Intelligence and corruption

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ABSTRACT

This study finds that countries with high-IQ populations enjoy less corruption. I propose that this is because intelligent people have longer time horizons.

1. Introduction

Most specialists agree that corruption reduces economic growth (Méon and Sekkat, 2005). Research has recently focused on the determinants of corruption which include political institutions, global economic integration, the size of the shadow economy, business cycles, legal origin, and social trust (Dreher and Siemers, 2009; Dreher and Schneider, 2010; Gokcekus and Suzuki, 2011; Bjørnskov, forthcoming). Using cross-sectional data for 125 countries, I show that countries with high-IQ populations enjoy less corruption.

Because corruption is individually rational, but socially inefficient, agents contemplating corrupt activities find themselves in a prisoner's dilemma. The dilemma can be overcome when the same players interact in an infinitely repeated game, but cooperation can also arise in circumstances in which different participants interact under a finite time horizon. Experimental evidence shows that cooperation is more prevalent among intelligent players (Jones, 2008). Corruption of the especially inefficient roving-bandit type (Olson, 2000) results under a short time-horizon. People with longer time horizons internalize the deleterious future effects of contemporary corruption. I propose that there is less corruption in societies with high-IQ populations because more intelligent people have longer time horizons, a common finding in psychology and economics (Shamosh and Gray, 2008; Jones and Podemska, 2010). Besides having a direct positive effect on economic growth (Jones and Schneider, 2006; Weede and Kämpf, 2002), intelligence also has an indirect beneficial effect on growth through less corruption (Fig. 1).

2. Data and estimation strategy

To measure corruption, I use the reversed Transparency International's Perception of Corruption Index (CPI) for the year 2010. The reversed index assumes values between 0 (no corruption) and 10 (extreme corruption). The CPI has often been used in empirical research on corruption (see the studies mentioned in Section 1).

I measure intelligence using the IQ data by Lynn and Vanhanen (2002, 2006) and Lynn and Meisenberg (2010). In the base-line model, I use the data by Lynn and Vanhanen (2006), which has also been used by Jones and Schneider (2010). The data by Lynn and Vanhanen (2002) and Lynn and Meisenberg (2010) are used in the robustness tests section.[1] The IQ data in the sample have values between 64 and 108.

To illustrate the association between IQ and corruption, I present correlations between TI's reversed CPI and the IQ. Fig. 2 shows that IQ is negatively associated with corruption. The correlation coefficient between CPI and IQ is −0.63. Countries with high-IQ populations and low corruption include Hong Kong, Singapore and Japan.

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[1] Jones and Podemska (2010) elaborate on the quality of the data by Lynn and Vanhanen (2002, 2006) and Lynn and Meisenberg (2010).
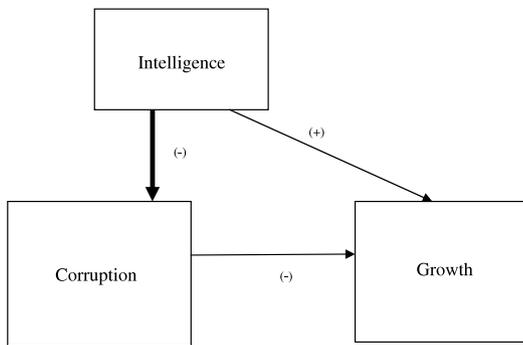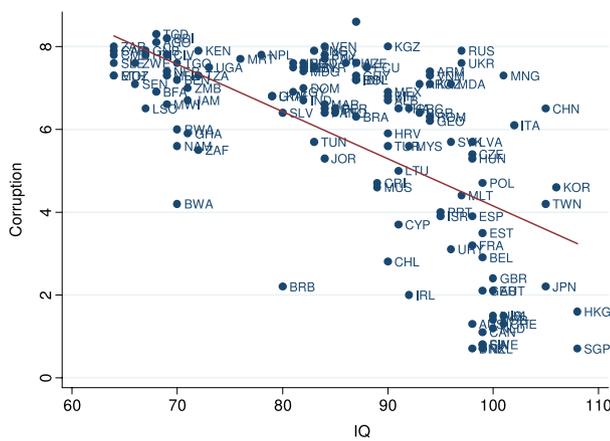
Fig. 1. The nexus between intelligence, corruption, and growth.

Correlation coefficient: -0.63. Source: Transparency International (2010)
and Lynn and Vanhanen (2006)

Fig. 2. Corruption (2010) and IQ (2006).

The base-line econometric model has the following form:

$$Corruption_i = \alpha IQ_i + \Sigma_k \delta_k Continent_{ik} + \Sigma_l \zeta_l x_{il} \\ + \Sigma_m \gamma_m Legal\ Origin_{im} + u_i$$

$$\text{with } i = 1, \ldots, 125; \ k = 1, \ldots, 4;$$

$$l = 1, \ldots, 3; \ m = 1, \ldots, 4. \tag{1}$$

The subscript i refers to country i. IQ_i denotes the intelligence quotient. In my base-line specification, I use the IQ for the year 2006 and expect a negative influence of the IQ on corruption. $Continent_{ik}$ are regional dummy variables assuming the value one if country i belongs to continent k and zero otherwise. I distinguish between five different continents: Africa, Asia, Europe, America and Oceania (reference category). The vector $\boldsymbol{x}_i$ contains the political–economic control variables. I include the logarithm of real GDP per capita for the year 2005 (Penn World Table 6.3), the Democracy–Dictatorship dummy variable by Cheibub et al. (2010) for the year 2005[2] and the KOF index of economic globalization for the year 2005 (Dreher, 2006; Dreher et al., 2008). The *Legal Origin*$_{im}$ dummy variables are taken from La Porta et al. (1999). I distinguish between five different legal origins: French, German, Scandinavian, Socialist and British (reference category). I estimate the model with ordinary least squares (OLS) and robust standard errors.

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[2] The Democracy–Dictatorship variable distinguishes between regimes in which executive and legislative offices are allocated in contested elections and those regimes in which this is not the case. The variable assumes the value one for democracies and zero otherwise. See Cheibub et al. (2010) for a more encompassing discussion on classifying democracies and dictatorships. The more traditional measures of democracy are the POLITY IV and the Freedom House indices. These indices have, however, been criticized on several grounds (Cheibub et al., 2010).

Table 1
Regression results. Dependent variable: reversed CPI. OLS with robust standard errors. IQ 2006.

	(1)	(2)	(3)
IQ	−0.1140***	−0.1501***	−0.0526**
	[9.34]	[6.53]	[2.23]
Africa		0.3996	−0.0138
		[0.27]	[0.01]
Asia		2.5606*	1.4762
		[1.94]	[1.35]
Europe		1.3238	1.0565
		[1.01]	[0.98]
America		1.5556	1.385
		[1.13]	[1.19]
log GDP per capita			−0.7479***
			[3.07]
Democracy			−0.2007
			[0.88]
KOF index of economic globalization			−0.0336**
			[2.50]
Legal origin (French)			0.6677**
			[2.45]
Legal origin (German)			−1.6493***
			[4.08]
Legal origin (Scandinavian)			−0.7854
			[1.44]
Legal origin (socialist)			1.7243***
			[5.07]
Constant	15.5498***	17.3074***	17.7084***
	[15.96]	[6.49]	[7.30]
Observations	125	125	119
R-squared	0.40	0.49	0.8

Notes: Absolute value of *t* statistics in brackets.
* Significant at 10%.
** Significant at 5%.
*** Significant at 1%.

3. Results

3.1. Basic results

Table 1 shows the base-line regression results. The control variables display the expected signs and are statistically significant in several cases. Per capita income is statistically significant at the 1% level in column (3) and has the expected negative sign. Higher income is thus associated with less corruption. The democracy variable has the expected negative sign but does not turn out to be statistically significant. The KOF index of economic globalization is statistically significant at the 1% level and has the expected negative sign. Globalization thus reduces corruption. The estimates of the continent dummy variables do not turn out to be statistically significant in column (3), while the results in column (2) show that countries in Oceania have less corruption than countries in Asia; this effect is statistically significant at the 10% level. The coefficients of the French legal origin variable is statistically significant at the 5% level, the coefficients of the German and socialist legal origin variable are statistically significant at the 1% level and indicate that corruption is higher in countries with French and socialist legacies and lower in countries with a German legacy as compared to countries with a British legal origin. The Scandinavian legal origin variable does not turn out to be statistically significant.

Most importantly, the results reported in Table 1 show that intelligence has a negative influence on corruption. The coefficients of the 2006 IQ variable are statistically significant at the 1% level in columns (1) and (2) and at the 5% level in column (3) and indicate that if the IQ increases by one point, corruption as measured by the reversed CPI decreases by about 0.1 points. Against the background of the standard deviation of about 12 points of the IQ this is a numerically substantial effect: when the overall IQ increases by one

Table 2
Regression results. Dependent variable: reversed CPI. OLS with robust standard errors. IQ (2002) and IQ (2010).

	(1)	(2)	(3)	(4)	(5)	(6)
IQ (2002)	−0.1224***	−0.1558***	−0.0491*			
	[8.73]	[6.23]	[1.84]			
IQ (2010)				−0.1246***	−0.1422***	−0.0531**
				[7.13]	[4.72]	[2.30]
Africa		0.0585	0.1007	0.725		0.0518
		[0.05]	[0.10]	[0.46]		[0.04]
Asia		2.4408**	1.4169*	1.9912		1.4669
		[2.35]	[1.67]	[1.45]		[1.48]
Europe		0.8894	0.8415	1.2457		1.2394
		[0.82]	[0.96]	[0.92]		[1.29]
America		1.4639	1.5617*	1.6247		1.2467
		[1.37]	[1.72]	[1.12]		[1.20]
log GDP per capita			−0.8324***			−0.7607***
			[3.51]			[3.01]
Democracy			−0.2496			−0.1702
			[1.09]			[0.51]
KOF index of economic globalization			−0.0244**			−0.0591***
			[2.20]			[4.35]
Legal origin (French)			0.3551			0.8841***
			[1.28]			[2.85]
Legal origin (German)			−2.0966***			−1.3906***
			[5.34]			[3.72]
Legal origin (Scandinavian)			−1.2145***			−0.7661
			[2.90]			[1.43]
Legal origin (socialist)			1.4623***			1.6533***
			[4.05]			[3.97]
Constant	16.3133***	18.0778***	17.5763***	16.3458***	16.5724***	19.5600***
	[14.27]	[7.18]	[7.14]	[10.69]	[5.02]	[7.29]
Observations	118	118	112	95	95	89
R-squared	0.38	0.50	0.83	0.34	0.39	0.83

Notes: Absolute value of *t* statistics in brackets.
 * Significant at 10%.
 ** Significant at 5%.
 *** Significant at 1%.

standard deviation, the reversed CPI decreases by about 1.2 points, more than half a standard deviation.

3.2. Robustness checks

I have checked the robustness of the results in several ways. I have replaced the IQ data by Lynn and Vanhanen (2006) by the IQ data by Lynn and Vanhanen (2002) and Lynn and Meisenberg (2010). When using the data by Lynn and Vanhanen (2002) I have also replaced the political–economic control variables referring to the year 2005 by the political–economic control variables referring to the year 2000. The results reported in Table 2 suggest that using the data by Lynn and Vanhanen and does not change the base-line estimates.

I have also included further control variables to address possible concerns on omitted variable bias: average years of schooling (Barro and Lee, 2010), social trust (Bjørnskov, forthcoming), size of the shadow economy (Dreher and Schneider, 2010), an OECD dummy variable, trade openness (Penn World Tables 6.3) instead of the KOF index of economic globalization. Including these variables and also estimating the model with clustered standard errors by continent does not change the estimates regarding IQ. In particular, IQ outperforms average years of schooling (all results and descriptive statistics are shown in the working paper version).

Wicherts et al. have claimed that the African IQ scores in the Lynn/Vanhanen database are too low. I have therefore raised the lowest scores to 76 (Wicherts et al., 2010a) and 80 (Wicherts et al., 2010b). The results show that winsorizing the data at the levels suggested by Wicherts et al. increases the influence of IQ on corruption (all results are shown in the working paper version).

4. Conclusion

The results show that countries with high-IQ populations enjoy less corruption. This finding corresponds, for example, with the study by Rindermann and Thompson (2011), who find that IQ influences economic freedom, and with the study by Jones (2011) showing that IQ influences political institutions.

The direct positive effect of intelligence on economic growth (Jones and Schneider, 2006; Weede and Kämpf, 2002) is thus accompanied by an indirect effect working through the reduction of corruption.

Acknowledgments

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