Methodological Annex

This Annex describes in more depth some issues of methodology, as well as analytical results underpinning some of the conclusions in the text.

BEEPS survey questions

Bribe frequency:

Thinking about officials, would you say the following statements are always, usually, frequently, sometimes, seldom, or never true?

(Never=1 Seldom=2 Sometimes=3 Frequently=4 Usually=5 Always=6)

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

Bribe tax

On average, what percent of total annual sales do firms like yours typically pay in unofficial payments/gifts to public officials? _____%

Kickback Tax

When firms in your industry do business with the government, what percent of the contract value would be typically paid in additional or unofficial payments/gifts to secure the contract? _____%

Corruption as a problem doing business

Can you tell me how problematic are these different factors for the operation and growth of your business: … Corruption

(No obstacle=1 Minor obstacle=2 Moderate obstacle=3 Major obstacle=4)

Sector-specific bribe frequency

Thinking now of unofficial payments/gifts that a firm like yours would make in a given year, could you please tell me how often would they make payments/gifts for the following purposes:

(Never=1 Seldom=2 Sometimes=3 Frequently=4 Usually=5 Always=6)

- To get connected to and maintain public services (electricity and telephone)
- To obtain business licenses and permits
- To obtain government contracts
- To deal with occupational health and safety inspections
- To deal with fire and building inspections
- To deal with environmental inspections
- To deal with taxes and tax collection
- To deal with customs/imports
- To deal with courts
- To influence the content of new legislation rules decrees etc.

State capture

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=0 Minor impact=1 Moderate impact=2 Major impact=3 Decisive impact=4)

- Private payments/gifts or other benefits to parliamentarians to affect their votes
- Private payments/gifts or other benefits to government officials to affect the content of government decrees

Notes on statistical significance

The many charts in this report that show changes over time for individual countries include mention below the chart of which changes are statistically significant changes. These determinations were based on simple *t*-tests for difference in means, and the threshold was set for a *p*-value of 10 percent. It should also be noted that when comparing values for different countries, those near each other on the charts are often not significantly different. For example, in Figure 2.1, the percentage of firms that said corruption was a problem in Albania in 2005 is not significantly different from the 2005 value for the Kyrgyz Republic, but it is significantly higher than the 2005 value for FYR Macedonia and other countries.

Sensitivity to treatment of nonresponse and possible respondent reticence

Throughout the report we have presented simple averages over all nonmissing observations, standard practice for such reports. Comparing 2002 to 2005, there was some increase in the percentage of firms that did not answer the relevant questions for one reason or another. For bribe frequency, for example, there was an increase in missing values, from 7.1 to 10.9 percent.[1] There were also increases in the percentage of missing values for the bribe tax (from 8.8 to 12.0 percent), for parliament capture (from 14.6 to 16.7 percent), and for executive decree capture (from 14.7 to 17.0 percent). For corruption as a problem doing business, there was a slight decrease in missing values, from 6.8 to 6.3 percent.

To test the sensitivity of the main corruption measures used in this report to assumptions about the meaning of nonresponses and concerns about respondent candidness, we constructed four alternative variations of each of the three corruption measures. An explanation of the alternative assumptions, and the correlation of the resulting measure with the unadjusted measure, are provided in Table 1. For every scenario, the resulting values are highly correlated with the simple measure.

While the overall results are not sensitive to alternative assumptions about reticence and nonresponse, some of the individual country trends are influenced due to large changes in the incidence of nonresponse in some countries. Applying the (rather extreme) alternative assumptions

Table 1 Sensitivity to assumptions about reticence and nonresponse

Correlations between the level in 2005 and the level under the alternative scenarios; and between the change between 2002 and 2005 and the change under the alternative scenarios		Corruption as a problem	Bribe tax	Bribe frequency
Restrict the sample to firms that complained about at least one aspect of the business environment in the "problems doing business" question. This had the largest effects on Uzbekistan (9% sample reduction), Estonia (8%), Armenia (7%), and Turkey (7%).	*Level in 2005*	0.998	0.999	0.999
	Change between 2002 and 2005	0.992	0.996	0.997
Restrict the sample to firms that gave a nonzero response to at least one of the questions about corruption. This had the largest effects on Uzbekistan (9% sample reduction), Serbia and Montenegro (5%), Bosnia and Herzegovina (5%), and Poland (5%).	*Level in 2005*	0.957	0.981	0.971
	Change between 2002 and 2005	0.930	0.954	0.955
Assume that missing responses indicate a lack of knowledge about the corrupt activity in the question, and set them equal to the value indicating "no corruption."	*Level in 2005*	0.994	0.977	0.988
	Change between 2002 and 2005	0.992	0.964	0.975
Assume that missing responses indicate that the firm has knowledge about the corrupt activity and just doesn't want to reveal it, and set these missing responses equal to the average of the positive responses for that country and that year.	*Level in 2005*	0.987	0.941	0.990
	Change between 2002 and 2005	0.983	0.924	0.981

presented in Table 1 to individual countries, we tested whether the trends that are apparent in the simple charts throughout this report might be affected. Done for five measures of corruption, four alternative assumptions, and 26/7 countries, this comes to 536 different trends, of which 40 would reverse under an alternative assumption. The overwhelming majority of these are countries/measures that had little change to begin with. Of the country/measures where the change in the simple measure is statistically significant at the 10 percent level, there were only four cases of reversal under an extreme assumption: Turkey's improvement on bribe frequency, Georgia's improvement in parliamentary and executive decree capture, and Belarus' improvement in executive decree capture would all vanish with the assumption that every single one of the "missings" is really a positive response. For corruption as a problem and the bribe tax, no country that shows a significant change would experience a sign reversal under any of the alternative scenarios.

Note that the extreme assumption described above assigns every one of the missing values the rating of the average of the nonzero, nonmissing responses. This assumes, for example, that not even one firm in the sample truly did not know whether they are affected by parliamentary capture. This test only examined whether a statistically significant change would vanish—that is, the sign would change—not whether it would decline in level of significance. Given that the alternative assumptions are extreme and implausible, constructed only for the purpose of sensitivity testing, this was appropriate.

Sensitivity to respondent optimism

Following the methodology laid out in World Bank (2004), a rudimentary index of respondent "optimism" was constructed to account for the fact that some respondents tend to give uniformly positive responses and others give uniformly negative responses, even when they are describing the same thing. The methodology for constructing the "optimism" variable focuses on complaints about macroeconomic conditions (inflation and exchange rate volatility), a variable that would tend to have relatively little firm-specific incidence. Firms that complained relatively more about macroeconomic uncertainty than would be predicted based on actual inflation and exchange rate volatility measures have lower values for "optimism," and those that complained relatively little had higher values for optimism.

A simple test was conducted to explore the sensitivity to firm-level optimism of the country-specific trends described in the text for the four main corruption measures. While the notes on statistical significance in the figures are based on simple *t*-tests, the additional test involved a regression of the corruption measure on the optimism measure and a dummy for the survey year, checking to see if the coefficient on the dummy variable maintains the same sign even after controlling for firm-level optimism. For the four main measures of corruption, for 27 countries, there were only four instances where the direction of the trend changed after controlling for respondent optimism: Serbia and Montenegro for both bribe frequency and corruption as a problem doing business, and Kazakhstan and Romania for corruption as a problem doing business.

Sensitivity to sample selection

Sampling in the BEEPS reflected the actual distribution of firms in the countries according to each sector's contribution to GDP, with certain exceptions. Some sectors were excluded, such as farms and regulated industries, and the sampling approach required minimum numbers of firms with certain characteristics, such as exporters, state-owned enterprises, large firms, and so forth. It is not possible to gauge the impact of excluding certain sectors, although it is possible to examine the impact of differences in ex post sample characteristics by weighting the charac-

teristics so that they have the same share of the sample in every country. Focusing on size and sector, the reweighted samples exhibit virtually identical patterns as those depicted in the charts in this report based on simple averages from the overall sample.

While the BEEPS surveys in 2002 and 2005 used a nearly identical approach to sampling, one innovation in sampling may have influenced the results. In particular, the 2005 sample included a number of firms that also participated in the 2002 survey, firms that we refer to as the "panel firms." This innovation to the sample provides a needed longitudinal perspective. However, since a key criteria of sample selection in both years is that the firm be at least three years old—a rule selected so that firm performance over the previous three years could be tracked—the inclusion of the panel firms in 2005 meant that a significant portion of the sample was at least six years old, resulting in an "older" sample in 2005. If newer firms are more beset by corruption, and this does seem to be the case, then some of the apparent reduction in levels of corruption between 2002 and 2005 could be due to this modest innovation in sampling methodology. Indeed, Hallward-Driemeier (2006) found using the same data that the incidence of corruption did have an impact on firm exit.

The impact of the panel sampling would be less of an issue if the overall samples had similar age structures, for example if the 6+ year old panel firms (survivors) merely replaced other 6+ year old firms in the sample (also survivors, by definition).[2] In fact, the sample in 2005 was older than the one in 2002, whether including the panel firms or not. The average firm age in 2002 was 14.7 years, whereas the average ages of panel and nonpanel firms, respectively, were 18.3 and 15.3 years. This is partly explained by the fact that the 2002 survey began slightly later in the spring, and the sampling rule that firms be at least three years old meant that the 2002 sample included some firms that were established three calendar years earlier, whereas all of the firms in the 2005 sample were established at least four calendar years earlier.

As a stronger test of the sensitivity of key results to the panel aspect of the dataset and to the fact that 3-year-old firms were included in 2002 but not 2005, we calculated the averages of the four key indicators of corruption for firms that are more than six years old. The results are presented in Table 2. Restricting the sample to firms more than six years old does not have an appreciable effect on most of the qualitative conclusions generated by the full sample: The magnitudes of the improvements in bribe tax and bribe frequency are somewhat smaller for the restricted

Table 2 Change in key corruption variables when restricting sample to older firms

	Average of country means		Average of country means for firms > 6 years old	
	2002	2005	2002	2005
Corruption as a problem (scale of 1 to 4)	2.24	2.15	2.26	2.13
Bribe tax (percent of revenue)	1.64	1.05	1.49	0.98
Bribe frequency (scale of 1 to 6)	2.61	2.35	2.54	2.32
State capture (scale of 0 to 4)	0.40	0.36	0.40	0.36

sample, while the magnitude of the improvement in corruption as a problem doing business is somewhat larger for the restricted sample. There is no impact on state capture measures.

Regarding the individual country patterns, no country that is marked in the text as having a significant change in any of the four main corruption measures would have a sign reversal by focusing on the restricted sample, although some do have a decline in the level of significance, due partially to the smaller sample sizes. For corruption as a problem, the deteriorations for Azerbaijan and the Kyrgyz Republic are not significant at the 10 percent level when restricting the sample to firms more than six years old. For bribe frequency, the deterioration in the Kyrgyz Republic and the improvements in Latvia, Moldova, and Ukraine are not significant for older firms. For bribe tax, the improvements in Czech Republic, Kazakhstan, Moldova, the Slovak Republic, and Uzbekistan are not significant for older firms. For state capture, the improvements in Latvia and the Slovak Republic fall in significance, and the deteriorations in Albania and Poland are not significant when restricting the sample to firms that are more than six years old.

Regression results and correlations

Chapter 3 reports on the results of regressions that combine firm-level characteristics and country-level measures in a single framework. The methodology and results for 2002 are described in ACT2 (World Bank 2004). The results are shown in Table 3, with the dependent variables listed across the top and the explanatory variables on the left. All regressions allowed for clustering of errors within a country, and robust

Table 3 Regressions on firm characteristics and country level variables, 2005

	Bribe tax (1)	Corruption as a problem (2)	Bribe frequency (3)	State capture (4)	Bribe to influence law (5)	Bribe to get connected (6)	Bribe to get licenses (7)	Bribe for government contracts (8)	Bribe for taxes (9)	Bribe for customs (10)	Bribe for courts (11)
Age	–0.17***	–0.05**	–0.19***	–0.03*	–0.04*	–0.08***	–0.16***	–0.11***	–0.18***	–0.11***	–0.08**
	(0.00)	(0.02)	(0.00)	(0.09)	(0.06)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)
Small firm	0.25**	–0.04	–0.10	–0.08**	–0.03	0.00	0.01	0.04	–0.01	–0.06	–0.04
	(0.01)	(0.50)	(0.17)	(0.01)	(0.41)	(0.90)	(0.80)	(0.47)	(0.81)	(0.39)	(0.49)
Private	0.36**	0.19***	0.39***	0.00	0.03	–0.01	0.24***	0.21**	0.17**	0.19***	0.15**
	(0.01)	(0.00)	(0.00)	(0.93)	(0.56)	(0.89)	(0.01)	(0.02)	(0.03)	(0.01)	(0.05)
Foreign owned	–0.29***	–0.02	–0.17**	–0.02	–0.01	–0.07*	–0.15**	–0.18***	–0.07	0.24**	–0.09*
	(0.01)	(0.59)	(0.03)	(0.58)	(0.89)	(0.08)	(0.02)	(0.00)	(0.36)	(0.01)	(0.09)
Manufacturer	0.26***	0.07*	0.18***	0.00	0.04	0.04	0.12**	0.41***	0.08*	0.14***	0.07*
	(0.01)	(0.07)	(0.00)	(0.92)	(0.14)	(0.14)	(0.02)	(0.00)	(0.07)	(0.00)	(0.07)
City	0.09**	0.02	0.06***	0.02*	0.03**	0.00	0.04**	0.09***	0.03	0.05**	0.04**
	(0.03)	(0.24)	(0.01)	(0.10)	(0.01)	(0.78)	(0.01)	(0.00)	(0.18)	(0.04)	(0.02)
GDP growth	0.02	–0.05**	–0.04	–0.02	–0.01	–0.02	–0.02	–0.04*	–0.04	–0.03	–0.03
	(0.74)	(0.02)	(0.35)	(0.19)	(0.56)	(0.49)	(0.49)	(0.07)	(0.47)	(0.33)	(0.16)
Years in office	0.04	0.00	0.00	–0.01	–0.01	–0.01	0.00	–0.02	0.03	–0.01	–0.01
	(0.32)	(0.77)	(1.00)	(0.13)	(0.38)	(0.39)	(0.80)	(0.20)	(0.40)	(0.81)	(0.59)
Legislative election	–0.26	0.05	–0.19	–0.07	–0.06	–0.13	–0.11	0.08	–0.32	–0.10	–0.18
	(0.12)	(0.72)	(0.33)	(0.19)	(0.35)	(0.18)	(0.34)	(0.38)	(0.14)	(0.41)	(0.11)
CPIA indicator	–0.17	–0.15	–0.54***	–0.09	–0.01	–0.25**	–0.39***	–0.02	–0.44**	–0.26	–0.26*
	(0.33)	(0.15)	(0.01)	(0.14)	(0.92)	(0.03)	(0.00)	(0.86)	(0.04)	(0.12)	(0.05)
Optimism	–0.11*	–0.38***	–0.18***	–0.05***	–0.10***	–0.08**	–0.16***	–0.21***	–0.16***	–0.17***	–0.16***
	(0.06)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Bribe tax		0.09***									
		(0.00)									
Active capture				0.31***							
				(0.00)							
Constant	1.05	3.04***	4.93***	0.59	1.58***	2.85***	3.78***	2.21***	4.06***	2.98***	3.01***
	(0.28)	(0.00)	(0.00)	(0.10)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)
Observations	5531	5273	5565	4618	5164	5641	5591	5264	5565	5224	5261
Adjusted *R*-squared	0.03	0.21	0.09	0.18	0.02	0.03	0.06	0.06	0.09	0.05	0.05

Sources: Data constructed from BEEPS 2005; World Bank's Database of Political Institutions; World Bank's CPIA indicators; and World Development Indicators.

Note: Robust *p* values in parentheses: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions include all ECA countries except for Bosnia and Herzegovina, Slovenia and Uzbekistan, and Turkey for lack of at least one variable.

(heteroskedasticity adjusted) *p*-values are in parentheses. Variable definitions are the same as in ACT2:

Age	Number of years since the firm began operations in that country (logs)
Small firm	Dummy for firms with less than 50 employees
Private	Dummy for privately owned firms
Foreign owned	Dummy for firms that are foreign owned
Manufacturer	Dummy for manufacturing, construction, or mining
City	Population of the city where the firm is located: 1=under 50,000; 2=between 50,000 and 250,000; 3=between 250,000 and 1,000,000; 4=over 1,000,000; 5=capital
GDP growth	Growth rate of GDP, 1 year lag
Years in office	Number of years the chief executive has been in office
Legislative election	Dummy for legislative elections in the previous calendar year (2004)
CPIA indicator	Average of eight CPIA indicators including management of inflation and macroeconomic imbalances; trade policy and foreign exchange regime; competitive environment for the private sector; factor and product markets; quality of public administration; quality of budgetary and financial management; efficiency of revenue mobilization; and property rights and rule-based governance.
Optimism	Residuals of regressing macroeconomic perception ("How problematic macroeconomic instability is for the operation and growth of your business?") on actual levels of inflation and exchange rate volatility and adding dummies for firms that export products and/or import supplies. A higher score represents a more optimistic view while a lower score a more pessimistic view about the macroeconomic conditions.

Chapter 3 also describes the results of regressions based on the panel data. As each firm in the panel dataset responded to the survey in both 2002 and 2005, a measure of the change in assessment could be constructed for each firm. These are the dependent variables, shown across the top of Table 4, with the explanatory variables on the left. All regressions allowed for clustering of errors within a country, and robust (heteroskedasticity adjusted) *p*-values are in parentheses.

Chapter 4 presents scatter plots of measures of corruption outcomes against measures of policy taken from the Doing Business indicators. Table 5 through Table 8 show the results of regressing one on the other, as well as the effects of adding the log of GDP per capita in 2004 and various measures of cross-cutting reforms. Sector-specific measures are

Table 4 Panel regression results

	Change in bribe tax (1)	Change in corruption as a problem (2)	Change in bribe frequency (3)	Change in state capture (4)	Change in active capture (5)
Age	0.35	–0.04	–0.02	–0.03	–0.02
	(0.10)	(0.49)	(0.86)	(0.76)	(0.71)
Small firm	–0.24	–0.01	–0.14	0.05	0.12
	(0.55)	(0.92)	(0.34)	(0.52)	(0.33)
Private	0.16	–0.17	–0.24	–0.07	–0.11
	(0.72)	(0.15)	(0.22)	(0.61)	(0.36)
Foreign owner	0.14	–0.03	–0.03	0.08	0.03
	(0.65)	(0.88)	(0.88)	(0.34)	(0.78)
Manufacturer	0.01	0.07	0.14	0.12**	0.07
	(0.98)	(0.40)	(0.14)	(0.04)	(0.24)
City	–0.01	–0.06	0	0	0.01
	(0.90)	(0.14)	(0.94)	(0.89)	(0.83)
GDP growth	0.1	0.05	0.01	0.01	0.05*
	(0.15)	(0.19)	(0.81)	(0.69)	(0.08)
Average CPIA	0.56**	0.18	–0.06	–0.07	0.09
	(0.04)	(0.21)	(0.74)	(0.44)	(0.35)
Optimism	0.13	–0.22***	–0.12**	–0.08**	0
	(0.27)	(0.00)	(0.05)	(0.02)	(0.96)
Bribe tax		0.03			
		(0.20)			
Active Capture				0.29***	
				(0.00)	
Constant	–4.29***	–0.64	0.27	–0.15	–0.65
	(0.01)	(0.36)	(0.80)	(0.82)	(0.22)
Observations	1027	1024	1054	782	906
Adjusted *R*-squared	0.00	0.04	0.00	0.10	0.00

Note: Robust *p* values in parentheses:
* significant at 10%; ** significant at 5%; *** significant at 1%.

taken from Doing Business and include both specific indicators (such as number of procedures, time, and cost) as well as a summary that is simply the global rank for that area. The Doing Business measures (including the ranks) are higher for countries with more onerous systems, so we would expect positive coefficients. The cross-cutting measures include the index of anticorruption legislation adopted between 1999 and 2002 from Rousso and Steves (2005), the World Bank's CPIA assessment of quality

of budget and financial management, and the CPIA assessment of quality of public administration. These are all higher for countries with better systems, so we would expect negative coefficients. The index of cross-cutting institutions was created by a principal components procedure of these three variables. The index is a weighted average of the three, with very nearly equal weights as they each have similar loads on the first principal component.

The regressions presented in Table 5 through Table 8 could arguably be mis-specified if the measures of corruption and of institutions are endogenous. Perhaps, for example, some aspect of history or culture has influenced both the level of corruption and the quality of institutions. The sector-specific proxies taken from Doing Business seem less susceptible to this problem, as many are policy levers that can be reformed relatively quickly. Indeed, many of the Doing Business indicators are not even correlated with each other. The cross-cutting measures, in contrast, would seem to be more susceptible to problems of endogeneity.

Although it is beyond the scope of this report to fully sort out the issues of endogeneity—thus the use of the word "association" in the captions to the tables—efforts were made to explore the robustness of the main results. The regressions that include GDP per capita have already addressed this issue to some extent, as this variable would capture many factors that might be generating endogeneity. For the equations that do not include GDP per capita, and focusing on the ones using the indices of cross-cutting and sector-specific measures, two-stage least squares was employed with instruments for the cross-cutting index. The instruments include: distance from Dusseldorf; years under communism; and secondary school enrollment in 1990, drawing on de Melo, Denizer, Gelb, and Tenev (1997) and Fischer and Sahay (2000). All of the results depicted in column (4) of each of Table 5 through Table 8 are confirmed using this approach.

Chapter 4 also describes cross-cutting anticorruption reforms as reported in Dorhoi (2005). As these were only available for 15 countries, there was limited scope for multivariate regression. Table 9 presents simple correlations between the measures of corruption outcomes and cross-cutting anticorruption policies.

Chapter 4 also describes the results of hierarchical cluster analysis examining how countries naturally group together, notwithstanding their proximity, history, or other traditional criteria for grouping countries. Cluster analysis is an exploratory approach to data analysis, one that does not test hypotheses determined a priori, but rather illuminates underlying

structures in the data. Hierarchical clustering separates observations, in this case countries, into a hierarchy of groups based on how similar or dissimilar they appear in the data. This is done through an iterative procedure as in the following example for hierarchical clustering according to ten different variables: First, the Euclidian distance for every pair of countries is computed. The two countries with the smallest distance (that is, those that are the most similar) are then marked as a group. This pair of countries is then treated as if it were a single country, with the variables representing the average of the two countries. The process is then repeated iteratively until there remains only a single group comprised of all countries.

Table 5 Sector-specific and cross-cutting policies: association with tax bribery

	Dependent variable = bribery for dealing with taxes and tax administration								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Rank for dealing with taxes	0.005			0.001	–0.001				
	(0.14)			(0.83)	(0.65)				
Index of cross-cutting institutions		–0.229		–0.221	–0.042				
		(0.01)***		(0.00)***	(0.67)				
GDP per capita (log)			–0.417		–0.396				–0.502
			(0.00)***		(0.07)*				(0.02)**
Number of tax payments per year						0.011		–0.001	–0.004
						(0.04)**		(0.93)	(0.57)
Time needed to deal with taxes						–0.000		–0.000	–0.000
						(0.52)		(0.68)	(0.18)
Impact of taxes on profits						–0.008		–0.004	0.001
						(0.37)		(0.64)	(0.93)
Quality of budget and financial management							0.085	–0.011	0.264
							(0.77)	(0.97)	(0.39)
Quality of public administration							–0.428	–0.369	–0.006
							(0.14)	(0.25)	(0.98)
Index of anticorruption legislation							–0.477	–0.678	–0.834
							(0.42)	(0.27)	(0.13)
Constant	1.530	2.001	5.273	1.951	5.237	1.866	3.413	3.962	5.697
	(0.00)***	(0.00)***	(0.00)***	(0.00)***	(0.01)***	(0.00)***	(0.00)***	(0.00)***	(0.00)***
Observations	24	24	24	24	24	24	24	24	24
R-squared	0.10	0.32	0.44	0.32	0.45	0.19	0.35	0.37	0.54

Sources: BEEPS 2005, *Doing Business in 2006* (World Bank 2006), World Bank's CPIA 2004, Rousso and Steves (2005) based on anticorruption laws and policies adopted between 1999 and 2002; World Development Indicators for GDP per capita in 2004.
Note: Robust *p* values in parentheses: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions include all ECA countries except for Slovenia, Tajikistan, Turkey, and Turkmenistan, for lack of at least one variable.

Table 6 Sector-specific and cross-cutting policies: association with customs bribery

	Dependent variable = bribery for dealing with customs/imports								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Rank for trading across borders	0.004			0.004	0.003				
	(0.03)**			(0.11)	(0.23)				
Index of cross-cutting institutions		–0.095		–0.026	0.016				
		(0.10)*		(0.68)	(0.81)				
GDP per capita (log)			–0.178		–0.110				–0.298
			(0.03)**		(0.37)				(0.10)
Number of documents needed for imports						0.027		0.030	0.050
						(0.28)		(0.30)	(0.08)*
Number of signatures needed for imports						0.005		0.001	–0.005
						(0.53)		(0.88)	(0.57)
Time needed to deal with import requirements						–0.001		–0.003	–0.007
						(0.90)		(0.62)	(0.24)
Quality of budget and financial management							0.008	–0.083	0.027
							(0.96)	(0.68)	(0.91)
Quality of public administration							–0.309	–0.211	–0.048
							(0.11)	(0.38)	(0.87)
Index of anticorruption legislation							0.268	0.125	0.037
							(0.62)	(0.82)	(0.95)
Constant	1.407	1.766	3.163	1.462	2.393	1.396	2.646	2.503	3.953
	(0.00)***	(0.00)***	(0.00)***	(0.00)***	(0.03)**	(0.00)***	(0.00)***	(0.01)**	(0.00)***
Observations	24	24	24	24	24	24	24	24	24
R-squared	0.16	0.10	0.15	0.16	0.18	0.11	0.16	0.19	0.26

Sources: BEEPS 2005, *Doing Business in 2006* (World Bank 2006), World Bank's CPIA 2004, Rousso and Steves (2005) based on anticorruption laws and policies adopted between 1999 and 2002; World Development Indicators for GDP per capita in 2004.

Notes: Robust *p* values in parentheses: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions include all ECA countries except for Slovenia, Tajikistan, Turkey, and Turkmenistan, for lack of at least one variable.

Table 7 Sector-specific and cross-cutting policies: association with bribery in courts

	Dependent variable = bribery in courts								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Rank for enforcing contracts	0.007			0.007	0.007				
	(0.00)***			(0.02)**	(0.03)**				
Index of cross-cutting institutions		–0.081		0.007	0.016				
		(0.11)		(0.91)	(0.82)				
GDP per capita (log)			–0.110		–0.018				0.030
			(0.12)		(0.85)				(0.86)
Number of procedures to enforce a contract						0.014		0.019	0.020
						(0.10)*		(0.09)*	(0.11)
Time to enforce a contract						0.000		–0.000	–0.000
						(0.89)		(0.83)	(0.83)
Cost of enforcing a contract						0.016		0.022	0.023
						(0.03)**		(0.08)*	(0.11)
Quality of budget and financial management							0.015	0.200	0.187
							(0.94)	(0.30)	(0.37)
Quality of public administration							–0.139	0.022	0.002
							(0.48)	(0.90)	(0.99)
Index of anticorruption legislation							–0.178	–0.048	–0.047
							(0.74)	(0.93)	(0.93)
Constant	1.249	1.694	2.556	1.239	1.381	0.963	2.211	–0.069	–0.196
	(0.00)***	(0.00)***	(0.00)***	(0.00)***	(0.11)	(0.00)***	(0.00)***	(0.94)	(0.88)
Observations	24	24	24	24	24	24	24	24	24
R-squared	0.36	0.09	–0.110	0.36	0.36	0.30	0.09	0.34	0.34

Sources: BEEPS 2005, *Doing Business in 2006* (World Bank 2006), World Bank's CPIA 2004, Rousso and Steves (2005) based on anticorruption laws and policies adopted between 1999 and 2002; World Development Indicators for GDP per capita in 2004.
Notes: Robust *p* values in parentheses: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions include all ECA countries except for Slovenia, Tajikistan, Turkey, and Turkmenistan, for lack of at least one variable.

Table 8 Sector-specific and cross-cutting policies: association with licensing bribery

	Dependent variable = bribery for dealing with business licensing and permits								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Rank for dealing with licenses	0.003			0.002	0.002				
	(0.09)*			(0.34)	(0.21)				
Index of cross-cutting institutions		–0.161		–0.147	–0.077				
		(0.00)***		(0.00)***	(0.22)				
GDP per capita (log)			–0.239		–0.134				–0.202
			(0.00)***		(0.20)				(0.17)
Number of procedures for dealing with licenses						–0.004		–0.003	–0.004
						(0.73)		(0.82)	(0.71)
Time to deal with licenses						0.001		0.000	0.001
						(0.25)		(0.75)	(0.36)
Cost of dealing with licenses						0.000		0.000	–0.000
						(0.73)		(1.00)	(0.75)
Quality of budget and financial management							0.113	0.102	0.172
							(0.47)	(0.57)	(0.33)
Quality of public administration							–0.375	–0.368	–0.205
							(0.01)**	(0.03)**	(0.10)*
Index of anticorruption legislation							–0.220	–0.163	–0.008
							(0.50)	(0.73)	(0.99)
Constant	1.738	2.058	3.932	1.914	2.928	1.842	3.036	2.995	3.510
	(0.00)***	(0.00)***	(0.00)***	(0.00)***	(0.00)***	(0.00)***	(0.00)***	(0.00)***	(0.00)***
Observations	23	23	23	23	23	23	23	23	23
R-squared	0.12	0.38	0.33	0.41	0.45	0.10	0.46	0.46	0.51

Sources: BEEPS 2005, *Doing Business in 2006* (World Bank 2006), World Bank's CPIA 2004, Rousso and Steves (2005) based on anticorruption laws and policies adopted between 1999 and 2002; World Development Indicators for GDP per capita in 2004.

Notes: Robust *p* values in parentheses: * significant at 10%; ** significant at 5%; *** significant at 1%. Regressions include all ECA countries except for Slovenia, Tajikistan, Turkey, Turkmenistan, and Uzbekistan for lack of at least one variable.

Table 9 Correlations between corruption outcomes and cross-cutting anticorruption policies

		Bribe frequency	Corruption as a problem doing business	Bribe tax	State capture
Measures of corruption outcomes	Corruption as a problem	0.67			
		(0.00)			
	Bribe tax	0.71	0.49		
		(0.00)	(0.00)		
	State capture	0.50	0.72	0.25	
		(0.00)	(0.00)	(0.18)	
Indexes of anticorruption activity					
	Anticorruption activity index	–0.28	**–0.44***	–0.29	–0.12
		(0.31)	**(0.10)**	(0.30)	(0.67)
	Anticorruption strategy	**0.39**	0.23	0.29	**0.53****
		(0.15)	(0.41)	(0.29)	**(0.04)**
	Anticorruption policies	–0.02	0.04	**–0.39**	0.21
		(0.95)	(0.88)	**(0.15)**	(0.46)
Cross-cutting anticorruption policies and institutions	Political party financing	0.07	0.03	–0.05	0.18
		(0.80)	(0.93)	(0.87)	(0.53)
	Asset monitoring	0.13	–0.02	0.00	**0.39**
		(0.64)	(0.94)	(0.99)	**(0.15)**
	Conflict of interest	**–0.42**	**–0.49***	**–0.49***	**–0.43**
		(0.12)	**(0.06)**	**(0.06)**	**(0.11)**
	Financial and auditing controls	**–0.54****	**–0.61*****	–0.30	–0.33
		(0.04)	**(0.01)**	(0.28)	(0.22)
	Freedom of information	–0.10	–0.19	0.07	–0.33
		(0.71)	(0.49)	(0.80)	(0.23)
	Immunities	–0.14	–0.32	–0.01	–0.30
		(0.63)	(0.24)	(0.96)	(0.28)
	Public procurement	–0.33	**–0.41**	–0.26	–0.11
		(0.23)	**(0.13)**	(0.36)	(0.70)
Policies grouped by the part of government being controlled	Controls on the executive	**–0.56****	**–0.69*****	–0.32	–0.29
		(0.03)	**(0.00)**	(0.25)	(0.29)
	Controls on the legislature	–0.24	**–0.38**	–0.27	–0.01
		(0.39)	**(0.17)**	(0.33)	(0.96)
	Controls on the judiciary	–0.34	**–0.43**	**–0.46***	–0.04
		(0.21)	**(0.11)**	**(0.09)**	(0.88)

Source: Corruption measures are from BEEPS 2005; Anticorruption measures are from Dorhoi (2005).
Notes: The table shows simple correlations, with *p*-values in parentheses. There were 15 observations for each correlation. Correlations in bold are significant at least at the 20% level. Asterisks indicate higher levels of statistical significance: * significant at 10%; ** significant at 5%; *** significant at 1%. Anticorruption assessments are based on the status in 2003; Corruption measures are based on data in 2005.

Notes

1. These are simple averages across countries, such that each country has an equal weight.
2. For the four major dimensions of corruption, there is no significant difference between the average response of panel firms and nonpanel firms in either year. For corruption in specific sectors, there are some differences, although these are not always in the same direction. For some sectors, panel firms said more corruption and for other sectors less. (i) For fire and building inspections and environmental inspections, panel firms were somewhat more positive about the improvement, bringing the overall sample number up slightly. (ii) For taxes and courts, panel firms were somewhat more negative about the improvement, bringing the overall sample number down slightly. (iii) For courts, although the substantive conclusion is unaltered by the presence of the panel firms, it is interesting that the panel firms show a significantly worse assessment, while the overall sample shows no significant change. (iv) For the use of bribes to influence laws, panel firms were somewhat more negative about the improvement, bringing the overall sample number down slightly.