an obstacle to their business operations.
4. Similarly, fewer firms report that courts are an obstacle, but the reason for this trend is unclear. Firms in 2011 are less likely to agree that court decisions will be reliably enforced, perhaps partly explaining why fewer firms report having used them.

***Corruption***

Corruption was ranked by firms in the 2008 BEEPS as the 3rd most serious problem for doing business in Russia, from a list of 16 potential problem areas. In this respect Russia was typical for the ECA region. Six other countries also ranked corruption 3rd, 10 ranked it higher (1st or 2nd), and 12 others ranked it lower (anywhere between 4th and 13th).

In 2011, corruption moved up to 2nd on the list of most frequently-cited problems, moving ahead of "inadequately educated workforce" and behind only "tax rates." This does not necessarily mean corruption worsened. In fact, fewer firms cited corruption as a major or very severe problem in 2011 (33.5%) than in 2008 (50%). Rather, the improvements in most other areas were even larger. For example, 57% of firms cited an inadequately educated workforce as a major or very severe problem in 2008 compared to only 26% in 2011 (see Annex 1, Figure A2). Firms in 2008 were more pessimistic about most of the possible problem areas on the list, not only compared to 2011 but also relative to the 2005 BEEPS. A possible explanation is that the 2005 and 2011 BEEPS were both administered during periods of healthy economic growth; in contrast the 2008 BEEPS was administered during the sharp but brief recession of late 2008 and 2009. When the economy – and thus firms' revenues and profits – is expanding, managers of firms may be more optimistic and cite fewer problems. General economic conditions are

[13] Changes in perceptions of enforcement are statistically significant, but not changes in perceptions that courts are "quick" or fair and impartial.

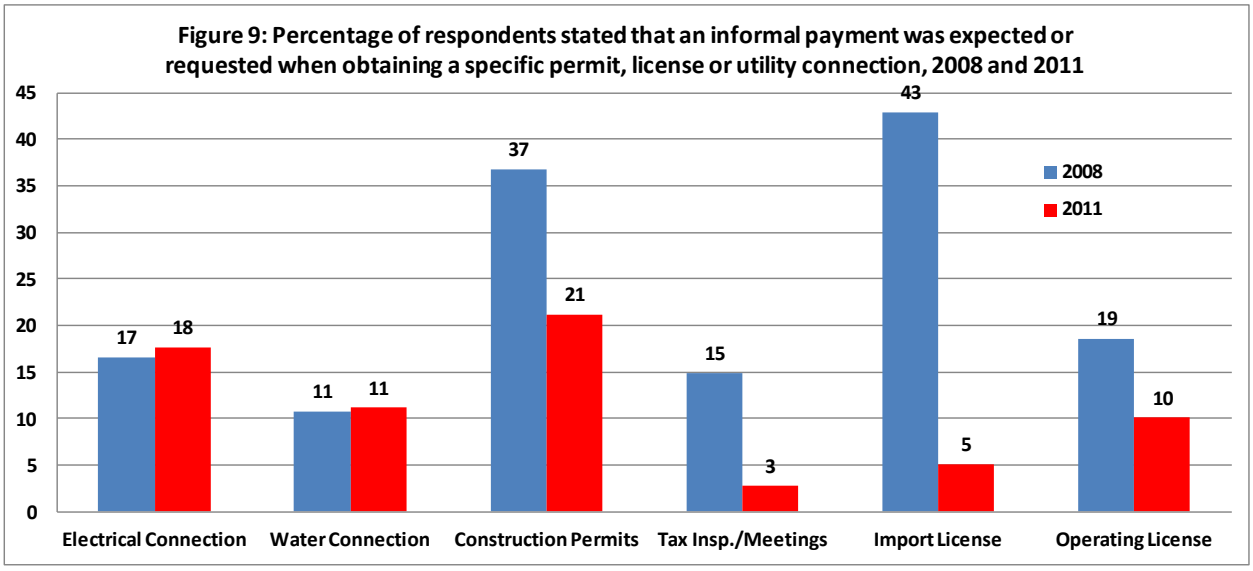
obviously not the only factor affecting responses to these questions – not all of them move up or down together over time – but may be important enough that they complicate efforts at identifying real trends.

Further complicating interpretations of the corruption-as-obstacle question is that corruption can take many forms, and it is not obvious which ones firm managers have in mind in responding to the question. Fortunately, some (but not all) specific forms of corruption as experienced or perceived by business firms are covered by other BEEPS questions, particularly for various aspects of administrative corruption.

## Administrative corruption

Questions on administrative corruption in the BEEPS present a mixed picture. Some questions inquire more directly about the firm's own experiences. Other more indirect questions ask about how likely or common it is for similar firms to pay bribes to accomplish certain purposes. The more direct questions mostly show an improving trend, while the indirect questions mostly exhibit a worsening trend.

The BEEPS includes six questions of the direct-experience form, pertaining to utility connections, licenses and permits, and tax administration. Firms that indicate they engaged in the relevant transaction with public officials (e.g. applied for an electrical connection, or were visited by tax officials) were asked whether or not "an informal gift or payment" was "expected or requested." As shown in Figure 9, bribe requests were slightly more frequent in 2011 than in 2008 for obtaining electrical and water connections, but strong downward trends are observed for construction permits and meetings with tax officials.[14]



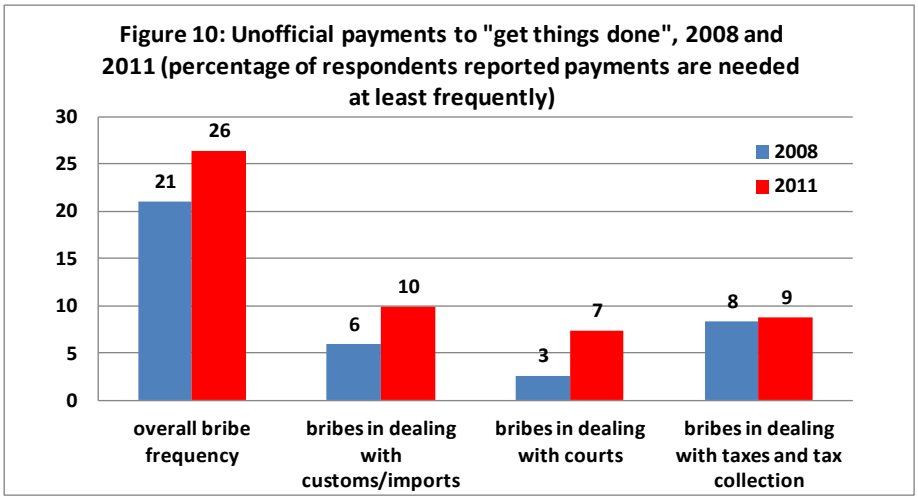

[14] The differences for bribes expected for electrical connection, water connection, import and operating licenses are not statistically significant

A summary index of the "incidence of graft" can be constructed from those six indicators, following the method of Gonzalez et al. (2007). The index is constructed by (1) summing all instances in which firms report a gift or extra payment was expected (varying from 0 to a maximum of 6 for each firm), (2) summing all of the relevant transactions reported by all firms (again varying from 0 to 6 for each firm), and (3) taking the ratio of (1) to (2). This "Graft Index" therefore represents an estimate of the share of all six areas of interactions between firms and public officials in which a bribe was expected. In the 2008 BEEPS, Russia's Graft Index was .18, above the values for most ECA countries with the exception of the Central Asian republics. In 2011, Russia's value improved to .081, about half the ECA average of .15 in 2008. Despite the improvement, it is still striking that about one in twelve transactions involves bribe expectations or requests. By comparison, in 10 ECA countries in 2008 (all in Eastern Europe) the ratio was 1 in 20 or less, including about 1 in 60 in Slovenia and less than 1 in 100 in Hungary.

A more general and less direct "Bribe Frequency" question in the BEEPS asks respondents whether the following statement is "always, usually, frequently, sometimes, seldom, or never true":

> *It is common for firms in my line of business to have to pay some irregular "additional payments or gifts" to get things done with regard to customs, taxes, licenses, regulations, services, etc.*

Figure 5 shows that in the 2008 survey, 21% of Russian firms indicated that bribes were frequently, usually or always needed, higher than the ECA average of 13%. In the 2011 BEEPS, the figure for Russia increased to 26%.




Three similar questions ask about how often extra payments would be needed for "establishments like this one" in dealing more specifically with "customs/imports," "courts," and "taxes and tax collection." In each of these three areas, a somewhat greater share of firms in 2011, compared to 2008, indicates that bribes are frequently (or always) necessary[15].

The conflicting trend in the more direct and indirect questions on frequency of administrative bribery present something of a paradox. The more indirect questions regarding what tends to

[15] The differences in overall bribe frequency, bribes in dealing with customs, and in dealing with taxes are not significant. Only the difference in bribe frequency in dealing with courts is statistically significant.

happen "for firms in my line of business" or for "establishments like this one" may elicit more candid answers than direct questions. Some firms may be reticent to tell surveyors that a bribe was expected in one of its particular interactions with a public official. On the other hand, the more indirect questions may be more subject to the possibility of inaccurate perceptions of other firms' experiences, based on second-hand information or media reports. Both types of questions have their virtues and drawbacks, so it is difficult to conclude with much confidence that administrative corruption overall has either risen or fallen since 2008.

Another administrative corruption question in the BEEPS concerns the amount paid in bribes, or "bribe tax":

> *It is said that establishments are sometimes required to make gifts or informal payments to public officials to" get things done" with regard to customs, taxes, licenses, regulations, services, etc. On average, what percentage of total annual sales, or estimated total annual value, do establishments like this one pay in informal payments or gifts to public officials for this purpose?*

For firms responding in terms of value in currency units, information on annual sales from another survey question is used to convert responses to bribe payments as a percentage of sales.[16] In 2008, 29% of Russian firms indicated they had made informal payments or gifts (i.e. a % greater than 0), compared to the ECA average of only 17%. In 2011, only 13% of Russian firms reported positive payments. Averaged over all firms, the "bribe tax" in 2008 was 1.7% of sales, above the ECA average of 1.0%. In 2011, the average "bribe tax" for Russia declined to 0.9% of sales.[17] These findings are consistent with the declining trend in administrative corruption reflected in the more direct experiential questions in the survey, discussed above.

Among those firms reporting positive payments, however, bribes as a percentage of sales increased from 4.5% of sales in 2008 to 7.3% in 2011. Payment of bribes thus became more concentrated over time: fewer firms report paying them, but those that do pay more.

Public procurement is one final category of firms' interactions with public officials covered by the BEEPS. This type of interaction is considered separately from the others, because it applies only to a subset of firms that seek to obtain government contracts. In contrast, all firms are subject to taxes and licensing requirements, and nearly all must obtain utility connections.

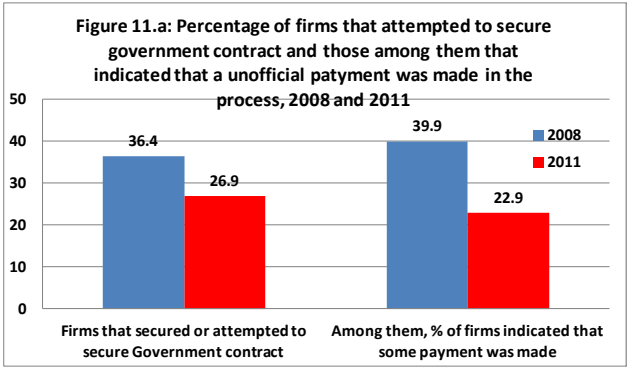
In 2008, 36% of Russian firms reported that they secured or attempted to secure a government contract over the last year, far exceeding the ECA average of only 19%. In 2011, only 27% of Russian firms reported obtaining or seeking to obtain a government contract (Figure 11.a).

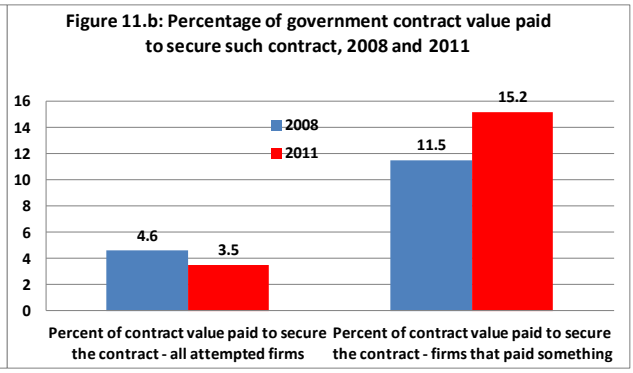
Firms that sought to obtain a contract were asked a follow-up question regarding "kick-backs":

> *When establishments like this one do business with the government, what percent of the contract value would be typically paid in informal payments or gifts to secure the contract?*

[16] The estimated "bribe tax" is much higher on average for firms that respond to the question directly in terms of a percentage, compared to those answering in terms of currency units. Responses in percentage units may well be biased upward, but any such bias should not affect comparisons from 2008 to 2011.
[17] This difference is only marginally significant (p=0.120)

In 2008, 40% of Russian firms that were asked this question reported that some payment would typically be needed. However, the corresponding figure for 2011 was only 23%. The average "kickback tax" for all firms responding (including the 0% responses) was 4.6% in 2008, more than double the ECA average of 2.1%. For 2011, the average payment was 3.5% of the contract value.[18] Among only those firms indicating that some payment was required (i.e. with the 0% responses dropped), however, the average payment rose from 11.5% of contract value in 2008 to 15% in 2011 (Figure 11.b).[19]




State capture

Administrative corruption is not necessarily the most damaging form of graft for economic growth and private sector development. The 2011 BEEPS witnessed the return of several questions on "state capture" that were included in the 1999, 2002 and 2005 BEEPS, but dropped from the 2008 survey. Trends in state capture between 2005 and 2011 in Russia are unfavorable.

The term "state capture" refers to "the actions of individuals, groups or firms both in the public and private sector *to influence the formation* of laws, regulations, decrees and other government policies to their own advantage as a result of the illicit and non-transparent provision of private benefits to public officials" (World Bank, 2000). While administrative corruption distorts the implementation of laws and regulations, state capture distorts their content to favor certain firms or officials. More generally, the term state capture is sometimes applied to cases where high-level government officials "capture" profitable private firms, allocating their assets or top management positions to political allies. "Crony capitalism" is a useful term that covers any system in which boundaries between the private and public sectors are blurred, whether due to private firms "capturing" the state or to state officials "capturing" private firms. The key distinction is not "who captures whom" but that "the concept of a conflict between public duties and private interests is either poorly understood or inadequately respected" (World Bank, 2000: p. 9).

The first *Anti-Corruption in Transition* report (World Bank, 2000), using data from the 1999 BEEPS, found only a modest correlation across ECA countries between a state capture index and another index of administrative corruption. Russia ranked near the median country in ECA on

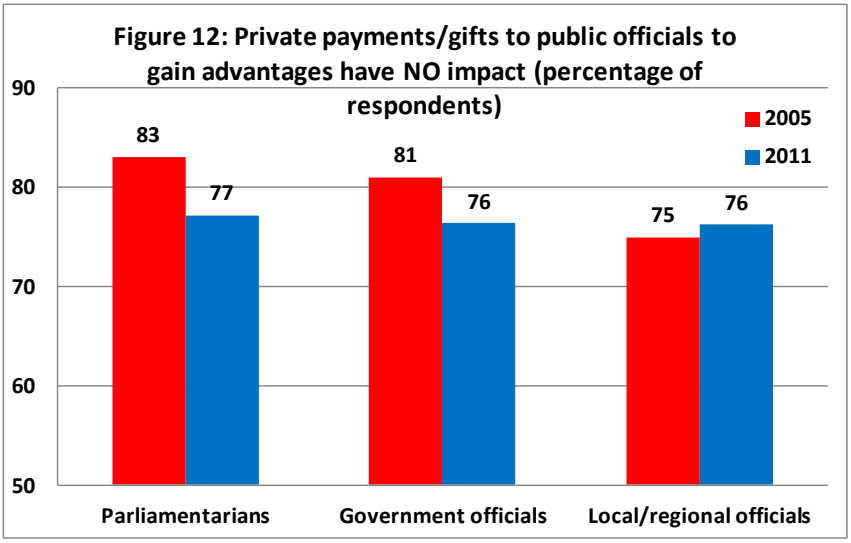
[18] Not statistically significant difference
[19] The difference is only statistically significant for firms that paid something; it is not significant for all firms attempting to obtain a contract.

administrative corruption, but problems of state capture were more severe than in most ECA countries, according to the 1999 BEEPS.

The 2011 BEEPS included the following three "state capture" questions for which comparisons can be made with 2005:

> *It is often said that firms make unofficial payments/gifts, private payments or other benefits to public officials to gain advantages in the drafting of laws, decrees, regulations, and other binding government decisions. To what extent have the following practices had a direct impact on your business? (No impact, minor impact, moderate impact, major impact, decisive impact)*
>
> *a. Private payments/gifts or other benefits to Parliamentarians to affect their votes*
> *b. Private payments/gifts or other benefits to Government officials to affect the content of government decrees*
> *c. Private payments/gifts or other benefits to local or regional government officials to affect their votes or content of government decrees*

The perceived impact of state capture, as measured by each of these three questions, increased between 2005 and 2011. As shown in Figure 12, the percentage of firms claiming no impact of these practices declined, by 6 and 5 percentage points for questions (a) and (b), respectively, but remained almost unchanged - increasing by 1 point - for question (c). Viewing responses from the other end of the scale, the adverse trend appears more serious. The percentage of firms claiming a major or decisive impact doubled for question (c) and tripled for questions (a) and (b).




***Summary***

Overall, trends in regulatory burden and corruption as measured by the BEEPS are mixed. Perceptions of state capture and perceived frequency of bribe-paying by firms "like this one" or "in my line of business" have increased in recent years. Waiting time for utility connections and permits has increased. On the other hand, the average "time tax," "bribe tax" and "kickback tax" have all declined. The incidence of graft, as measured by direct questions about firms' experiences with public officials, has also declined. The number of tax inspections and meetings

has declined, and perceptions that tax administration, business licensing and permits, and corruption are serious obstacles to business operations have all improved. The subsequent section examines evidence from other sources that complement – and potentially corroborate or conflict with - evidence from the BEEPS.

***Other sources***

The World Bank's *Doing Business* (DB) indicators address some of the same regulatory issues as are measured in the BEEPS. The DB methodology is quite different, however. First, it does not attempt to ascertain what actual firms have experienced. Rather, it identifies the procedures that are officially required to accomplish a task, and estimates the minimum time and costs necessary "under normal circumstances" (e.g. it assumes procedures cannot be bypassed and processing time cannot be reduced by paying a bribe). Second, because official requirements can vary based on firm characteristics (location, size, ownership, etc.), it measures them for a hypothetical firm that fits a particular set of assumptions. Among other assumptions, most DB indicators assume the firm is located in the country's largest city, is 100% domestically owned, and does not engage in foreign trade. The relevance of the DB indicators will therefore vary by country: they will be most relevant for small countries with centralized governments and a large share of its firms operating in the largest city (Singapore is an extreme example). In large, decentralized countries such as Russia, the U.S. or India, the indicator values may strictly apply to only a small fraction of firms. Nevertheless, trends in DB indicators may provide a rough measure of trends in the regulatory environment in a country more widely.

The declining number of firms in the BEEPS that cite tax administration as an obstacle is consistent with changes over time in the "Paying Taxes" indicators for Russia in DB. In 2008, according to DB, 10 different tax payments were required, and filing the forms was estimated to take 448 hours. In 2011, only 9 payments requiring 290 hours were required. However, caution must be exercised in attributing firms' improved perceptions of tax administration as measured in BEEPS to any reduction in time required to file taxes as measured by DB. As mentioned above, the DB estimates apply only to firms with a specified set of characteristics (including being based in the country's largest city), and no details are provided by DB regarding what reforms might have accounted for the improvements in Russia (Moscow, specifically) between 2008 and 2011.

The increased waiting time for construction permits as measured in BEEPS conflicts with an opposite trend in official requirements, as measured by DB. According to DB, the time required to obtain construction permits fell from 623 to 423 days in 2011, when "Russia eased construction permitting by implementing a single window for all procedures related to land use."[20] However, the actual average waiting time as measured by BEEPS increased from 104 days in 2008 to 130 days in 2011. Note that the two sources are not measuring the same thing – even ignoring the caveats regarding the DB methodology mentioned above. The BEEPS question asks about one important step in the process: waiting time once the application was made. The DB indicator covers additional steps. This provides one more illustration as to why

[20] See http://www.doingbusiness.org/reforms/overview/economy/russia.

evidence from the BEEPS and DB may appear to conflict, even if they are both accurately measuring what they attempt to measure.

The cost of obtaining construction permits, as measured by DB, fell by more than 90% from 2008 to 2011. This improvement is consistent with the fact that fewer firms in BEEPS regarded business licensing and permits as a major obstacle in 2011 compared to 2008, although many other factors undoubtedly contribute to the latter trend.

Russia's DB indicators exhibit little or no change during the 2008 to 2011 period in several other regulatory areas covered by BEEPS. These include the DB categories "Starting a Business," "Registering Property," "Getting Electricity," "Trading Across Borders" and "Enforcing Contracts."

An important caveat is that the cross-country DB database applies only to the largest city in each country – Moscow, in the case of Russia - and rules may vary substantially across cities and regions within a country. In several countries, including Russia, sub-national studies have been conducted. The Russia study covers only the 4 areas of regulation, out of 11 total DB topics, where sub-national governments have substantial responsibility and exhibit meaningful variation in the data (World Bank, 2012: p. 7). Moscow ranks at or near the bottom among the 30 municipalities covered in the sub-national Russia DB study, so Russia's relatively low ranking in the cross-country DB does not accurately reflect the rules facing firms in most parts of the country. Moreover, the sub-national study documents reforms in these four areas in many Russian municipalities implemented in recent years, even when no reforms were implemented in Moscow.

The World Economic Forum's annual "Executive Opinion Survey" (EOS) conducted in Russia and about 140 other countries, is another useful source that includes numerous questions pertaining to regulatory burden and corruption. Although survey respondents are firm managers, the sample of firms is not designed to be nationally representative as with the BEEPS. Instead, the goal is to identify respondents who are relatively well-informed about Russia in cross-national perspective. The resulting sample over-represents firms that are larger, trade across borders, and have some foreign ownership. For many countries, the sample is small (well under 100 for some), but for Russia the sample in most years is between 350 and 600.

One EOS question asks whether complying with government's regulatory requirements are "burdensome," on a scale of 1 to 7, where higher ratings reflect perceptions of a lower burden. The average score for Russia has fluctuated slightly in recent years, but is higher (i.e. better) in the most recent survey than in any prior year. A separate question on efficiency of customs exhibits some year-to-year variation but no evidence of a trend.

Questions pertaining to state capture show a worsening trend in recent years, consistent with the BEEPS indicators. One difference however is that BEEPS data on perceptions of state capture as a problem are available only for 2005 and 2011, not for the intervening years. The annual data in the EOS show a favorable trend between 2005 and 2008, followed by steady deterioration between 2008 and 2011. The EOS question most similar to the BEEPS questions asks whether the respondent's firm is adversely affected by illegal payments influencing policies, laws and

regulations. A second relevant question asks about whether "well-connected" firms receive favorable treatment when public officials make decisions on policies and government contracts. Both of these questions show a similar worsening trend in the last several surveys conducted by the WEF in Russia. Another question indicates declining trust in the financial honesty of politicians over the last few years, partially negating a sizeable jump that occurred between 2008 and 2009. Perceptions that corrupt diversion of public funds for private use have also increased every year beginning in 2007.

Transparency International (TI) and the Worldwide Governance Indicators (WGI) both publish composite indexes of corruption, based on numerous "expert" (e.g. from the EIU) and survey (e.g. the WEF) sources. These indexes mix administrative corruption, state capture and other forms of graft, so they reflect a very broad definition of corruption. Moreover, the methodology of these indexes is designed primarily to compare countries to each other at a point in time, rather than to measure progress over time for a given country. Nevertheless, they can be a useful tool for assessing whether corruption perceptions in a country are improving over time *relative to other countries*. Russia's most recent TI "Corruption Perceptions Index" rating (published in 2011 but reflecting a mix of sources from the years 2009 through 2011) of 2.4 represents its highest rating in the last 5 years. The WGI "Control of Corruption" index (constructed using the same sources as TI, plus a few additional ones) exhibits a similar trend: following a steady decline from 2003 to 2009, Russia's rating improved slightly in 2010 and then again in 2011.

The WGI also provides a composite index of "Regulatory Quality." Higher scores reflect a lower regulatory burden. Russia ranks much higher on this index (at about the $40^{th}$ percentile among all countries) than on WGI's corruption index ($10^{th}$ or $15^{th}$ percentile), but its rating has changed very little since 2006.

## III. REGIONAL COMPARISONS

The 2012 Russia survey is the first BEEPS designed to be representative at sub-national levels within a country. In most of the 37 regions included in the survey, about 120 firms are represented.

Results show that the business environment differs significantly across regions. The region in which firms are located turns out to have fairly strong implications for the degree of corruption and the regulatory burden they confront. For example, a full set of regional dummy variables statistically accounts for 12% of the variation in firms' reported "time tax." In contrast, only 6% of the variation can be explained collectively by many other firm characteristics: firm size (measured by number of employees and revenue), age, ownership (private, foreign and public), industry, and product or service accounting for the largest proportion of sales. Similarly, about 20% of the variation in firms' perceptions of "state capture" can be statistically explained by their location (i.e. by regional dummy variables), compared to only about 6% for size, age, ownership, industry and main product or service[21].

The large regional variation in these and other BEEPS indicators is shown in Table A1 in the Annex 1 and Table 4 in Annex 1.1. For the 37 regions included in the BEEPS, this table presents averages for selected administrative burden and corruption indicators. For example, the "time tax" indicator exemplifies the dramatic variation across regions - The mean "time tax" varies from 1% for Primorsky Kray to 49% for Stavropol Kray. Moscow is in the middle of the distribution, at 19%.

### *Administrative Burden*

Although regions differ significantly from each other, the same regions that rank at or near the top on some indicators – perhaps surprisingly - rank at or near the bottom on others. The average number of meetings with tax officials ranges from 1.3 for Smolensk to 5.3 for Ulyanovsk Oblast. Stavropol Kray ranks 5$^{nd}$ best, with an average of 1.8 per firm, despite having the highest average "time tax."

Smolensk Oblast also ranks best on waiting time for electrical connections, with an average of only 8 days. Average waiting time is longest for Primorsky Kray, at 730 days, nearly double the time for any other region. On the other hand, Primorsky Kray has the shortest average wait for water connections, at only one day. Smolensk Oblast ranks 2$^{nd}$–best at 1.8 days, while the 315-day wait for St. Petersburg is more than double the waiting time in any other region.

Firms in Murmansk Oblast report an average wait of only 15 days for construction permits, compared to a high of 515 days for Yaroslavl Oblast Smolensk Oblast and Moscow rank 2$^{nd}$ - and 3$^{rd}$- best, at 30 days. Waiting time for operating licenses averages only 8 days in Kirov Oblast, but 82 days in Perm Oblast. Stavropol Kray (22 days) and Smolensk Oblast (28) rank 2$^{nd}$- and 3$^{rd}$- best.

[21] Analysis of cross-country results of earlier rounds of BEEPS have also shown that country dummies account for more significant portions of variation than special attributes of individual firms in the sample.

When multiple indicators are available to measure performance on a broad underlying concept such as administrative burden and red tape, it is common to construct a single summary index. For example, the *Doing Business* project publishes an overall index of "Ease of Doing Business" constructed from all of its sub-indicators. If correlations among the indicators are low, however, index reliability will be low and a single measure may obscure more than it reveals. In the 2011 Russia BEEPS, the region-level correlation between waiting times for electrical and water connections is only .19, and the correlation between waiting times for operating licenses and construction permits is only .12. A composite index of these BEEPS wait-time indicators would rank Smolensk Oblast at the top, which accurately summarizes the fact that Smolensk Oblast ranks very high on a range of relevant indicators. Primorsky Kray would rank near the middle, however, which would unhelpfully obscure the fact that it performs very well on some indicators (and could even serve as a model for other regions) and very poorly on some others (so may benefit from looking to Smolensk Oblast and other regions as models for reform efforts).

A more statistically reliable composite index for purposes of ranking regions can be constructed from a different set of BEEPS questions, pertaining to various potential obstacles to firm operations and growth. Questions are of the general form "to what degree is [e.g.] business licensing and permits an obstacle to the current operations" of the firm. (See Annex 2 for more details.) Seven questions were selected, each measuring some aspect of regulatory burden:

Business licensing and permits
Tax administration
Customs and trade regulations
Access to land
Labor regulations
Courts
Corruption

Courts are included because they are often used as mechanisms for enforcing or appealing regulatory decisions. Corruption is included because regulations are sometimes formulated or applied by public officials in ways designed to extract bribes, and because firms sometimes offer bribes or "gifts" to influence the content or enforcement of regulation.

An "Administrative Obstacles" index was constructed as the simple average of these 7 indicators. The index has a very high reliability coefficient of .90, and the average inter-item correlation among the 7 questions is .55.[22]

Table 4 in Annex 2 shows the full regional rankings on this index. The top 5 regions in order are: Smolensk, Belgorod, Stavropol, and Irkutsk Oblasts and Republic of Mordovia. The bottom 5 regions are (starting with the worst): Rostov, Leningrad, and Samara Oblast, Krasnodar Kray, and St. Petersburg City.

[22] The reliability coefficient increases with the number of items in an index and with the average inter-item correlation.

### *Corruption*

Smolensk Oblast easily ranks as the region where corruption is perceived least often as an obstacle to operating a business. Its mean on a 0-4 scale (with 0 indicating no obstacle, and 4 indicating "very severe" obstacle) is only 0.2. Irkutsk Oblast and Kirov Oblast rank 2nd and 3rd at 0.8, while corruption is most perceived as a problem for firms in St. Petersburg (2.3)[23], closely followed by Leningrad Oblast, Moscow and Rostov Oblast.

Regions where corruption is perceived as a more serious obstacle also tend to be the ones where higher "bribe taxes" are reported (correlation = .42) and where firms indicate that "irregular payments" are frequently needed "to get things done with regard to customs, taxes, licenses, regulations, etc." (correlation = .41). The survey question on whether corruption is an obstacle to the firm's operations does not provide a definition for corruption, so it is not obvious whether firms harmed by corruption perceive administrative corruption or state capture as the bigger problem. To answer this question, firm-level responses to the corruption-as-obstacle question were regressed on a number of firm and regional characteristics, including responses to the more specific survey questions on state capture and administrative bribery. These tests provide a strong indication that administrative bribery is the main corruption-related obstacle that enterprise managers have in mind when responding to the question. Responses to the "bribe frequency" and state capture questions are both significant predictors of the degree to which whether firms perceive corruption as an obstacle, but the former question is a far more powerful predictor than the latter (see Annex 3, regression 4.2). Similarly, the Graft index – reflecting firms' recent experiences with administrative bribery – is also a far more powerful predictor of whether firms cite corruption as an obstacle than are firms' perceptions of state capture.

Table 4 of Annex 2 shows how the regions rank on two indexes constructed from BEEPS questions pertaining to administrative corruption. One is the Graft Index, defined above as the share of firms' reported interactions with officials in which they report needing to pay a bribe. A second index, the "Administrative Corruption Index," is constructed from responses to the "bribe frequency" question as well as three similar questions that ask more specifically about whether it is common for "establishments like this one" to pay bribes in dealing with customs, courts and taxes.

Stavropol Kray ranks at the top on this Administrative Corruption Index, followed by Ulyanovsk Oblast, Lipetsk Oblast and the Republic of Mordovia (where 1 indicates bribes are "never" needed and 7 indicates "always"). Smolensk Oblast ranks 8th-best among the 37 regions at 1.9. Primorsky Kray (3.1) ranks at the bottom, just above Tver Oblast, Rostov Oblast, and Chelyabinsk Oblast.

Rankings on the Graft Index look quite different, despite the fact that both indexes pertain to administrative bribery. The difference between them is that one is based on questions about the firm's reported *experiences* related to a set of specified transactions, while the other is based on questions about respondents' *perceptions*, namely what they *think* happens with similar firms, for a similar (but not identical) set of specified interactions.

[23] In other words, corruption is more than a moderate obstacle to firm operations and growth in this region.

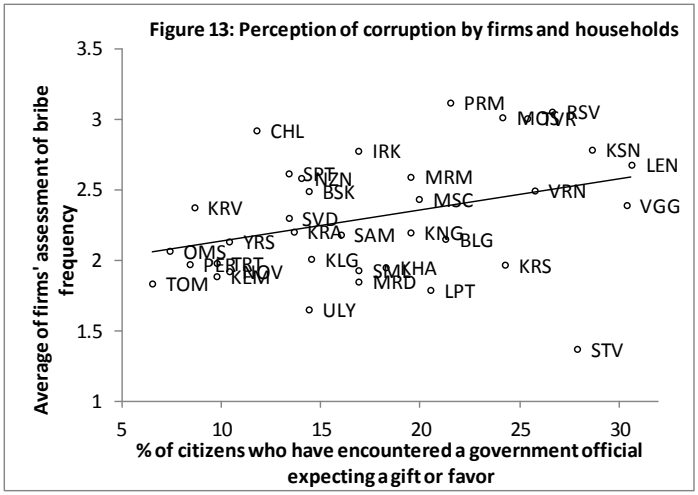
These subtle distinctions in how questions are asked have surprisingly large implications for firms' responses: correlations between the two types of indicators turn out to be extremely low. None of the top-ranked regions on the Administrative Corruption Index appears among those highly-ranked on the Graft Index. Smolensk Oblast is the top-ranked region on the Graft Index, followed by Novosibirsk Oblast, St. Petersburg, Moscow City, and Primorsky Kray. The regions at the bottom of the list are also entirely different. Voronezh Oblast, the Republic of Bashkortostan, and Krasnodar Kray are the regions ranked worst on the Graft Index.

The policy implications of perceptions questions vs. experiential questions may also differ. For example, perceptions of corruption in two jurisdictions with the same incidence of actual corruption may differ, if there are more effective channels of communication in one jurisdiction than in the other. Freedom of information laws and a more independent and competitive media can worsen perceptions of corruption (e.g. Costa, 2012).

Region-level correlations among the three state capture indicators are extremely high, ranging from .94 to .98. Table 4 of Annex 2 shows how the regions rank on a State Capture index, constructed as the mean of these three indicators. Khaborovsk Kray, Kursk Oblast, and Ulyanovsk Oblast are the top-ranking three regions on this index. All three of them rank in the middle among regions on the "Administrative Obstacles" index. The Republic of Mordovia is the only region ranking in the top 5 on both the State Capture index (4$^{th}$) and on the Administrative Obstacles index (5$^{th}$). It is also one of only two regions (along with Ulyanovsk Oblast) to rank in the top 5 on both State Capture and Administrative Corruption. Despite its top ranking among the 37 regions on both the Administrative Obstacles Index and Graft Index, Smolensk Oblast ranks only 20$^{th}$-best on the State Capture index.

Primorsky Kray and Irkutsk Oblast (ranked only 36$^{th}$ on the State Capture index, but 4$^{th}$ on the Administrative Obstacles index) are ranked in the top 5 on one of the four indexes in Table 4 of Annex 2, but in the bottom 5 on another index. Only one region, Krasnodar Kray, is ranked in the bottom 5 on all four indexes. Rostov Oblast is ranked among the bottom 3 on three of the four indexes. Although the three state capture indicators are strongly correlated (at about .70) across regions with the "bribe frequency" indicator, they are only weakly correlated with the corruption-as-obstacle indicator and with responses to the "bribe tax" question. Moreover, questions on direct experience with bribe paying (in connection with taxes, permits, and utility connections) are weakly correlated with most other corruption indicators at the regional level.

Public opinion surveys in Russia, designed to be representative at the regional level, have included some corruption-related questions. There is some congruence between firms' experiences and perceptions in the BEEPS, and citizens' experiences and perceptions in these household opinion surveys. For example, a 2011 Public Opinion Foundation (FOM) survey asked whether or not a public official has requested an "unofficial payment" or favor from them in the last 1 or 2

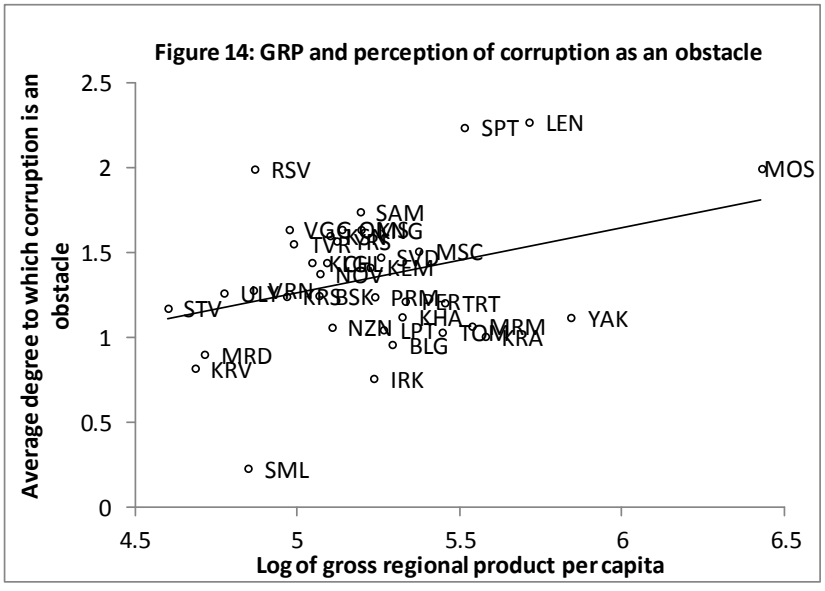


years. Among regions represented in the BEEPS, the percentage of citizen respondents who had been asked for a bribe ranged from a low of 6% in Tomsk to a high of 31% in St. Petersburg. Responses in this survey were positively correlated at the regional level with several BEEPS indicators. Figure 13 shows the relationship (correlation = .35) between this FOM question and firms' reports of "bribe frequency," i.e. whether or not it is frequently necessary for similar firms to make unofficial payments "to get things done." The FOM indicator is also positively correlated (at .35) with firms' perceptions of the impact on their businesses of state capture at the local and regional level.

***Why do regions differ?***

Although regulatory burden and corruption challenges confronting firms can be predicted to a significant degree from their location, it is not easy to identify *why* regions matter. Regions differ with respect to historical influences, income levels, dependence on natural resources, and in regulatory and anti-corruption policies. These differences potentially account for why firms in different regions report greater or lesser problems related to red tape and corruption. It turns out to be difficult however to empirically establish significant linkages between regional characteristics and measures of regulatory burden and corruption.

Cross-country studies on corruption, including those using cross-country BEEPS results, often find positive correlations with per capita income (e.g. Treisman, 2007) and other measures of socioeconomic development. Dininio and Orttung (2005) analyze 40 Russian regions, and show that higher gross regional product (GRP) per capita is associated with lower administrative corruption, as measured by surveys of experiences of citizens and entrepreneurs. Their survey data were collected in 2002 (by Transparency International and the INDEM Foundation), and only 27 of their 40 regions are represented in the 37-region BEEPS survey. Most regional-level indicators of regulatory burden and corruption in the BEEPS are not significantly correlated with per capita GRP. In the few cases where a significant relationship is found, the correlation is actually positive. Figure 14 shows regional values for GRP per capita in the X axis, and regional means for the BEEPS corruption-as-an-obstacle question on the Y axis. The positive relation shown by the least-squares line in the figure appears to be sensitive to the case of Moscow, a rather extreme outlier on GRP per capita. When Moscow is dropped, the relationship remains positive but is weaker and not statistically significant.



Dininio and Orttung (2005) also find that citizens and firms report experiencing more corruption in regions with larger government, as measured by the number of bureaucrats. Controlling for regional population and other variables, however, there is no significant relationship in the BEEPS data between the number of regional civil servants (or the civil servant wage bill) on the one hand, and indicators of corruption and regulatory burden on the other. Region size itself appears to matter for some forms of corruption: in more populous regions, other things equal, the bribe tax and Graft index tend to be higher, and firms are more likely to report that corruption is an obstacle (see Annex 3).

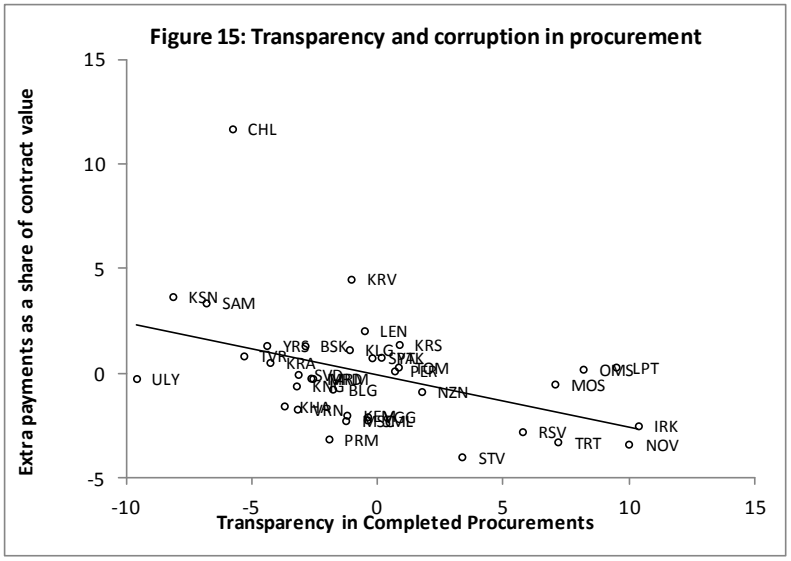
Some cross-country studies have also found a positive relation between corruption and dependence on natural resource revenues. In their study of 40 Russian regions, however, Dininio and Orttung (2005) are unable to detect any significant link between resource dependence and administrative corruption. Chirkova and Bowser (2005) observed from the same TI/INDEM survey data that – counter to conventional wisdom - corruption was lower in the natural-resource-rich regions such as Tyumen Oblast and Bashkortostan. The BEEPS data produce similar results: natural resource extraction as a share of GRP tends to be weakly related to most measures of corruption and regulatory burden from the BEEPS. Controlling statistically for other regional- and firm-level factors in multiple regression analyses, firms located in more resource-dependent regions are actually significantly *less* likely to report that corruption is an obstacle, or that irregular payments are often required to get things done ("bribe frequency"), or that state capture has an impact on their firms (see Annex 3 for full regression results.)

In reporting on the TI/INDEM survey findings, Dininio and Orttung (2005) and Chirkova and Bowser (2005) conclude that corruption tends to be more severe in southern regions such as Rostov Oblast than in northern regions such as Karelia and Yaroslavl Oblast. In contrast, most of the BEEPS indicators on corruption and regulatory burden exhibit no discernible geographic pattern for the Administrative Obstacles index. Controlling for other region and firm characteristics in multiple regression analyses (see Annex 3), latitude is insignificant in most cases; for the Graft index and the bribe tax, corruption tends to be significantly *worse* in the northern regions (i.e. latitude has a significant and positive coefficient), counter to expectations.

Regional policies potentially affect the level of certain aspects of corruption as experienced by firms. Transparency of information on public procurement is one such area. Balsevich, Pivovarova and Podkolzina (2011) examined how well 83 regional public procurement web sites complied in 2007 with the recently-passed Federal Law on Public Procurement. Their overall Transparency Index was constructed from four sub-indicators, on Current Procurements, Completed Procurements, Search functions, and Additional Features (including feedback mechanisms and availability of summary statistics on regional procurement).

A natural hypothesis is that in regions with greater transparency in public procurement, the average "kickback tax" to obtain government contracts reported by firms in the BEEPS would be lower. Controlling for per capita GRP and region population, this hypothesis is supported in a multiple regression analysis. The relationship is significant at the .05 level for the overall Transparency Index and at the .01 level if the Completed Procurements indicator is used instead.

Figure 2.3 shows the partial relationship between transparency in Completed Procurements and the mean "extra payments" needed to secure a contract as a share of contract value, controlling for population and per capita GRP (see Annex 3, regression 6.6 for details). Chelyabinsk is an outlier in the regression, with relatively low transparency and extremely high "extra payments." It is an industrial region with a high level of military production, which may have something to do with its relatively low level of transparency in government procurement. If Chelyabinsk is dropped from the regression, the slope of the regression line declines from -.27 to -.20, but statistical significance of the relationship actually strengthens.[24]




Regions also differ with respect to freedom of information (FOI) policies. Transparency International Russia recently classified all regions into one of three categories: those with effective FOI laws, those with effective FOI decrees, and those with neither.[25] These three categories of regions do not differ significantly on average; however, on the BEEPS indicators of regulatory burden and corruption (e.g. see Table B5 in Annex 3).

Dininio and Orttung (2005) tested two additional proxy "measures for getting at political and civil aspects of accountability" (p. 504). Neither of these measures – voting turnout rates and an index of media freedoms in the region – were significant predictors of regional corruption rates in their study. Voting turnout (using more recent data) is also unrelated to the BEEPS corruption indicators, in regional-level analyses.

Nevertheless, there is some evidence that better-informed voters and users of government services can be effective in limiting corruption. Other things equal, state capture and bribe frequency is lower in regions with higher per capita newspaper circulation (see Annex 3, Table B5, regressions 5.2 and 5.6).

Regional policies with respect to regulation also potentially affect firms' experiences and perceptions of regulatory burden and corruption. The recent regional-level *Doing Business* (DB) study for Russia (World Bank, 2012) covered four topics: Starting a Business, Getting Electricity, Dealing with Construction Permits, and Registering Property. The BEEPS also includes questions directly pertaining to the first three of these issues. The DB study shows that in regions where firms must complete *more* procedures to start a business, they are able to

[24] Regions, not firms, are the unit of analysis in these regressions. Table B6 in Annex 2 demonstrates that the relationships described here also hold in firm-level analyses that control for a large number of firm and region characteristics.

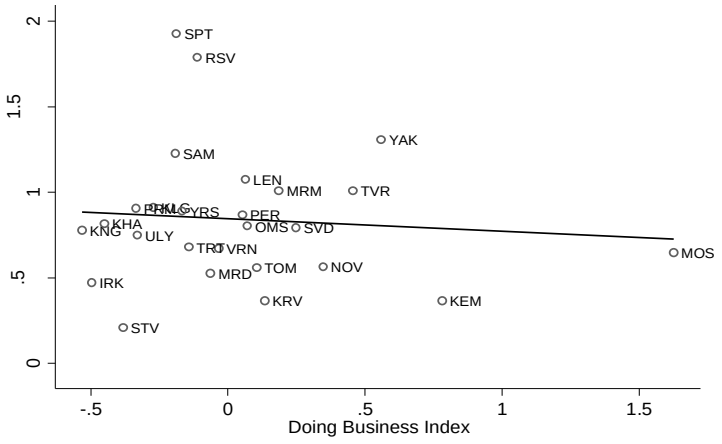
[25] http://transparency.org.ru/en/news/russia-celebrates-the-10th-anniversary-of-international-right-to-know-day

complete the process in *fewer* days. Controlling for other variables, firms report a shorter waiting time for obtaining an operating license in regions where DB indicates that the process can be completed in fewer days (Annex 3, Table B2, regression 2.5). More often than not, unfortunately, DB indicators are able to explain very little, if any, of the variation in regulatory burden as reported by firms in the BEEPS.

An overall "Doing Business" index can be constructed as an equal-weighted average of four DB sub-indexes, each in turn reflecting an equal-weighted average of the several indicators under each of the 4 topics covered by the Russian regional DB study. Higher values of the index reflect more procedures, longer waiting times and higher costs. This index, however, is not significantly related to the "time tax" reported by firms, (see Annex 3, Table B1, regression 1.2) or firms' perceptions of licensing and permits as an obstacle (Annex 3, Table B3, regression 3.2).

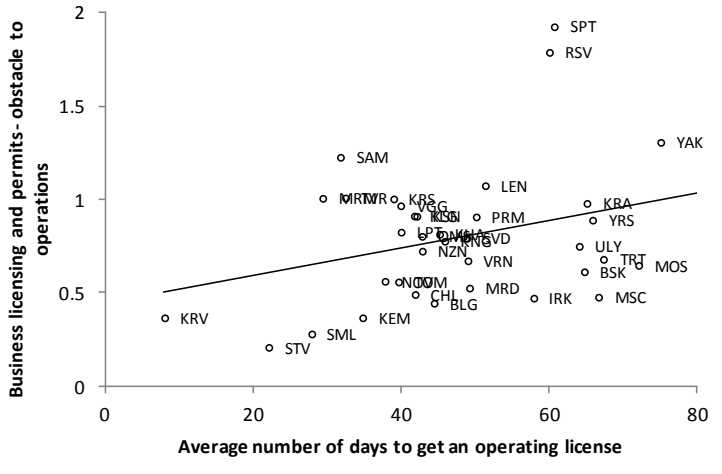
Figure 16 on the right portrays the regional average of this licensing-as-an-obstacle indicator on the Y axis, and number of days required obtaining an operating license as measured by DB on the X axis. As shown by the super-imposed least-squares line, there is a weak negative (i.e. counterintuitive) relation between them. The absence of any strong positive relationship in this figure does not imply that waiting time for licenses is not a problem for firms.

**Figure 16: Correlation of DB and licensing as an obstacle indexes**




The BEEPS includes a question on firms' actual experiences with waiting time for operating licenses. As shown in the Figure 17, regions with higher average wait times tend to be the same regions where firms are most likely to report that licenses and permits are an obstacle to them.[26] Firms within a given region report widely varying waiting times, not only diverging from each other but also from the waiting time estimated for a hypothetical "typical" firm in the DB study.

**Figure 17: Time and difficulty of obtaining a license**




The number of *days* required to obtain an electrical connection as measured by DB is uncorrelated with BEEPS indicators on (1) waiting time for an electrical connection, and (2)

[26] This relation also holds when controlling for numerous other variables, as shown in regression 3.4 of Annex 2.

perceptions of electricity as an obstacle to business operation. The number of *procedures* required to obtain an electrical connection as measured by DB is uncorrelated with the BEEPS indicator on waiting time for an electrical connection, but paradoxically is *inversely* correlated with perceptions of electricity as an obstacle to business operation.

At the cross-country level, an overall Ease of Doing Business index (constructed from more topics than the 4 available in the Russia study) is strongly correlated with TI's Corruption Perceptions Index: where rules impede business less, corruption is lower.[27] At the cross-regional level in Russia, there are good reasons to expect a more modest link between them. First, there is much less variation among Russian regions than across countries in the DB data, especially in the indicators on Starting a Business and Registering Property. Second, the strong cross-country relationship is likely to be biased upward by omitted variables – e.g. cultural, historical and institutional differences – that are correlated with regulation and corruption. In analyzing a single country, many such factors are effectively held constant, limiting the potential for spurious correlation. The overall DB index turns out to be only weakly related to most corruption indicators in the BEEPS. One exception is the Graft index (see Annex 3, Table B6, regression 6.2). Firms located in regions that DB ranks as having more onerous rules are more likely to report having paid bribes in their dealings with public officials. Looking separately at the components of the DB index, it turns out that the sub-index on Getting Electricity is driving this result. The other three sub-indexes are unrelated to the likelihood of paying bribes.

A third possible explanation for many of the modest regional-level correlations described in this note is that special interests wishing to block entry or disadvantage new competitors may focus on a single area. They may sometimes be able to create high costs for competitors – and preserve rents for themselves – through imposing lengthy delays or high fees or bribes in only one or two important administrative transactions. Imposing additional costs in other transactions may be largely redundant, and entail more costs to the rent-seeking coalitions. These particular transactions or regulatory areas may be different in different regions. If so, the same regions performing poorly on one area (for example tax administration) would not necessarily be expected to perform poorly in another (for example operating licenses). From this perspective, bureaucratic capacity is not the key factor affecting regulatory burden and corruption in the regions. In contrast, the higher cross-country correlations generally observed among these indicators is more likely to reflect variations in bureaucratic capacity, as countries vary far more in administrative traditions and income than do the Russian regions.

### *Regulatory Burden, Administrative Corruption and State Capture*

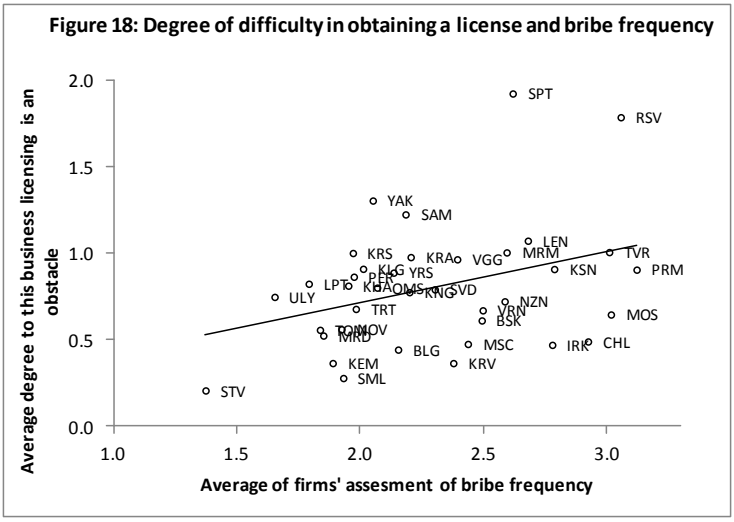
It is often argued that excessive regulation can encourage corruption. For example, if firms are required to fill out numerous forms, to visit multiple offices, and to pay numerous and large fees to set up a new business, public officials may be tempted to accept – and even solicit – extra "unofficial payments" or "gifts" to speed up the process. Excessive red tape can provide public officials with more opportunities to deliberately slow down processing, or even to "misplace" an application, to increase the incentives for firms to pay bribes. For these reasons, regions with

[27] See chart accompanying "Doing Business 2013: Getting Better," *The Economist*, October 27 2012.

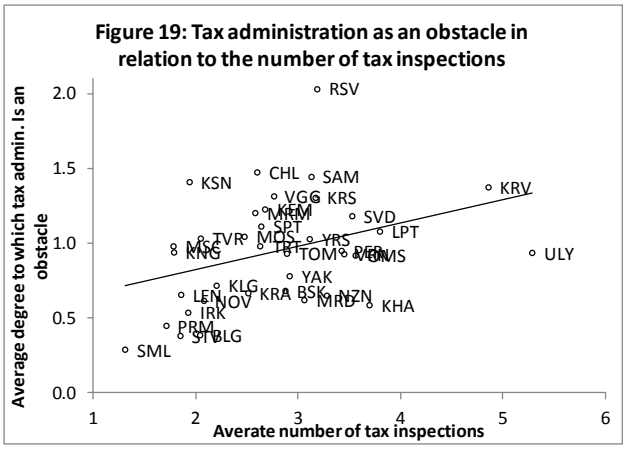
more burdensome regulation can be expected to exhibit a higher incidence of corruption. The BEEPS data confirms this proposition.

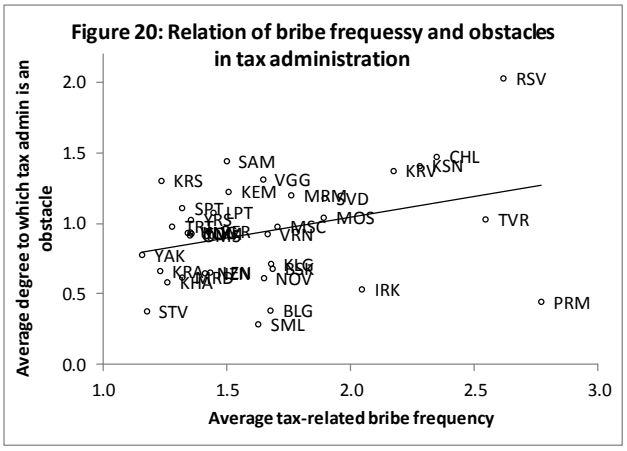
Figure 18 supports this view. It plots the regional-level means of the "bribe frequency" (on how often it is necessary to make unofficial payments "to get things done") on the X axis, and the regional means of the question on licensing and permits as an obstacle on the Y axis.

The need to pay bribes and the administrative procedures they are intended to circumvent both constitute significant obstacles from the standpoint of firms.




Figures 19 and 20 respectively show that regions where firms report tax administration as a more serious obstacle also tend to be regions where firms report a higher number of meetings with tax officials (Figure 19), and a greater need to pay bribes in connection with paying taxes (Figure 20). Moreover, firms reporting a higher "bribe tax" also tend to report a higher "time tax" (see Annex 3, Table B6, regression 6.4). The fact that bribery and red tape tend to be observed together does not necessarily mean that paying a bribe is never an effective strategy to "get things done" from the standpoint of an individual firm. It is consistent however with the view that an excessive regulatory burden is imposed in many cases as a deliberate strategy to extract rents from firms.



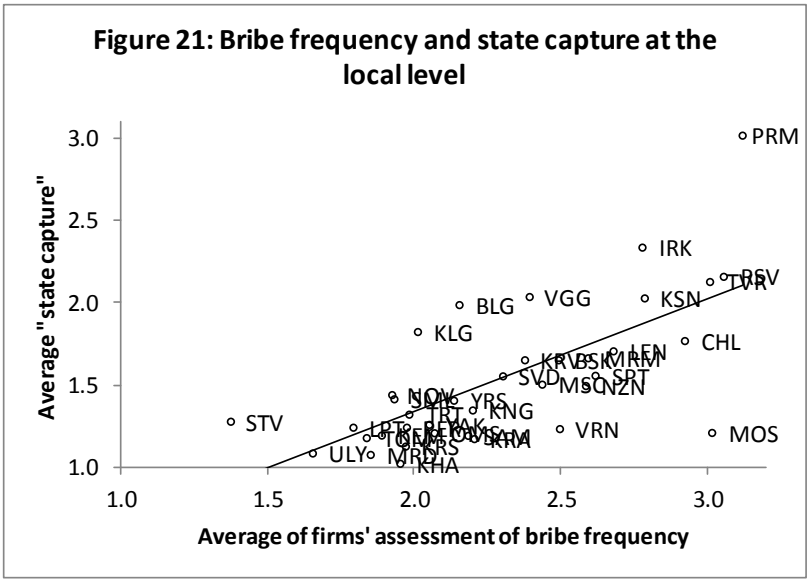

Firms that report interacting with officials in more of the six "sub-sectors" measured in the Graft Index (tax, utility applications, operating licensing, etc.) tend to report a higher "time tax," greater perceptions of bribe frequency, a higher "bribe tax," and more frequently cite licensing and permits as an obstacle to their operations (see Annex 3 regressions). Moreover, they also report paying bribes in a greater *proportion* of these interactions – as measured by the Graft Index – not merely in a larger absolute number of them. These results are consistent with the

common anti-corruption policy prescription of instituting reforms that limit the number of opportunities for officials to solicit bribes.

The first World Bank (2000) report based on BEEPS data, using the 1999 surveys, introduced a corruption typology that distinguished between "administrative corruption" and "state capture." In general, the two types were empirically correlated among countries in the ECA region: some countries such as Slovenia and Estonia ranked well on both, while others such as Azerbaijan and Ukraine ranked poorly on both. However, the positive relationship was sufficiently modest in strength that several countries ranked highly on one concept but were ranked low on the other. For example, Croatia ranked best on administrative corruption in the region, but ranked worse than the majority of countries on "state capture."

In the Russia regional BEEPS, the relationship between state capture and administrative corruption appears to be stronger. Figure 21 depicts "bribe frequency" (necessity of paying bribes "to get things done") on the X axis, with the "state capture" question pertaining to regional and local officials on the Y axis. (Results are very similar using either of the other two state capture questions.) There are very few outliers. Only Moscow stands out as a region ranking very well on one type (capture) and poorly on the other type (administrative corruption).

**Figure 21: Bribe frequency and state capture at the local level**




### *Why do firms differ within regions?*

As stated above, location matters more than firm-level characteristics for regulatory burden and corruption perceptions and experiences. However, it is worth noting briefly some of the significant firm-level factors identified in the regression analyses in Annex 3.[28]

Older firms, in particular those formed prior to the transition, are arguably more likely to have established connections with government officials, and to be treated more favorably in the formulation and implementation of regulatory policies. Age of firms turned out not to matter, however, for firms' perceptions and experiences of corruption and regulatory burden. The regressions reported in Annex 3 include, instead of a continuous measure of firm age, a dummy variable for firms established prior to the transition (only 5.2% of the sample). This proxy for established connections with government officials also proved insignificant in every test.

[28] All results reported below are significant at the .10 levels or better, and most are significant at the .05 level. These are all "partial" effects, meaning the estimated effect holding all other variables in the analysis constant.

Several studies have shown that membership in business associations can help Russian firms influence policies or contest predation by government officials, although sometimes by imposing costs on the rest of society (Pyle, 2011; Pyle and Solanko, forthcoming). The BEEPS questionnaire unfortunately does not ascertain membership in business associations, so it is an omitted variable in the context of the analyses reported in Annex 3.

Larger firms – as measured by number of employees (or revenues) – report a higher average "time tax," more tax meetings, longer waits for operating licenses, and greater perceptions of bribe frequency. However, they do not have a higher incidence of bribe paying as measured by the Graft Index; moreover, they do not perceive more state capture, nor are they more likely to report that corruption is a serious obstacle. This may be attributable to the lower "bribe tax" they report paying. Consistent with other studies, as summarized in Kaufmann et al. (2008), bribe paying in the BEEPS acts as a regressive tax, with smaller firms paying a larger share of firm revenues.

Exporting firms (9.6% of the sample) report both a higher incidence of bribe paying (as measured by the Graft Index), and heightened perceptions of corruption (as measured by the "bribe frequency" question). They are more likely than non-exporting firms to report that corruption (but not licensing and permits) is an obstacle to doing business.

Retail firms (11% of the sample) are more likely than other firms to cite licensing and permits as an obstacle, but paradoxically they report lower average waits for operating licenses. One possibility is that they pay bribes to shorten waiting times; however, they also report a smaller average "bribe tax."

Several studies have concluded based on evidence from household surveys, firm surveys, and lab experiments that women tend to be less corrupt than men, in terms of demanding or complying with demands for bribes (e.g. Rivas, 2012; Swamy et al. 2001). The top manager is female in 20% of the BEEPS sample. Controlling for other factors, female-managed firms pay lower bribes, as measured by the "bribe tax" and "kickback tax" paid to obtain government contracts. They are less likely to perceive state capture as a problem for their firm, and less likely to cite corruption more generally as an obstacle to firm operations. Female-managed firms report a "time tax" averaging 2 percentage points higher than other firms, however, despite a lower average wait (by about 10 days) for an operating license.

Firms with a higher share of foreign ownership report more tax meetings, but less state capture, and no difference from other firms in experience or perceptions of administrative corruption. The foreign ownership share averages only 2% in the sample. Among the 120 firms reporting some foreign ownership (about 3% of the sample), foreign ownership averages 68%.

Unsurprisingly, government-owned firms are less likely to cite corruption as an obstacle to their operations. More surprisingly, they do not differ significantly from other firms with respect to most indicators of corruption and regulatory burden. This may be due in part to lack of sufficient variation in the data. Government ownership averages only 0.5% in the sample. Only 38 firms (less than 1%) report some government ownership, and among those 38, government ownership averages 50%.

## IV. CONCLUSIONS

A broad range of evidence shows that overly burdensome regulation and corruption are significant impediments to firm entry, productivity and growth. Although in terms of per capita income, Russia is gradually converging toward the levels of OECD countries, growth rates fall short of those experienced by most other BRICs and large middle-income comparator countries. Moreover, growth has been driven primarily by revenues from commodity producers, and is disproportionately concentrated in resource-rich regions and a few large cities. In the longer run, sustained growth that is more balanced, both geographically and across a more diverse set of sectors, will likely require thoroughgoing improvement in Russia's regulatory climate for private investment and enterprise (World Economic Forum, 2011; Desai, 2008).

This report assesses trends over time in corruption and the regulatory burden in Russia, draws comparisons with the ECA region as a whole, and for the first time using BEEPS data is able to make comparisons across 37 Russian regions. Most of the available indicators show improvement over time, between the 2008 BEEPS and the 2011 surveys at the country level. For example, senior managers' time spent on dealing with regulation (the "time tax") declined from an average of about 22% in 2008 to 17% in 2011. In dealing with administrative requirements such as obtaining licenses or dealing with tax officials, fewer firms report that "gifts" or irregular payments were expected by officials: a Graft Index, reflecting the proportion of such interaction where a bribe was expected, improved from .18 in 2008 to .08 in the 2011 BEEPS. Far fewer firms in 2011 than in 2008 reported that licensing and permits, or courts, or tax administration or corruption were significant obstacles to their operations.

There are several important exceptions to this favorable trend, however. Firms report somewhat longer delays in obtaining licenses, permits and utility connections in 2011 than in 2008. Most notably, perceptions of the extent of "state capture" show worrisome deterioration in the 2011 survey, relative to results from 2005, when these questions were last included in the survey.

Cross-regional variation in corruption and regulatory burden in Russia is a potentially important factor in explaining differential performance in private sector development, income levels and growth rates. The 2011 Russia BEEPS for the first time is able to demonstrate substantial regional-level differences in regulatory burden and corruption. Location – i.e. knowing what region a firm is located in – turns out to be a much more powerful predictor of the "time tax," bribe expectations, etc. that firms face than knowing the firm's size, industry, major products, and age.

Regional variation captured by the BEEPS, and summarized by a set of indexes in Annex 1, Table 4, not only identifies regions (such as Rostov Oblast and Krasnodar Kray) where private sector development confronts the most serious challenges. It also identifies regions (such as Smolensk Oblast and the Republic of Mordovia) where problems are much less severe, that can potentially point the way for other regions to reduce corruption and lighten the burden of regulation on firms.

Few if any regions rank uniformly well or poorly across all BEEPS indicators, however. For example, St. Petersburg and Primorsky Kray rank very highly on the Graft Index, despite ranking poorly on the other indexes in Annex 1.

This report provides exploratory analyses of what policy differences or other regional characteristics may underlie these sizeable variations in corruption and regulatory burden across the 37 regions represented in the survey. Several policy messages receive at least some support from the data analysis. Transparency in regional government procurement systems is associated with a lower average "kickback tax" firms report paying to officials. The importance of transparency and information for improved public sector accountability is also demonstrated by the fact that perceptions of state capture and frequency of administrative bribery are lower in regions with higher newspaper circulation (controlling for regional income and other factors). However, freedom of information laws and decrees – using a classification developed by TI Russia – appear to be unrelated to the incidence of corruption and the administrative burden of regulation.

Less onerous regulatory requirements, as measured by one or more of the indicators in the Russia sub-national "Doing Business" study, are associated with a lower average "time tax," shorter wait times to obtain an operating license, fewer firms citing licensing and permits as an obstacle to their operations, and lowered bribe expectations (as measured by the Graft Index). In many other cases, however, Doing Business indicators prove to be unrelated to anticipated outcomes; e.g. more firms perceive electricity as an obstacle to their operations in regions where fewer procedures are required to obtain an electrical connection, as measured by DB. Reforms intended to improve rankings in the Doing Business study can lead to improved outcomes, particularly if they are not narrowly tailored merely to target the indicator, but represent real improvements in the business environment for all firms in a region. However, even in the top-ranked regions on the Doing Business indicators, there is wide variation in "time tax," waiting times, reports of Graft, and other indicators. Expectations of the likely impact of regulatory reforms captured by the Doing Business indicators should not be exaggerated.[29]

There is a plethora of data available on the Russian regions from government and other sources, and it is beyond the scope of this report to provide rigorous tests of all possible determinants of differences in the business climate across regions, including fiscal and political economy explanations[30]. This report nevertheless provides a description of the BEEPS indicators, illustrative examples of how the data can be used, and suggests areas where additional research is needed. In conjunction with the accompanying BEEPS-at-a-Glance report for Russia, it can facilitate independent interpretations, and complementary and more in-depth analyses, by researchers in government, civil society and academia.

One topic where additional research would be useful pertains to the validity of trends over times in the various BEEPS questions on potential obstacles to firms' operations. In Russia the number and severity of complaints in many regulatory and other areas increased between 2005 and 2008, but improved again in 2011-12, essentially tracking the business cycle. The actual dates of each survey interview is recorded, so surveys from Russia and other countries can be

[29] The President has set goals of improving Russia's global ranking on the overall Ease of Doing Business from 120th in 2011 to 50th in 2015 and 20th in 2018. See for example http://www.telegraph.co.uk/sponsored/russianow/business/9333604/vladimir-putin-russia-investment.html.

[30] For example, Timothy Frye and colleagues at the National Research University Higher School of Economics are assembling a detailed dataset of characteristics of the regional governors (Frye et al., 2011). When it is made public, that dataset can usefully add to the range of political economy explanations that are only cursorily treated here.

used to study the impact of current economic conditions on question responses at a more finely-grained level.

On corruption more specifically, the more objective and direct experiential questions in the BEEPS generally portray a more favorable trend than the more perceptions-based and indirect ("firms like this one") questions. A more in-depth analysis of particular sub-sector (e.g. tax administration) using information from other sources might shed light on the reasons for these discrepancies. Similarly, in-depth case studies on a few of the best (e.g. Smolensk) and worst (e.g. Rostov) performing regions could add to our understanding of why there are such large variations in business climate, and on the feasibility of using the top performers as models for reforms.

Further research can also explore more intensively the question of why the regulatory burden on firms and the corruption levels they face vary so much from one region to another. The fact that performance on these aspects of the investment climate differs so much even for geographically-adjacent regions suggests that much of the variation is likely not due to "deep" historical, cultural or climatic factors. This finding can be viewed optimistically, as implying that there is more scope for improvement through policy reforms, including imitation of better-performing nearby regions in some cases.

Perhaps most importantly, future research using the BEEPS and complementary datasets can explore the effects of regulatory burden and corruption on firm entry, revenue growth and productivity, at the firm and regional level. While cross-country studies and country-specific studies of other countries have established that there are important links, the particular forms of corruption and excessive regulation that act as binding constraints to development of private enterprise may differ somewhat in Russia from other countries, and even from region to region within Russia. Moreover, further research can investigate the extent to which distortions in various regulatory and administrative areas and transactions may be redundant, in their effects on firm entry and growth. Reforms in a limited number of areas may show disappointing results, if there are remaining distortions sufficient to deter entry or expansion. Rent-seekers may be able to substitute one regulatory barrier for another in blocking competitors.

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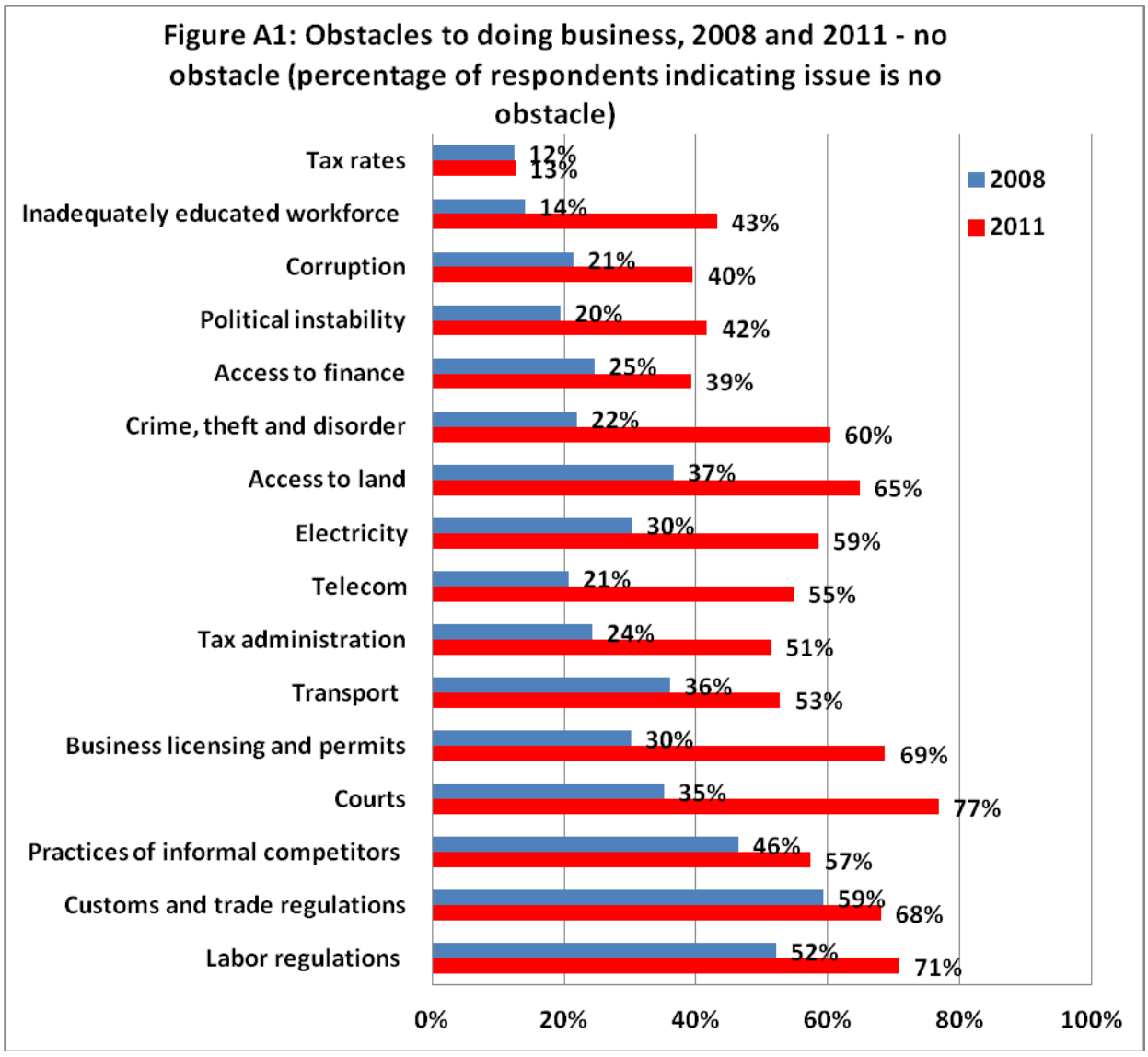
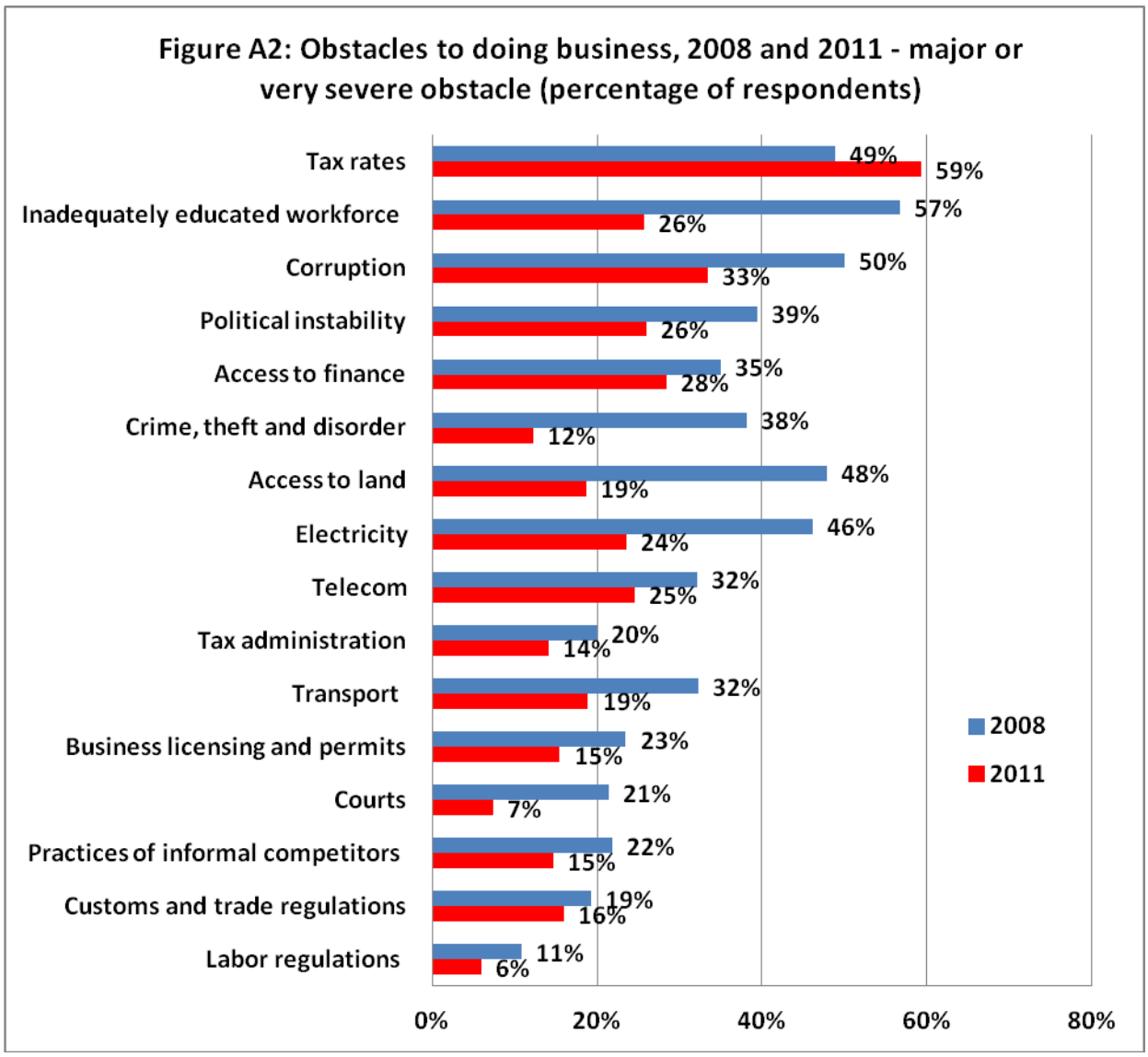
## ANNEXES

### Annex 1: Selected Descriptive Indicators




Note: All differences are statistically significant at P=0.10 or better, except “tax rates“.




Note: All differences are statistically significant at P=0.10 or better, except "telecommunications"[31], and "customs and trade regulations".

[31] Asked only of Service sector respondents in 2008

**Table A1: Selected regional BEEPS indicators and 2009 GRP per capita (regions are ranked by the BEEPS ECAq44c - Direct impact on business operation of private payments/gifts/other benefits to local/municipal officials)**

| | GRP 2009 (RRub) | j2_notime % Senior management's time | | j2 % Senior management's time spent on dealing with regulations | j2_time_no0 % Senior management's time - only firms with answers more than 'zero' | j3 Visited or inspected by tax officials over last yr? | | j4 Number of inspections by/required meetings with tax officials over last yr | j5 Informal gift/payment expected/ requested in meetings/tax inspections? | | c4 Number of days it took to obtain electrical connection | c13 Number of days it took to obtain water connection |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | No time | Some time | Mean | Mean | Yes | No | Mean | Yes | No | Mean | Mean |
| Khabarovsk Territory | 196,252.8 | 20% | 80% | 15.10 | 18.78 | 56% | 44% | 3.7 | 2% | 98% | 124.4 | 28.3 |
| Republic of Mordovia | 111,903.6 | 25% | 75% | 12.62 | 16.83 | 59% | 41% | 3.1 | 4% | 96% | 60.7 | 14.8 |
| Ulyanovsk Region | 117,244.6 | 15% | 85% | 12.79 | 15.09 | 56% | 44% | 5.3 | 3% | 97% | 57.6 | 26.6 |
| Kursk Region | 140,166.1 | 36% | 64% | 17.96 | 27.92 | 63% | 37% | 3.2 | 8% | 92% | 110.2 | 71.8 |
| Krasnoyarsk Territory | 258,834.6 | 21% | 79% | 18.40 | 23.21 | 43% | 57% | 2.5 | 4% | 96% | 30.1 | 30.0 |
| Tomsk Region | 232,901.1 | 15% | 85% | 16.08 | 18.83 | 49% | 51% | 2.9 | 1% | 99% | 43.4 | 9.2 |
| Samara Region | 182,611.5 | 24% | 76% | 13.47 | 17.84 | 54% | 46% | 3.1 | 5% | 95% | 336.5 | 143.8 |
| Kemerovo Region | 181,629.5 | 34% | 66% | 18.10 | 27.33 | 53% | 47% | 2.7 | 8% | 92% | 73.4 | 29.5 |
| Moscow City | 679,340.7 | 7% | 93% | 19.36 | 20.79 | 44% | 56% | 2.5 | 0% | 100% | 227.4 | 35.3 |
| Omsk Region | 167,000.7 | 10% | 90% | 21.28 | 23.57 | 56% | 44% | 3.6 | 5% | 95% | 161.6 | 93.9 |
| Voronezh Region | 133,509.7 | 16% | 84% | 16.63 | 19.90 | 50% | 50% | 3.4 | 16% | 84% | 34.5 | 4.4 |
| Lipetsk Region | 195,126.7 | 14% | 86% | 16.15 | 18.86 | 59% | 41% | 3.8 | 12% | 88% | 97.6 | 56.6 |
| Perm Territory | 201,324.3 | 3% | 97% | 23.39 | 24.18 | 25% | 75% | 3.4 | 1% | 99% | 34.6 | 39.0 |
| Republic of Sakha (Yakutia) | 347,195.6 | 10% | 90% | 19.01 | 21.06 | 30% | 70% | 2.9 | 2% | 98% | 88.0 | 46.1 |
| Stavropol Territory | 102,414.9 | 29% | 71% | 49.23 | 69.05 | 33% | 67% | 1.8 | 7% | 93% | 66.3 | 53.1 |
| Republic of Tatarstan | 234,324.4 | 10% | 90% | 16.03 | 17.78 | 61% | 39% | 2.6 | 2% | 98% | 117.8 | 7.0 |
| Kaliningrad Region | 181,161.2 | 31% | 69% | 12.50 | 18.15 | 50% | 50% | 1.8 | 6% | 94% | 125.5 | 6.7 |
| Yaroslavl Region | 162,643.2 | 2% | 98% | 10.45 | 10.65 | 34% | 66% | 3.1 | 0% | 100% | 196.2 | 17.3 |
| Smolensk Region | 129,102.3 | 52% | 48% | 8.19 | 17.14 | 39% | 61% | 1.3 | 0% | 100% | 8.1 | 1.8 |
| Novosibirsk Region | 160,290.1 | 20% | 80% | 13.37 | 16.76 | 74% | 26% | 2.1 | 0% | 100% | 54.4 | 12.5 |
| Nizhni Novgorod Region | 163,840.6 | 22% | 78% | 10.69 | 13.69 | 25% | 75% | 3.3 | 12% | 88% | 31.0 | |
| Moscow Region | 227,343.2 | 5% | 95% | 22.14 | 23.25 | 43% | 57% | 1.8 | 4% | 96% | 82.6 | 71.3 |
| Sverdlovsk Region | 187,480.9 | 23% | 77% | 19.66 | 25.67 | 60% | 40% | 3.5 | 1% | 99% | 57.2 | 36.5 |
| Leningrad Region | 260,685.4 | 2% | 98% | 21.89 | 22.34 | 68% | 32% | 2.6 | 1% | 99% | 75.8 | 123.1 |
| Republic of Bashkortostan | 158,932.3 | 24% | 76% | 15.12 | 19.95 | 47% | 53% | 2.9 | 8% | 92% | 64.2 | 64.7 |
| Kirov Region | 103,850.7 | 29% | 71% | 26.11 | 36.95 | 62% | 38% | 4.9 | 5% | 95% | 30.6 | 5.5 |
| Murmansk Region | 240,346.1 | 27% | 73% | 24.90 | 33.91 | 39% | 61% | 2.6 | 3% | 97% | 10.0 | 65.0 |
| Saint Petersburg | 320,916.4 | 5% | 95% | 16.38 | 17.31 | 44% | 56% | 1.9 | 2% | 98% | 298.2 | 314.7 |
| Chelyabinsk Region | 160,939.6 | 34% | 66% | 15.71 | 23.92 | 34% | 66% | 2.6 | 1% | 99% | 29.3 | 9.8 |
| Kaluga Region | 156,300.9 | 6% | 94% | 19.51 | 20.75 | 48% | 52% | 2.2 | 0% | 100% | 384.3 | 12.6 |
| Belgorod Region | 199,229.1 | 50% | 50% | 2.76 | 5.49 | 57% | 43% | 2.0 | 2% | 98% | 9.7 | 9.9 |
| Krasnodar Territory | 166,469.6 | 21% | 79% | 10.83 | 13.75 | 57% | 43% | 1.9 | 4% | 96% | 31.5 | 30.0 |
| Volgograd Region | 145,453.6 | 16% | 84% | 20.24 | 24.24 | 65% | 35% | 2.7 | 1% | 99% | 120.9 | 47.1 |
| Rostov Region | 131,312.2 | 12% | 88% | 16.67 | 18.94 | 40% | 60% | 3.2 | 3% | 97% | 178.0 | 56.0 |
| Tver Region | 144,993.3 | 23% | 77% | 21.48 | 27.94 | 57% | 43% | 2.1 | 1% | 99% | 164.6 | 12.3 |
| Irkutsk Region | 181,910.9 | 20% | 80% | 17.49 | 21.83 | 55% | 45% | 1.9 | 3% | 97% | 83.3 | 90.0 |
| Primorsky Territory | 185,239.4 | 91% | 9% | 0.98 | 10.88 | 43% | 57% | 1.7 | 3% | 97% | 730.0 | 1.0 |

**Table A1: Selected regional BEEPS indicators and 2009 GRP per capita (regions are ranked by the BEEPS ECAq44c – Direct impact on business operation of private payments/gifts/other benefits to local/municipal officials) (continued)**

| | g3 Number of days it took to obtain a construction-related permit | j11 Number of days it took to obtain import license | j14 Number of days it took to obtain operating license | j30f Corruption - obstacle to current operations | ECAq39 Frequency of informal payments/gifts to get things done | ECAq41a Frequency of unofficial payments/gifts to deal with customs/ imports | ECAq41b Frequency of unofficial payments/gifts to deal with courts | ECAq41c Frequency of unofficial payments/gifts to deal with taxes and tax collection | ECAq44c Private payments/gifts/ other benefits to local/regional officials -direct impact |
|---|---|---|---|---|---|---|---|---|---|
| | Mean | Mean | Mean | Mean | Mean | Mean | Mean | Mean | Mean |
| Khabarovsk Territory | 330.5 | 7.0 | 45.2 | 1.1 | 2.0 | 1.4 | 1.1 | 1.3 | 1.02 |
| Republic of Mordovia | 159.7 | 1.0 | 49.2 | 0.9 | 1.8 | 1.1 | 1.2 | 1.3 | 1.08 |
| Ulyanovsk Region | 129.6 | | 64.1 | 1.3 | 1.7 | 1.1 | 1.1 | 1.3 | 1.09 |
| Kursk Region | 163.9 | | 39.0 | 1.2 | 2.0 | 1.4 | 1.3 | 1.2 | 1.13 |
| Krasnoyarsk Territory | 43.0 | | 65.1 | 1.0 | 2.2 | 1.3 | 1.2 | 1.2 | 1.17 |
| Tomsk Region | 50.3 | | 39.6 | 1.0 | 1.8 | 1.1 | 1.2 | 1.4 | 1.18 |
| Samara Region | 167.0 | 30.0 | 31.8 | 1.7 | 2.2 | 1.3 | 1.4 | 1.5 | 1.19 |
| Kemerovo Region | 71.9 | 180.0 | 34.8 | 1.4 | 1.9 | 1.2 | 1.4 | 1.5 | 1.20 |
| Moscow City | 30.4 | 73.0 | 72.1 | 2.0 | 3.0 | 1.5 | 1.2 | 1.9 | 1.21 |
| Omsk Region | 137.3 | | 42.8 | 1.6 | 2.1 | 1.1 | 1.1 | 1.3 | 1.21 |
| Voronezh Region | 215.8 | 57.9 | 49.0 | 1.3 | 2.5 | 1.1 | 1.2 | 1.7 | 1.24 |
| Lipetsk Region | 68.6 | | 40.0 | 1.0 | 1.8 | 1.1 | 1.2 | 1.4 | 1.24 |
| Perm Territory | 222.4 | 60.0 | 82.3 | 1.2 | 2.0 | 1.2 | 1.3 | 1.4 | 1.24 |
| Republic of Sakha (Yakutia) | 78.1 | | 75.1 | 1.1 | 2.1 | 1.1 | 1.2 | 1.2 | 1.26 |
| Stavropol Territory | 58.3 | 30.0 | 22.1 | 1.2 | 1.4 | 1.0 | 1.1 | 1.2 | 1.28 |
| Republic of Tatarstan | 148.2 | | 72.2 | 1.2 | 2.0 | 1.1 | 1.1 | 1.3 | 1.32 |
| Kaliningrad Region | 277.5 | 58.4 | 45.9 | 1.6 | 2.2 | 1.7 | 1.3 | 1.4 | 1.35 |
| Yaroslavl Region | 515.3 | | 65.9 | 1.6 | 2.1 | 1.5 | 1.3 | 1.4 | 1.41 |
| Smolensk Region | 30.0 | 3.0 | 27.9 | 0.2 | 1.9 | 1.4 | 1.3 | 1.6 | 1.42 |
| Novosibirsk Region | 63.1 | 23.6 | 37.8 | 1.4 | 1.9 | 1.5 | 1.6 | 1.6 | 1.44 |
| Nizhni Novgorod Region | 240.0 | 26.2 | 42.8 | 1.1 | 2.6 | 1.2 | 1.3 | 1.4 | 1.50 |
| Moscow Region | 143.5 | 30.0 | 66.7 | 1.5 | 2.4 | 1.4 | 1.4 | 1.7 | 1.51 |
| Sverdlovsk Region | 83.6 | | 48.9 | 1.5 | 2.3 | 1.6 | 1.7 | 1.9 | 1.56 |
| Leningrad Region | 176.6 | 80.7 | 60.7 | 2.2 | 2.6 | 1.5 | 1.3 | 1.3 | 1.56 |
| Republic of Bashkortostan | 71.5 | 60.0 | 64.8 | 1.2 | 2.5 | 1.4 | 1.6 | 1.7 | 1.65 |
| Kirov Region | 102.5 | | 8.0 | 0.8 | 2.4 | 2.0 | 1.8 | 2.2 | 1.65 |
| Murmansk Region | 14.5 | 9.0 | 29.4 | 1.1 | 2.6 | 1.4 | 1.6 | 1.8 | 1.67 |
| Saint Petersburg | 84.8 | | 51.4 | 2.3 | 2.7 | 1.8 | 1.5 | 1.4 | 1.71 |
| Chelyabinsk Region | 104.8 | | 41.9 | 1.4 | 2.9 | 1.9 | 1.7 | 2.3 | 1.77 |
| Kaluga Region | 74.9 | 180.0 | 41.7 | 1.4 | 2.0 | 1.5 | 1.5 | 1.7 | 1.83 |
| Belgorod Region | 50.2 | 12.3 | 44.4 | 1.0 | 2.2 | 1.6 | 1.6 | 1.7 | 1.99 |
| Krasnodar Territory | 353.8 | 17.8 | 42.1 | 1.6 | 2.8 | 1.8 | 2.0 | 2.3 | 2.03 |
| Volgograd Region | 114.0 | | 40.6 | 1.6 | 2.4 | 1.4 | 1.7 | 1.6 | 2.04 |
| Rostov Region | 82.5 | 7.8 | 60.0 | 2.0 | 3.1 | 2.4 | 2.4 | 2.6 | 2.16 |
| Tver Region | 369.5 | 5.0 | 32.4 | 1.6 | 3.0 | 2.6 | 2.5 | 2.6 | 2.17 |
| Irkutsk Region | 170.0 | | 57.9 | 0.8 | 2.8 | 2.1 | 2.0 | 2.0 | 2.34 |
| Primorsky Territory | 350.0 | 14.0 | 50.1 | 1.2 | 3.1 | 2.8 | 2.7 | 2.8 | 3.02 |

## Annex 2: Composite Indexes

### Methodology

1.1. **Administrative Obstacles Index (AOI7)** is a composite measure of selected governance obstacles faced by firms in their interactions with the state. The index utilized responses to the following seven BEEPS questions. The BEEPS questionnaire included the following question:

*To what degree is XYZ an obstacle to the current operations of this establishment?*

This question is being asked regarding various obstacles to firms operations and growth. Response options included: no obstacle (0), minor obstacle (1), moderate obstacle (2), major obstacle (3), and very severe obstacle (4). The index includes the following aspects:

*Customs and trade regulations (d30b),*
*Access to land (g30a),*
*Courts (h30),*
*Tax administration (j30b),*
*Business licensing and permits (j30c),*
*Corruption (j30f), and*
*Labor regulations (l30a).*

The index is constructed in two steps.

1. For each of seven questions above an average regional response was calculated as a weighted mean of firms' responses (an average of 0, 1, 2, 3, and 4, i.e. numeric equivalents of the response options for specific questions).
2. An average of these regional means for all seven questions was estimated for each region.

The latter average is called the Administrative Obstacle Index (AOI7). The index can take values from 0 – no burden at all (all respondents experienced no obstacle with all aspects of business-government interactions included in the index), to 4 - all respondents reported very severe obstacle in every aspect of business-government interactions.

Table 1 below shows that all but one correlation (tax administration and access to land) between index components are statistically significant at least at 5% level, and all correlation coefficients are positive.

1.2. A variation of the AOI7 index is the AOI6 – a narrowed-down version of the Administrative Obstacles Index that does not include the question on corruption as an obstacle to business operations, i.e. is based on six components.

**Table 1: Correlation among IAB components**

| | | d30b | g30a | h30 | j30b | j30c | j30f | l30a |
|---|---|---|---|---|---|---|---|---|
| **d30b** | Pearson Correlation | 1 | .512** | .513** | .432** | .516** | .639** | .428** |
| | Sig. (2-tailed) | | .001 | .001 | .008 | .001 | .000 | .008 |
| **g30a** | Pearson Correlation | .512** | 1 | .508** | .240 | .705** | .537** | .557** |
| | Sig. (2-tailed) | .001 | | .001 | .152 | .000 | .001 | .000 |
| **h30** | Pearson Correlation | .513** | .508** | 1 | .717** | .751** | .588** | .734** |
| | Sig. (2-tailed) | .001 | .001 | | .000 | .000 | .000 | .000 |
| **j30b** | Pearson Correlation | .432** | .240 | .717** | 1 | .459** | .481** | .646** |
| | Sig. (2-tailed) | .008 | .152 | .000 | | .004 | .003 | .000 |
| **j30c** | Pearson Correlation | .516** | .705** | .751** | .459** | 1 | .604** | .568** |
| | Sig. (2-tailed) | .001 | .000 | .000 | .004 | | .000 | .000 |
| **j30f** | Pearson Correlation | .639** | .537** | .588** | .481** | .604** | 1 | .465** |
| | Sig. (2-tailed) | .000 | .001 | .000 | .003 | .000 | | .004 |
| **l30a** | Pearson Correlation | .428** | .557** | .734** | .646** | .568** | .465** | 1 |
| | Sig. (2-tailed) | .008 | .000 | .000 | .000 | .000 | .004 | |

2. **Administrative Corruption Index (ACI)** is a composite measure of administrative corruption. The index utilized responses to the following four BEEPS questions.

*Thinking about officials, would you say the following statement is always, usually, frequently, sometimes, seldom, or never true? (ECAq39)*

> *It is common for firms in my line of business to have pay some irregular "additional payments or gifts" to get things done with regard to customs, taxes, licenses, regulations, services, etc.*

*Thinking now of unofficial payments/gifts that establishments like this one would make in a given year, please tell how often they would make payments/gifts for the following purposes:*

> *To deal with customs/imports (ECAq41a)*
> *To deal with courts (ECAq41b)*
> *To deal with taxes and tax collection (ECAq41c)*

Response options were the same as for the previous question: always (6), usually (5), frequently (4), sometimes (3), seldom (2), or never (1).

The index is constructed in three steps.

1. For each of four questions above an average regional response was calculated as a weighted mean of firms' responses (an average of 1, 2, 3, 4, 5, and 6, i.e. numeric equivalents of the response options for specific questions).

2. An average of these regional means for the latter three questions on customs, courts and tax was estimated for each region.
3. An average of the mean estimated in the step two and the first question dealing with overall frequency of administrative corruption was calculated. In other words, the first question has a weight of .5 and the latter three questions are weighted at .17 each.

The latter average is called the Administrative Corruption Index (ACI). The index can take values from 1 – additional payments/gifts have never been requested to 6 - all respondents have had always make additional payments.

Table 2 below shows that all components are significantly correlated at least at 5% level, and all correlation coefficients are positive. This table also shows correlation of the components two alternative versions of the ACI – ACI3, which includes only the last three questions, and ACI4, that is calculated as a simple average of regional means of each of four questions. These versions are highly correlated as expected.

**Table 2: Correlation among ACI components and different versions of the ACI**

| | | ECAq39 | ECAq41a | ECAq41b | ECAq41c | ACI | ACI4 | ACI3 |
|---|---|---|---|---|---|---|---|---|
| **ECAq39** | Pearson Correlation | 1 | .769** | .721** | .772** | .947** | .876** | .779** |
| | Sig. (2-tailed) | | .000 | .000 | .000 | .000 | .000 | .000 |
| **ECAq41a** | Pearson Correlation | .769** | 1 | .930** | .884** | .917** | .957** | .968** |
| | Sig. (2-tailed) | .000 | | .000 | .000 | .000 | .000 | .000 |
| **ECAq41b** | Pearson Correlation | .721** | .930** | 1 | .917** | .896** | .952** | .978** |
| | Sig. (2-tailed) | .000 | .000 | | .000 | .000 | .000 | .000 |
| **ECAq41c** | Pearson Correlation | .772** | .884** | .917** | 1 | .916** | .955** | .963** |
| | Sig. (2-tailed) | .000 | .000 | .000 | | .000 | .000 | .000 |
| **ACI** | Pearson Correlation | .947** | .917** | .896** | .916** | 1 | .984** | .939** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | | .000 | .000 |
| **ACI4** | Pearson Correlation | .876** | .957** | .952** | .955** | .984** | 1 | .985** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | | .000 |
| **ACI3** | Pearson Correlation | .779** | .968** | .978** | .963** | .939** | .985** | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | .000 | .000 | |

3. **State Capture Index (SCI)** is a composite measure of state capture. The index utilized responses to the following three BEEPS questions.

*It is often said that firms make unofficial payments/gifts, private payments or other benefits to public officials to gain advantages in the drafting laws, decrees, regulations, and other binding government decisions. To what extent have the following practices had direct impact on this establishment?*

*Private payments/gifts or other benefits to Parliamentarians to affect their votes*
*Private payments/gifts or other benefits to Government officials to the content of government decrees*
*Private payments/gifts or other benefits to local or regional government officials to affect their votes or content of government decrees*

Response options were: decisive impact (5), major impact (4), moderate impact (3), minor impact (2), or no impact (1).

The index is constructed in two steps.

1. For each of three questions above an average regional response was calculated as a weighted mean of firms' responses (an average of 1, 2, 3, 4 and 5, i.e. numeric equivalents of the response options for specific questions).
2. An average of these regional means for all seven questions was estimated for each region.

The latter average is called the State Capture Index (SCI). The index can take values from 1 – no impact at all to 5 – decisive impact.

Components of the SCI are correlated at 1% level. Coefficients of correlation are over 0.94.

Table 3 shows correlations between the indexes described above, the Graft Index and the overall measure of administrative corruption (ECAq39). This table shows that while ACI3 is not significantly correlated with AOI indexes, ACI and ACI4 are correlated with both of them at least at 5% level and that, in necessary, ECAq39 can be used as a substitute for ACI index as it is highly correlated with its components, full index and is better correlated with other composite indexes than the ACI.

**Table 3: Correlations among composite indexes**

| | | ACI3 | ACI | ACI4 | AOI6 | AOI7 | GI6 | SCI | ECAq39 |
|---|---|---|---|---|---|---|---|---|---|
| **ACI3** | Pearson Correlation | 1 | .939** | .985** | .294 | .281 | -.119 | .883** | .779** |
| | Sig. (2-tailed) | | .000 | .000 | .078 | .092 | .483 | .000 | .000 |
| **ACI** | Pearson Correlation | .939** | 1 | .984** | .398* | .399* | -.051 | .816** | .947** |
| | Sig. (2-tailed) | .000 | | .000 | .015 | .014 | .767 | .000 | .000 |
| **ACI4** | Pearson Correlation | .985** | .984** | 1 | .351* | .345* | -.086 | .863** | .876** |
| | Sig. (2-tailed) | .000 | .000 | | .033 | .037 | .611 | .000 | .000 |
| **AOI6** | Pearson Correlation | .294 | .398* | .351* | 1 | .989** | .073 | .141 | .451** |
| | Sig. (2-tailed) | .078 | .015 | .033 | | .000 | .669 | .405 | .005 |
| **AOI7** | Pearson Correlation | .281 | .399* | .345* | .989** | 1 | .047 | .121 | .464** |
| | Sig. (2-tailed) | .092 | .014 | .037 | .000 | | .784 | .477 | .004 |
| **GI6** | Pearson Correlation | -.119 | -.051 | -.086 | .073 | .047 | 1 | -.072 | .019 |
| | Sig. (2-tailed) | .483 | .767 | .611 | .669 | .784 | | .673 | .913 |
| **SCI** | Pearson Correlation | .883** | .816** | .863** | .141 | .121 | -.072 | 1 | .665** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .405 | .477 | .673 | | .000 |
| **ECAq39** | Pearson Correlation | .779** | .947** | .876** | .451** | .464** | .019 | .665** | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | .005 | .004 | .913 | .000 | |

For the purposes of regional ranking the following indexes will be used: AOI7, ACI, SCI, and GI6, as they measure four different and not necessarily correlated aspects of administrative burden – obstacles to doing business, administrative corruption, state capture and propensity to graft in government-private sector interactions.

Table 4 below shows regional rankings on each of these four indicators. Regions are arranged in order of AOI6 – with Smolensk Oblast being the best and Rostov Oblast the worst. Primorskiy Kray was dead last on ACI and GCI, but fifth best on GI6, etc. In total 21 out of 37 regions appeared among top performers at least once, of which one appeared three times, and five two times. Nineteen regions were at the bottom of the list for at least one of four indicators, of which one regions was among the bottom seven four times, one three times, and four two times.

**Table 4: Regional ranking on four composite indexes**

| Region name | Region code | AOI7 | ACI | GI6 | SCI |
|---|---|---|---|---|---|
| Smolensk Oblast | SML | 1 | 13 | 1 | 20 |
| Belgorod Oblast | BLG | 2 | 20 | 20 | 32 |
| Stavropol Kray | STV | 3 | 1 | 17 | 15 |
| Irkutsk Oblast | IRK | 4 | 33 | 28 | 36 |
| Republic of Mordovia | MRD | 5 | 4 | 10 | 4 |
| Republic of Bashkortostan | BSK | 6 | 27 | 36 | 26 |
| Tomsk Oblast | TOM | 7 | 5 | 21 | 6 |
| Nizhny Novgorod Oblast | NZN | 8 | 22 | 34 | 21 |
| Novosibirsk Oblast | NOV | 9 | 15 | 2 | 22 |
| Lipetsk Oblast | LPT | 10 | 3 | 26 | 16 |
| Omsk Oblast | OMS | 11 | 9 | 29 | 5 |
| Kirov Oblast | KRV | 12 | 30 | 25 | 29 |
| Murmansk Oblast | MRM | 13 | 28 | 15 | 27 |
| Republic of Tatarstan | TRT | 14 | 6 | 8 | 17 |
| Ulyanovsk Oblast | ULY | 15 | 2 | 13 | 3 |
| Kemerovo Oblast | KEM | 16 | 10 | 23 | 8 |
| Krasnoyarsk Kray | KRA | 17 | 14 | 24 | 13 |
| Kursk Oblast | KRS | 18 | 11 | 27 | 2 |
| Chelyabinsk Oblast | CHL | 19 | 34 | 7 | 28 |
| Khabarovsk Kray | KHA | 20 | 8 | 9 | 1 |
| Voronezh Oblast | VRN | 21 | 21 | 36 | 7 |
| Perm Kray | PER | 22 | 12 | 33 | 11 |
| Primorsky Kray | PRM | 23 | 37 | 5 | 37 |
| Tver Oblast | TVR | 24 | 36 | 19 | 33 |
| Kaluga Oblast | KLG | 25 | 17 | 12 | 31 |
| Sverdlovsk Oblast | SVD | 26 | 26 | 22 | 24 |
| Moscow Oblast | MSC | 27 | 23 | 16 | 25 |
| Yaroslavl Oblast | YRS | 28 | 16 | 32 | 19 |
| Moscow City | MOS | 29 | 31 | 4 | 10 |
| Republic of Sakha (Yakutia) | YAK | 30 | 7 | 30 | 9 |
| Volgograd Oblast | VGG | 31 | 25 | 11 | 30 |
| Kaliningrad Oblast | KNG | 32 | 19 | 13 | 14 |
| Saint Petersburg | LEN | 33 | 29 | 3 | 18 |
| Krasnodar Kray | KSN | 34 | 32 | 35 | 34 |
| Samara Oblast | SAM | 35 | 18 | 31 | 12 |
| Leningrad Oblast | SPT | 36 | 24 | 6 | 23 |
| Rostov Oblast | RSV | 37 | 35 | 17 | 35 |

Table 5 shows a summary of the above table and the diversity of Russian regions – it presents only regions in the top and bottom quintiles. There is no single region among the 37 surveyed that would be in the top quintile for all four indicators. Only one – Republic of Mordovia – was a top performer on three out of four indicators, and only one region has consistently scored poorly – Krasnodar Kray. Rostov Oblast appeared among the poor performers on three indicators.

**Table 5: Regions in the top and bottom quintiles**

| Top performers | AOI7 | ACI | GI6 | SCI |
|---|---|---|---|---|
| 1 | Smolensk Oblast | Stavropol Kray | Smolensk Oblast | Khabarovsk Kray |
| 2 | Belgorod Oblast | Ulyanovsk Oblast | Novosibirsk Oblast | Kursk Oblast |
| 3 | Stavropol Kray | Lipetsk Oblast | Saint Petersburg | Ulyanovsk Oblast |
| 4 | Irkutsk Oblast | Republic of Mordovia | Moscow City | Republic of Mordovia |
| 5 | Republic of Mordovia | Tomsk Oblast | Primorsky Kray | Omsk Oblast |
| 6 | Rep. Bashkortostan | Republic of Tatarstan | Leningrad Oblast | Tomsk Oblast |
| 7 | Tomsk Oblast | Rep. Sakha (Yakutia) | Chelyabinsk Oblast | Voronezh Oblast |
| | | | | |
| Poor performers | | | | |
| 31 | Volgograd Oblast | Moscow City | Samara Oblast | Kaluga Oblast |
| 32 | Kaliningrad Oblast | Krasnodar Kray | Yaroslavl Oblast | Belgorod Oblast |
| 33 | Saint Petersburg | Irkutsk Oblast | Perm Kray | Tver Oblast |
| 34 | Krasnodar Kray | Chelyabinsk Oblast | N. Novgorod Oblast | Krasnodar Kray |
| 35 | Samara Oblast | Rostov Oblast | Krasnodar Kray | Rostov Oblast |
| 36 | Leningrad Oblast | Tver Oblast | Rep. Bashkortostan | Irkutsk Oblast |
| 37 | Rostov Oblast | Primorsky Kray | Voronezh Oblast | Primorsky Kray |

## Annex 3: Regression Results

Table B1

"time tax" regressions (firm level)

| Equation | 1.1 | 1.2 | 1.3 | 1.4 | 1.5 | 1.6 |
|---|---|---|---|---|---|---|
| **Added regressors** | [base] | Doing Business index | Tax meetings/visits | Operating license wait | No. of "gift" chances | Graft index |
| *Firm-level regressors* | | | | | | |
| Established 1990 or before | 0.19 | -1.110 | 0.165 | 4.746 | 0.470 | 1.974 |
| | (0.09) | (-0.58) | (0.08) | (1.23) | (0.24) | (0.99) |
| Retail firm | 1.796 | 2.339 | 1.668 | 3.197 | 0.966 | -0.084 |
| | (1.24) | (1.33) | (1.10) | (1.37) | (0.64) | (-0.05) |
| Female manager | 2.241** | 2.391* | 2.184* | 6.937** | 2.305** | 4.624*** |
| | (2.07) | (1.74) | (1.98) | (2.33) | (2.13) | (3.64) |
| Exporter | -1.476 | -1.630 | -1.159 | -1.603 | -1.413 | -2.420** |
| | (-1.56) | (-1.50) | (-1.12) | (-0.64) | (-1.48) | (-2.14) |
| No. of employees (log) | 0.488* | 0.551* | 0.383 | -0.267 | -0.053 | 0.096 |
| | (1.83) | (1.69) | (1.30) | (-0.37) | (-0.18) | (0.26) |
| % foreign owned | 0.019 | -0.014 | 0.006 | -0.016 | 0.019 | 0.006 |
| | (0.70) | (-0.47) | (0.20) | (-0.27) | (0.64) | (0.15) |
| % government owned | 0.005 | 0.018 | 0.014 | 0.042 | 0.009 | -0.0003 |
| | (0.08) | (0.27) | (0.22) | (0.83) | (0.14) | (-0.01) |
| No. of tax meetings | | | 0.539** | | | |
| | | | (2.33) | | | |
| Wait time for operating license (days) | | | | 0.039*** | | |
| | | | | (2.91) | | |
| No. of "gift" opportunities (interactions with officials) | | | | | 2.263*** | 2.052*** |
| | | | | | (0.543) | (3.55) |
| Graft index | | | | | | 3.239 |
| | | | | | | (1.38) |
| *Region-level regressors* | | | | | | |
| per capita GRP (log) | -9.428* | -11.792 | -9.321* | 1.279 | -9.433* | -8.768 |
| | (-1.72) | (-1.68) | (-1.68) | (0.28) | (-1.73) | (-1.62) |
| population (log) | 3.985** | 4.978** | 4.050** | 1.546* | 4.209** | 4.674** |
| | (2.25) | (2.48) | (2.26) | (0.77) | (2.35) | (2.46) |
| Extractive industries as share of GRP | 6.322 | 8.928 | 6.494 | -3.834 | 5.564 | 1.152 |
| | (1.13) | (1.35) | (1.15) | (-0.48) | (1.01) | (0.21) |
| Distance from Moscow (ln of km) | -0.222 | -0.607 | -0.178 | -0.010 | -0.181 | -0.051 |
| | (-0.45) | (-0.82) | (-0.36) | (-0.02) | (-0.36) | (-0.10) |
| Latitude | 0.456 | 0.392 | 0.438 | 0.089 | 0.469 | 0.600 |
| | (1.25) | (0.94) | (1.19) | (0.25) | (1.29) | (1.57) |
| Doing Business index | | 0.512 | | | | |
| | | (0.24) | | | | |
| No. of obs. (firms) | 3693 | 2781 | 3544 | 787 | 3693 | 2287 |
| F statistic | 2.79 | 3.20 | 2.28 | 3.98 | 3.90 | 3.36 |
| p value of F test | .009 | .006 | .025 | .0005 | .0006 | .0017 |
| $R^2$ | .02 | .03 | .03 | .03 | .03 | .03 |

Dependent variable is share of senior managers' time required to deal with regulations and reporting requirements. T-statistics, reported in parentheses below point estimates, are based on standard errors adjusted for non-independence of errors within regional clusters of observations, with *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table B2

Regulatory burden regressions (firm level)

| Equation | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 |
|---|---|---|---|---|---|
| **Dependent variable** | Tax meetings | | Days to obtain operating license | | |
| *Firm-level regressors* | | | | | |
| Established 1990 or before | 0.311 | 0.395 | -8.238 | -20.560 | -21.091 |
| | (0.91) | (0.91) | (-0.68) | (-1.27) | (0.24) |
| Retail firm | -0.006 | 0.029 | -6.910* | -6.891* | -6.998* |
| | (-0.05) | (0.18) | (-1.80) | (-1.94) | (-1.83) |
| Female manager | -0.088 | -0.097 | -10.386*** | -11.383** | -10.970** |
| | (-0.63) | (-0.68) | (-3.05) | (-2.46) | (-2.40) |
| Exporter | 0.328 | 0.161 | 21.051 | 24.977 | 25.665 |
| | (1.26) | (0.53) | (1.61) | (1.52) | (1.54) |
| No. of employees (log) | 0.175*** | 0.031 | 6.741** | 8.702*** | 8.318** |
| | (3.85) | (0.32) | (2.57) | (2.73) | (2.54) |
| % foreign owned | 0.019* | 0.025* | 0.282 | 0.332 | 0.332 |
| | (1.83) | (1.88) | (1.61) | (1.49) | (1.53) |
| % government owned | -0.005 | -0.002 | -0.200 | -0.356** | -0.344** |
| | (-0.60) | (-0.18) | (-1.07) | (-2.17) | (-2.02) |
| Sales revenue (log) | | 0.195** | | | |
| | | (2.48) | | | |
| *Region-level regressors* | | | | | |
| per capita GRP (log) | -0.622 | -0.553 | 10.232* | 4.731 | 5.768 |
| | (-1.36) | (-0.98) | (1.75) | (0.51) | (0.82) |
| population (log) | -0.003 | -0.047 | 6.014 | 4.401 | 4.369 |
| | (-0.02) | (-0.25) | (1.62) | (0.98) | (0.90) |
| Extractive industries as share of | -0.253 | -0.553 | 17.488 | 29.702** | 26.004*** |
| GRP | (-0.58) | (-0.98) | (1.53) | (2.31) | (3.17) |
| Distance from Moscow (ln of | 0.017 | 0.020 | -0.876 | -1.413 | -1.329 |
| km) | (0.31) | (0.30) | (-0.82) | (-1.08) | (-0.93) |
| Latitude | 0.032 | 0.050 | 0.083 | -1.039 | -0.464 |
| | (1.10) | (1.28) | (0.13) | (-1.19) | (-0.67) |
| Doing Business starting a | | | | -12.216** | |
| business index | | | | (-2.07) | |
| Doing Business days to start a | | | | | 1.559** |
| business | | | | | (2.54) |
| No. of obs. (firms) | 3932 | 2847 | 864 | 631 | 631 |
| F statistic | 3.42 | 3.39 | 13.12 | 44.67 | 42.92 |
| p value of F test | .002 | .002 | <.0001 | <.0001 | <.0001 |
| $R^2$ | .02 | .03 | .06 | .08 | .08 |

Dependent variable is number of tax meetings or visits reported by firm in equations 2.1 and 2.2, and number of days required to obtain an operating license reported by firms in 2.3-2.5. T-statistics, reported in parentheses below point estimates, are based on standard errors adjusted for non-independence of errors within regional

clusters of observations, with *** p<0.01, ** p<0.05, * p<0.1. Intercept is included but not shown for space reasons.

Table B3
Licensing and permits as an obstacle regressions (firm level)

| Equation | 3.1 | 3.2 | 3.3 | 3.4 | 3.5 | 3.6 |
|---|---|---|---|---|---|---|
| **Added regressors** | [base] | Doing Business index | Days to obt. oper. license | Operating license wait | DB and BEEPS wait times | No. of "gift" chances |
| *Firm-level regressors* | | | | | | |
| Established 1990 or before | -0.038 | -0.020 | -0.024 | -0.059 | 0.056 | -0.005 |
| | (-0.38) | (-0.17) | (-0.20) | (-0.26) | (0.23) | (-0.05) |
| Retail firm | 0.246*** | 0.252** | 0.256** | 0.211 | 0.359* | 0.160* |
| | (2.76) | (2.23) | (2.25) | (1.29) | (1.81) | (1.82) |
| Female manager | -0.064 | -0.142** | -0.145** | -0.153 | -0.370** | -0.052 |
| | (-1.30) | (-2.59) | (-2.64) | (-1.11) | (-2.26) | (-1.13) |
| Exporter | 0.120 | 0.1220 | 0.121 | 0.162 | 0.070 | 0.125 |
| | (1.34) | (1.12) | (1.11) | (0.73) | (0.29) | (1.45) |
| No. of employees (log) | 0.098*** | 0.105*** | 0.104*** | -0.009 | -0.033*** | 0.037 |
| | (4.79) | (4.35) | (4.34) | (-0.20) | (-0.66) | (1.50) |
| % foreign owned | -0.0003 | -0.002 | -0.002 | -0.001 | -0.004 | -0.0002 |
| | (-0.17) | (-1.49) | (-1.49) | (-0.21) | (-0.94) | (-0.14) |
| % government owned | 0.0004 | 0.001 | 0.002 | 0.010** | 0.013*** | 0.001 |
| | (0.08) | (0.27) | (0.32) | (2.47) | (3.03) | (0.26) |
| Wait time for operating license (days) | | | | 0.005*** | 0.005*** | |
| | | | | (3.45) | (2.94) | |
| No. of "gift" opportunities (interactions with officials) | | | | | | 0.264*** |
| | | | | | | (6.71) |
| *Region-level regressors* | | | | | | |
| per capita GRP (log) | 0.386* | 0.365 | 0.408 | 0.568*** | 0.820*** | 0.380* |
| | (1.79) | (1.38) | (1.64) | (2.88) | (3.45) | (1.82) |
| population (log) | 0.033 | 0.040 | 0.059 | -0.097 | -0.020 | 0.050 |
| | (0.32) | (0.26) | (0.40) | (-1.00) | (-0.17) | (0.48) |
| Extractive industries as share of GRP | -0.496 | -0.701* | -0.654 | -0.574 | -0.794* | -0.566 |
| | (-1.30) | (-1.85) | (-1.60) | (-1.57) | (-1.91) | (-1.63) |
| Distance from Moscow (ln of km) | 0.064** | 0.079** | 0.074** | 0.041 | 0.070** | 0.065** |
| | (2.50) | (2.19) | (2.12) | (1.27) | (1.65) | (2.58) |
| Latitude | 0.006 | 0.012 | 0.014 | -0.005 | -0.003 | 0.008 |
| | (0.53) | (0.94) | (1.15) | (-0.34) | (-0.15) | (0.67) |
| Doing Business index | | 0.045 | | | | |
| | | (0.45) | | | | |
| Doing Business days to obtain operating license | | | -0.007 | | -0.037** | |
| | | | (-0.58) | | (-2.33) | |
| No. of obs. (firms) | 3735 | 2770 | 2770 | 859 | 627 | 3735 |
| F statistic | 5.38 | 9.56 | 10.53 | 5.12 | 44.64 | 17.83 |
| p value of F test | <.0001 | <.0001 | <.0001 | <.0001 | <.0001 | <.0001 |
| $R^2$ | .03 | .03 | .03 | .07 | .10 | .07 |

Dependent variable is degree to which licensing and permits are considered to be an obstacle to firm operations. T-statistics, reported in parentheses below point estimates, are based on standard errors adjusted for non-independence of errors within regional clusters of observations, with *** p<0.01, ** p<0.05, * p<0.1.

Table B4

Corruption as an obstacle regressions (firm level)

| Equation | 4.1 | 4.2 | 4.3 | 4.4 |
|---|---|---|---|---|
| **Added regressors** | [base] | State capture, bribe frequency | State capture, graft index | Bribe tax |
| *Firm-level regressors* | | | | |
| Established 1990 or before | 0.085 | 0.042 | 0.086 | 0.225 |
| | (0.71) | (0.45) | (0.68) | (0.89) |
| Retail firm | -0.216** | -0.140** | -0.160* | 0.036 |
| | (-2.59) | (-1.72) | (-1.81) | (0.17) |
| Female manager | -0.200*** | -0.095** | -0.042 | -0.239* |
| | (-3.06) | (-1.57) | (-0.51) | (-1.67) |
| Exporter | 0.215*** | 0.193*** | 0.116 | 0.169 |
| | (2.92) | (2.81) | (1.29) | (1.00) |
| No. of employees (log) | 0.024 | -0.0001 | 0.029 | 0.001 |
| | (1.31) | (-0.01) | (1.06) | (0.01) |
| % foreign owned | -0.002 | -0.003* | -0.002 | 0.003 |
| | (-1.30) | (-1.739) | (-1.08) | (0.87) |
| % government owned | -0.009** | -0.007** | -0.007 | -0.013 |
| | (-2.12) | (-2.17) | (-1.30) | (-0.97) |
| State capture (regional officials) | | 0.096* | 0.246*** | |
| | | (1.89) | (4.37) | |
| Bribe frequency | | 0.382*** | | |
| | | (15.43) | | |
| Graft index | | | 1.204*** | |
| | | | (8.69) | |
| Bribe tax (share of revenues) | | | | 0.031*** |
| | | | | (4.73) |
| *Region-level regressors* | | | | |
| per capita GRP (log) | 0.280 | 0.124 | 0.253 | 0.622** |
| | (1.34) | (0.53) | (0.93) | (2.01) |
| population (log) | 0.246*** | 0.150 | 0.194* | -0.218 |
| | (2.77) | (1.56) | (1.80) | (-1.56) |
| Extractive industries as share of GRP | -0.639* | -0.308* | -0.694 | 0.072 |
| | (-1.72) | (-0.62) | (-1.47) | (0.18) |
| Distance from Moscow (ln of km) | 0.022 | 0.007 | 0.005 | -0.098* |
| | (0.79) | (0.21) | (0.14) | (-1.87) |
| Latitude | 0.004 | 0.008 | 0.030 | -0.024 |
| | (0.31) | (0.54) | (1.51) | (-1.14) |
| No. of obs. (firms) | 3891 | 3025 | 2024 | 410 |
| F statistic | 7.06 | 34.12 | 15.05 | 3.66 |
| p value of F test | <.0001 | <.0001 | <.0001 | .001 |
| $R^2$ | .04 | .18 | .10 | .08 |

Dependent variable is degree to which corruption is considered to be an obstacle to firm operations. T-statistics, reported in parentheses below point estimates, are based on standard errors adjusted for non-independence of errors within regional clusters of observations, with *** p<0.01, ** p<0.05, * p<0.1.

Table B5

State capture and Bribe frequency regressions (firm level)

| Equation | 5.1 | 5.2 | 5.3 | 5.4 | 5.5 | 5.6 |
|---|---|---|---|---|---|---|
| **Dependent variable** | State capture (regional officials) | | Bribe frequency (common to make irregular payments to get things done) | | | |
| *Firm-level regressors* | | | | | | |
| Established 1990 or before | 0.081 | 0.083 | 0.001 | 0.199 | 0.013 | -0.008 |
| | (0.98) | (1.00) | (0.01) | (1.40) | (0.10) | (-0.06) |
| Retail firm | -0.087 | -0.092 | -0.074 | -0.134 | -0.085 | -0.079 |
| | (-1.18) | (-1.26) | (-0.98) | (-1.25) | (-1.10) | (-1.03) |
| Female manager | -0.096* | -0.090* | -0.084 | -0.075 | -0.078 | -0.087 |
| | (-1.83) | (-1.66) | (-1.56) | (-1.27) | (-1.42) | (-1.55) |
| Exporter | -0.083 | -0.080 | 0.139* | 0.063 | 0.123* | 0.139* |
| | (-1.49) | (-1.42) | (1.92) | (0.67) | (1.74) | (1.94) |
| No. of employees (log) | -0.0004 | 0.001 | 0.053** | 0.014 | 0.050** | 0.052** |
| | (-0.02) | (0.08) | (2.60) | (0.54) | (2.37) | (2.59) |
| % foreign owned | -0.002** | -0.002** | 0.002 | -0.0001 | 0.002 | -0.003 |
| | (-2.45) | (-2.40) | (0.91) | (-0.05) | (0.93) | (1.09) |
| % government owned | 0.005 | 0.0045 | -0.002 | -0.002 | -0.012*** | -0.002 |
| | (1.34) | (1.08) | (-0.31) | (-0.33) | (-2.99) | (-0.33) |
| No. of "gift" opportunities (interactions with officials) | | | | 0.133*** | | |
| | | | | (3.59) | | |
| Graft index | | | | 1.801*** | | |
| | | | | (11.14) | | |
| *Region-level regressors* | | | | | | |
| per capita GRP (log) | 0.214 | 0.541 | 0.235 | 0.157 | 0.132 | 0.409 |
| | (0.74) | (1.57) | (0.99) | (0.88) | (0.48) | (1.54) |
| population (log) | 0.033 | 0.061 | 0.259** | 0.268*** | 0.284*** | 0.287*** |
| | (0.32) | (0.49) | (2.47) | (3.15) | (2.68) | (2.90) |
| Extractive industries as share of GRP | -0.496 | -0.732** | -0.720*** | -0.628** | -0.606** | -0.774*** |
| | (-1.30) | (-2.11) | (-2.67) | (-2.59) | (-2.14) | (-2.73) |
| Distance from Moscow (ln of km) | 0.051 | 0.029 | 0.053 | 0.009 | 0.071** | 0.026 |
| | (0.42) | (0.82) | (1.46) | (0.26) | (2.01) | (0.76) |
| Latitude | -0.030 | -0.039 | 0.010 | 0.012 | 0.028 | 0.007 |
| | (-1.31) | (-1.57) | (0.56) | (0.80) | (1.48) | (0.34) |
| Newspaper copies per 1000 population | | -0.001** | | | | -0.001** |
| | | (-2.36) | | | | (-2.62) |
| Effective freedom of information law | | -0.126 | | | | -0.022 |
| | | (-0.43) | | | | (-0.07) |
| Effective freedom of information decree | | -0.019 | | | | -0.114 |
| | | (-0.06) | | | | (-0.37) |
| % of citizens who were asked for unofficial payment (FOM) | | | | | 0.023** | |
| | | | | | (2.07) | |
| No. of obs. (firms) | 3277 | 3277 | 3771 | 2380 | 3680 | 3771 |
| F statistic | 2.82 | 3.31 | 3.40 | 16.32 | 4.90 | 5.77 |
| p value of F test | .008 | .002 | .002 | <.0001 | .0001 | <.0001 |
| $R^2$ | .04 | .05 | .03 | .13 | .04 | .03 |

Dependent variable in 5.1 and 5.2 is extent to which firm has been affected by unofficial payments to local or regional officials to influence votes or decrees. Dependent variable in 5.3-5.6 is frequency with which firms "in my line of business" need to make irregular payments "to get things done" with respect to regulations, etc. T-statistics, reported in parentheses below point estimates, are based on standard errors adjusted for non-independence of errors within regional clusters of observations, with *** p<0.01, ** p<0.05, * p<0.1.

Table B6
Graft index, "Bribe tax" and Kickback regressions (firm level)

| Equation | 6.1 | 6.2 | 6.3 | 6.4 | 6.5 | 6.6 |
|---|---|---|---|---|---|---|
| **Dependent variable** | Graft index | | Bribe tax (share of revenues) | | Kickback tax (share of contract value) | |
| *Firm-level regressors* | | | | | | |
| Established 1990 or before | -0.004 | 0.017 | -0.0001 | 0.005 | -0.145 | -0.158 |
| | (-0.23) | (0.84) | (-0.01) | (0.07) | (-1.22) | (-1.32) |
| Retail firm | -0.006 | 0.001 | -0.092*** | -0.088*** | -0.193 | -0.186 |
| | (-0.42) | (0.10) | (-3.34) | (-2.94) | (-1.25) | (-1.17) |
| Female manager | -0.014 | -0.018 | -0.064** | -0.068** | -0.214** | -0.200** |
| | (-1.27) | (-1.64) | (-2.35) | (-2.35) | (-2.55) | (-2.50) |
| Exporter | 0.049*** | 0.047** | 0.030 | 0.034 | 0.078 | 0.088 |
| | (2.99) | (2.58) | (0.61) | (0.64) | (0.59) | (0.67) |
| No. of employees (log) | -0.003 | -0.005 | -0.030*** | -0.028** | -0.040 | -0.038 |
| | (-0.56) | (-0.97) | (-2.89) | (-2.45) | (-1.36) | (-1.26) |
| % foreign owned | -0.0002 | -0.0002 | -0.0001 | -0.0001 | 0.003 | 0.002 |
| | (-0.65) | (-1.26) | (-0.19) | (-0.09) | (0.73) | (0.68) |
| % government owned | 0.0001 | 0.0001 | 0.002 | 0.002 | -0.003 | -0.003 |
| | (0.17) | (0.04) | (1.43) | (1.45) | (-1.25) | (-1.36) |
| No. of "gift" opportunities (interactions with officials) | 0.042*** | 0.045*** | 0.050*** | 0.044** | | |
| | (6.01) | (5.65) | (3.19) | (2.53) | | |
| Time tax | | | | 0.035** | | |
| | | | | (2.30) | | |
| *Region-level regressors* | | | | | | |
| per capita GRP (log) | -0.011 | -0.017 | -0.086 | -0.085 | -0.199 | -0.116 |
| | (-0.73) | (-0.98) | (-1.00) | (-0.84) | (-1.45) | (-0.88) |
| population (log) | 0.022** | 0.005 | 0.134** | 0.126* | 0.309*** | 0.348*** |
| | (2.17) | (0.65) | (2.29) | (1.92) | (3.58) | (3.81) |
| Extractive industries as share of GRP | 0.026 | 0.006 | -0.046 | 0.003 | -0.188 | -0.308 |
| | (1.04) | (0.27) | (-0.42) | (0.02) | (-0.88) | (-1.54) |
| Distance from Moscow (ln of km) | 0.002 | 0.002 | 0.024* | 0.023* | 0.040 | 0.052** |
| | (1.16) | (0.73) | (1.74) | (1.65) | (1.60) | (2.06) |
| Latitude | 0.001 | 0.0002 | 0.017*** | 0.014* | 0.039*** | 0.038*** |
| | (0.45) | (0.26) | (1.15) | (2.13) | (3.43) | (3.43) |
| Doing Business index | | 0.017* | | | | |
| | | (1.71) | | | | |
| Procurement transparency index | | | | | -0.010* | |
| | | | | | (-1.81) | |
| Procurement transparency: completed contracts sub-index | | | | | | -0.028*** |
| | | | | | | (-3.10) |
| No. of obs. (firms) | 2557 | 1890 | 3299 | 2987 | 861 | 861 |
| Mean, dep. var. | | | | | | |
| F statistic | 4.25 | 7.44 | 6.54 | 8.11 | 4.00 | 4.41 |
| p value of F test | .0003 | <.0001 | <.0001 | <.0001 | .0005 | .0002 |
| $R^2$ | .03 | .04 | .02 | .03 | .04 | .05 |

Dependent variable is Graft index in 6.1 and 6.2, (log of) Bribe tax in 6.3 and 6.4, and (log of) Kickback tax in 6.5 and 6.6. T-statistics, reported in parentheses below point estimates, are based on standard errors adjusted for non-independence of errors within regional clusters of observations, with *** p<0.01, ** p<0.05, * p<0.1.