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DOES FINANCIAL DEVELOPMENT REDUCE CORRUPTION?

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Does financial development reduce corruption?**Abstract**

I estimate the impact of bank credit to the private sector on corruption using indicators of a country's legal origin as instrumental variables to assess causality. I find that bank credit reduces corruption, with the result robust to instrumenting for bank credit and for different controls.

JEL code: G20, O5

Key words: Financial development, Corruption, Instrumental Variables

Does financial development reduce corruption?

1. Introduction

The many supposed benefits of financial deepening include the role that finance plays in exerting governance (Levine, 2006). This is usually illustrated with respect to the corporate sector, where banks (and other creditors) as providers of capital can monitor firms and induce them to maximize firm value to improve the efficiency with which resources are allocated. However, a recent finding by Tavares (2003) that official aid flows are associated with a reduction in corruption suggests that finance may play an important role in improving governance more generally.¹ In this paper, I show that the negative relation between aid flows and corruption appears to apply to financial development more generally. Specifically, I report results from a panel of developed and developing economies suggesting that bank credit to the private sector reduces corruption. The result is robust to instrumenting bank credit to address the issue of causality and to the inclusion of control variables that have been demonstrated to be robustly related to corruption. As many studies have shown that corruption impacts adversely on economic performance—for example, on GDP growth (Mauro, 1995), the composition of government spending (Mauro, 1998), the level of tax revenues (Tanzi and Davoodi, 2003) and poverty and income distribution (Gupta et al., 2002)—then if financial development reduces corruption, the case for liberalization to further develop the role of finance in the economy is strengthened.

2. Specification, causality and results

I present empirical results for the effect of financial development on corruption using

¹ Tavares (2003) speculates that this might reflect associated with foreign aid that limit the discretion of the recipient country's officials.

the International Country Risk Guide indicator of corruption (ICRG, 2001), which is a survey-based indicator, is used widely in the economics literature. The indicator ranges from zero (most corrupt) to ten (least corrupt) but for ease of interpretation, I reverse the scale so that higher values indicate more corruption. As in Levine et al., (2000) and Beck et al., (2000), I proxy financial development by the share of bank credit to the private sector in GDP; I also follow these authors and instrument for financial development using the La Porta et al., (1998) measures of legal origin as instrumental variables. La Porta et al. (1998) show that legal origin—whether a country’s commercial/company law derives from British, French, German, or Scandinavian law—shapes national approaches to laws concerning creditors and the efficiency with which those laws are enforced. Since finance is based on contracts, legal origins that produce and enforce laws that protect the rights of investors will do a correspondingly better job at promoting bank credit. They trace the effect of legal origin to laws and enforcement and then to the development of financial intermediaries. Since most countries obtained their legal systems through occupation and colonization, it is plausible to treat the legal origin variables as exogenous.

For the main control variables I rely on Serra (2006), who finds GDP per capita, religion, colonial heritage, and political instability to be robustly correlated with corruption. However, as the ICRG corruption index and GDP per capita are highly correlated, the inclusion of GDP per capita as a control variable risks eliminating the significance of corruption.² Accordingly, I replace per capita GDP with secondary school enrollment, which has been shown to be highly correlated with economic development (Barro and Lee, 1994). In addition, I experiment with several other controls used commonly in the corruption literature: ethno-linguistic fractionalization,

² For example, because of the high correlation between GDP per capita and governance variables La Porta et al. (1997) do not include GDP per capita as a control variable in their regressions of size of debt and equity markets on legal variables, including the rule of law.

which measures the likelihood that two citizens belong to a different ethnic or linguistic group and has been shown to be associated with negative outcomes in terms of quality of government (Alesina et al. 2003; La Porta et al, 1999); a dummy variable to indicate whether the country is an oil exporter, as natural resource rents are often viewed as associated with increased corruption (Collier and Hoeffler, 2005; Sachs and Warner, 2001); government expenditure as a share of GDP, because governments that are more involved in the economy may be more prone to corruption (Tanzi, 1998); and distance from the equator (latitude), which has been found to influence the quality of institutions (La Porta et al. 1999). The analysis is based on a data panel covering up to 107 developed and developing countries. The data are 5-year averages for the period 1984-2007, with the exception of secondary school enrollment, which is measured at the beginning of each 5-year period.³

Results of the impact of bank credit on corruption using both actual bank credit data (as a share of GDP) and instrumented bank credit are reported in Table 1. The specification includes secondary school enrollment as a control variable and successively adds controls for time, colonial heritage (English, French or Spanish), political instability, and religious denomination (Protestant, Catholic or Muslim). As can be seen, actual bank credit is negatively and significantly related to corruption in all cases with the exception of political instability as the control variable, whereas instrumented bank credit is negatively and significantly (at the 1 percent level) related to the level of corruption in all cases. The coefficients on actual and instrumented bank credit are broadly of the same magnitude, with an increase in bank credit of 1% leading to a decrease in corruption of 0.02 points out of a possible range of 10. Secondary school enrollment—the proxy for economic development—is also negatively and significantly related to the level of corruption.

³ Data on bank credit to the private sector as a share of GDP and secondary school enrollment are from the World Bank's World Development Indicators database; data on latitude, religion and legal origin are from La Porta et al. (1999); the fractionalization data is from Alesina et al. (2003); the data on colonial heritage is from Barro and Lee (1994); and the data on political instability is from Kaufmann et al. (1999).

Table 2 reports results for the ICRG corruption index using instrumented bank credit and the additional controls. In each case, instrumented bank credit is negatively and significantly related to corruption, with successive inclusion of the different controls not altering this result or the size of the coefficient on instrumented bank credit in any substantial way. Of the other variables, only secondary school enrollment and distance from the equator latitude are consistently statistically significant, both of which are associated with a reduction in corruption.

3. Conclusion

In this paper, I show that financial development—measured as bank credit to the private sector as a share of GDP—reduces corruption in a data panel of up to 107 developed and developing countries and instrumenting for financial development. The result is robust to the inclusion of a number of control variables, including those known to be correlated robustly with corruption. The result is consistent with the view that financial institutions (and other creditors) effectively monitor borrowers and induce them to improve the efficiency with which they allocate resources. It is also consistent with the recent finding that aid flows reduce corruption to the extent that such flows are associated with conditions that limit the discretion of the recipient country's officials.

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Table 1
 Bank lending and corruption (ICRG): ordinary least squares (OLS) and instrumental variables (IV) estimates with controls

	OLS	IV	Time period		Colonial Heritage		Political Instability		Religion	
			OLS	IV	OLS	IV	OLS	IV	OLS	IV
Constant	-2.7037*** █ (0.1798)	-2.7726*** █ (0.1818)	-2.5045*** █ (0.0468)	-2.5978*** █ (0.0493)	-2.3256*** █ (0.0341)	-2.4270*** █ (0.0357)	-2.6834*** █ (0.1688)	-2.7459*** █ (0.1641)	-2.4146*** █ (0.0460)	-2.5321*** █ (0.0588)
Bank lending to private sector	-0.0025** █ (0.0011)	-0.0020*** █ (0.0004)	-0.0027*** █ (0.0011)	-0.0027*** █ (0.0002)	-0.0030*** █ (0.0008)	-0.0026*** █ (0.0002)	-0.0011 █ (0.0013)	-0.0017*** █ (0.0005)	-0.0028*** █ (0.0002)	-0.0031*** █ (0.0003)
Secondary school enrollment	-0.0042*** █ (0.0013)	-0.0049*** █ (0.0008)	-0.0070*** █ (0.0012)	-0.0075*** █ (0.0007)	-0.0080*** █ (0.0011)	-0.0086*** █ (0.0006)	-0.0044* █ (0.0023)	-0.0042* █ (0.0022)	-0.0072*** █ (0.0012)	-0.0075*** █ (0.0008)
Observations	326	326	326	326	326	326	243	243	323	323
Adjusted R ²	0.020	0.018	0.108	0.107	0.110	0.107	0.139	0.140	0.100	0.101

White cross-section standard errors in parenthesis below the coefficient values. ***, **, and * indicate statistical significance at the 1, 5 and 10 percent levels, respectively. Time period includes dummies for each five-year period. The coefficients for cultural heritage, political instability, and religion are not reported to save space.

Table 2

Bank lending and corruption (ICRG): instrumental variables with period dummies and controls

	1	2	3	4	5	6	7
					Colonial Heritage	Political Instability	Religion
Constant	-2.4821*** █ (0.1165)	-2.4299*** █ (0.1160)	-1.9287*** █ (0.1803)	-1.8170*** █ (0.1728)	-1.5644*** █ (0.2367)	-2.1159*** █ (0.5048)	-2.0598*** █ (0.2701)
Bank lending to private sector	-0.0029*** █ (0.0002)	-0.0028*** █ (0.0002)	-0.0026*** █ (0.0003)	-0.0026*** █ (0.0006)	-0.0025*** █ (0.0006)	-0.0022*** █ (0.0001)	-0.0003** █ (0.0010)
Secondary school enrollment	-0.0081*** █ (0.0009)	-0.0088*** █ (0.0009)	-0.0109*** █ (0.0003)	-0.0087*** █ (0.0011)	-0.0077*** █ (0.0016)	-0.0067*** █ (0.0020)	-0.0085*** █ (0.0012)
Fractionalization	-0.1779 █ (0.1549)	-0.2779* █ (0.1631)	-0.0588 █ (0.3156)	-0.1272 █ (0.3559)	-0.1161 █ (0.3966)	-0.4966** █ (0.2024)	-0.0736 █ (0.3940)
Oil exporter		0.3367*** █ (0.0603)	0.3097 █ (0.2435)	0.2841 █ (0.2677)	0.1653 █ (0.3244)	0.3124 █ (0.3009)	0.1195 █ (0.3463)
Public expenditure			-0.0115* █ (0.0058)	-0.0087* █ (0.0049)	-0.0103* █ (0.0053)	0.0015 █ (0.0108)	-0.0020 █ (0.0057)
Latitude				-0.9716*** █ (0.2390)	-1.3385*** █ (0.1944)	-0.7368*** █ (0.2347)	-1.0712*** █ (0.2519)
Period dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	323	323	191	188	188	154	188
Adjusted R ²	0.104	0.107	0.136	0.143	0.146	0.178	0.151

Standard errors in parenthesis below the coefficient values. ***, **, and * indicate statistical significance at the 1, 5 and 10 percent levels, respectively. Time period includes dummies for each five-year period; regional, legal origin and religious dummies are described in the data appendix. Coefficients for cultural heritage, political instability and religion are not reported to save space.