The impact of corruption on financial markets

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Abstract

Purpose – The purpose of this paper is to focus specifically on the role of corruption in affecting financial markets. Recently, there are several studies that examine how one country's level of corruption might affect asset prices in other countries. The aim of this article is to summarize how corruption may affect the bond and stock markets.

Design/methodology/approach – The paper is organized as follows. Section 1 defines corruption and briefly examines the causes of corruption. Section 2 examines various measures of corruption and provides a ranking of countries. Section 3 explains how corruption may affect business and provide anecdotal evidence. Section 4 provides a summary of some empirical evidence of corruption on firm performances. Section 5 concludes.

Findings – Across international financial markets, corruption is found to be associated with higher firm's borrowing cost, lower stock valuation, and worse corporate governance.

Originality/value – This paper provides a brief summary on research related to corruption and its impact on financial markets. Anecdotal evidence has shown the disruptive effect of corruption, and theoretical literature largely confirms this effect. Empirical studies show that the cost of corruption is highly significant in many different areas of the economy. In particular, across international financial markets, corruption is found to be associated with higher borrowing cost, lower stock valuation, and worse corporate governance.

Keywords Corruption, Financial markets

Paper type Literature review

A wicked man accepts a bribe from the bosom to pervert the ways of justice. Proverbs 17:23. Diverse weights are an abomination to Jehovah; And a false balance is not good. Proverbs 20:23.

The World Bank calls corruption "the single greatest obstacle to economic and social development. It undermines development by distorting the rule of law and weakening the institutional foundation on which economic growth depends"[1]. Corruption is a serious social problem that affects all facets of a society.

Corruption has been shown to be associated with a wide variety of social and economic problems, including lower economic growth, foreign direct investment, infant mortality rate, and military spending[1]. A number of international organizations also put great emphasis on fighting corruption[2].

This paper focuses specifically on the role of corruption in affecting financial markets. Recently, there are several studies that examine how one country's level of corruption might affect asset prices in other countries. In this article, I will summarize how corruption may affect the bond and stock markets.

The rest of the paper is organized as follows. Section 1 defines corruption and briefly examines the causes of corruption. Section 2 examines various measures of corruption and provides a ranking of countries. Section 3 explains how corruption may

In this review, the author draws heavily from two earlier papers Ciochinni *et al.* (2003) and Lee and Ng (2004).

affect business and provide anecdotal evidence. Section 4 provides a summary of some empirical evidence of corruption on firm performances. Section 5 concludes.

1. Corruption: a primer
1.1. What is corruption?
Corruption is not just about bribery. Instead, corruption extends beyond bribery to include other exercises of discretionary power in the public sector. In the academic literature, corruption is often defined as the misuse of public office for private gains (Shleifer and Vishny, 1993; Klitgaard, 1991; Transparency International, 1995).

1.2. What gives rise to corruption?
In a comprehensive study, Treisman (2000) examines the relation between corruption indices and a country's historical, cultural, economic, and political characteristics. He finds that countries with lower corruption tend to be largely Protestant, former British colonies, have higher per capita income, a common law (vs civil law) legal system, a high ratio of imports to GDP, long exposure to democracy, and a unitary form of government. The direction of causality on economic development (per capita income) runs both ways. Treisman (2000) argues that these findings are broadly consistent with the theory on the expected costs and benefits of committing a corrupt act[3].

Other studies have similar findings. For example, La Porta *et al.* (1999) find that less developed countries, countries with higher Catholic or Muslim populations, and countries with French or socialist laws (in contrast to common laws), tend to have inferior measures of government performance, including higher corruption. Similarly, Rose-Ackerman (2001) shows that while the current degree of democracy is unimportant in explaining corruption, corruption does decrease after longer exposure to a democratic structure.

In sum, prior studies find that the level of corruption in a country is a function of its historical, religious, and cultural roots, and that corruption is also related to the level of economic development in the country, as well as its legal and governmental system.

2. Corruption: measurement issues
2.1. How is corruption measured?
Because corruption is inherently subjective, the measure of corruption is often a problem. Most studies use perception-based measures of corruption.

There are many polls that measure the level of corruption. These surveys are based on different criteria. Some are assessments by country risk analysts based in the home country or abroad. Some are surveys of local or expatriate businessmen. Others are surveys based on local residents. The three most popular surveys are from the Economist Intelligence Unit, International Country Risk Guide, and Transparency International's Corruption Perception Index (CPI).

Table I shows a sample of surveys on corruption that constitute the Corruption Perception Index.

Although different surveys are collected by different methods, ratings from different polls show a high degree of correspondence with each other. Treisman (2000) points out that indices of corruption that come from surveys of businessmen conducting business in a country are highly correlated with the indices of corruption that come from surveys of the citizens in these countries. Also, using these surveys, researchers find that corruption is correlated with the variety of economic and social phenomena that we mention earlier.

Source	Year	Who was surveyed?	Subject asked	Number of replies	Number of countries
Political and Economic Risk Consultancy (Asian Intelligence Issue)	1997 1998	Expatriate business executives	Extent of corruption in a way that detracts from the business environment for foreign companies	280	12
Gallup International (50th Anniversary Survey)	1997	The general public (internal)	A lot, many, few or no cases of corruption for the following groups of people: politicians, public officials, policeman, and judges	>34,000 (almost 1,000 per country)	44
Institute for Management Development (World Competitiveness Yearbook)	1996 1997 1998	Business executives in top and middle management (internal)	Improper practices (such as bribing or corruption) in the public sphere	3,102 2,515 4,314	46
World Economic Forum and Harvard Institute for International Development (Global Competitiveness Survey)	1996 1997 1998	Business executives (internal)	Irregular, additional payments connected with import and export permits, business licenses, exchange controls, tax assessments, police protection, or loan application	1,537 2,778 Ca. 3,500	40 56 68
Political Risk Services (International Country Risk Guide)	1998	Assessment by staff (expatriate)	Assessment of "corruption in government"	–	135
World Bank, World Development Report (Private Sector Survey)	1997	Business executives (internal)	Irregular, additional payments are common and represent an obstacle to doing business	>3,500	73
Economist Intelligence Unit (Country Risk Service and Country Forecast)	1998	Assessment by staff (expatriate)	Assessment of the pervasiveness of corruption among politicians and civil servants	–	115

Table I.
Sample surveys on
corruption

Source: Transparency International website

2.2. Countries' corruption ranking

Table II shows the ranking of corruption of different countries based on the Transparency International survey in 2003.

Countries with the lowest corruption are Finland, Iceland, Denmark, and New Zealand, while countries with the highest corruption are Haiti, Nigeria, and Bangladesh. The USA ranks 18th in the list of 133 countries.

Country rank	Country	CPI 2003 score	Surveys used	Standard deviation	High-low range	Impact of corruption on financial markets
1	Finland	9.7	8	0.3	9.2-10.0	
2	Iceland	9.6	7	0.3	9.2-10.0	
3	Denmark	9.5	9	0.4	8.8-9.9	
	New Zealand	9.5	8	0.2	9.2-9.6	825
5	Singapore	9.4	12	0.1	9.2-9.5	
6	Sweden	9.3	11	0.2	8.8-9.6	
7	Netherlands	8.9	9	0.3	8.5-9.3	
8	Australia	8.8	12	0.9	6.7-9.5	
	Norway	8.8	8	0.5	8.0-9.3	
	Switzerland	8.8	9	0.8	6.9-9.4	
11	Canada	8.7	12	0.9	6.5-9.4	
	Luxembourg	8.7	6	0.4	8.0-9.2	
	United Kingdom	8.7	13	0.5	7.8-9.2	
14	Austria	8.0	9	0.7	7.3-9.3	
	Hong Kong	8.0	11	1.1	5.6-9.3	
16	Germany	7.7	11	1.2	4.9-9.2	
17	Belgium	7.6	9	0.9	6.6-9.2	
18	Ireland	7.5	9	0.7	6.5-8.8	
	USA	7.5	13	1.2	4.9-9.2	
20	Chile	7.4	12	0.9	5.6-8.8	
21	Israel	7.0	10	1.2	4.7-8.1	
	Japan	7.0	13	1.1	5.5-8.8	
23	France	6.9	12	1.1	4.8-9.0	
	Spain	6.9	11	0.8	5.2-7.8	
25	Portugal	6.6	9	1.2	4.9-8.1	
26	Oman	6.3	4	0.9	5.5-7.3	
27	Bahrain	6.1	3	1.1	5.5-7.4	
	Cyprus	6.1	3	1.6	4.7-7.8	
29	Slovenia	5.9	12	1.2	4.7-8.8	
30	Botswana	5.7	6	0.9	4.7-7.3	
	Taiwan	5.7	13	1.0	3.6-7.8	
32	Qatar	5.6	3	0.1	5.5-5.7	
33	Estonia	5.5	12	0.6	4.7-6.6	
	Uruguay	5.5	7	1.1	4.1-7.4	
35	Italy	5.3	11	1.1	3.3-7.3	
	Kuwait	5.3	4	1.7	3.3-7.4	
37	Malaysia	5.2	13	1.1	3.6-8.0	
	United Arab Emirates	5.2	3	0.5	4.6-5.6	
39	Tunisia	4.9	6	0.7	3.6-5.6	
40	Hungary	4.8	13	0.6	4.0-5.6	
41	Lithuania	4.7	10	1.6	3.0-7.7	
	Namibia	4.7	6	1.3	3.6-6.6	
43	Cuba	4.6	3	1.0	3.6-5.5	
	Jordan	4.6	7	1.1	3.6-6.5	
	Trinidad and Tobago	4.6	6	1.3	3.4-6.9	
46	Belize	4.5	3	0.9	3.6-5.5	
	Saudi Arabia	4.5	4	2.0	2.8-7.4	
48	Mauritius	4.4	5	0.7	3.6-5.5	
	South Africa	4.4	12	0.6	3.6-5.5	
50	Costa Rica	4.3	8	0.7	3.5-5.5	**Table II.** Corruption score of
	Greece	4.3	9	0.8	3.7-5.6	different countries

(Continued)

Country rank	Country	CPI 2003 score	Surveys used	Standard deviation	High-low range
	South Korea	4.3	12	1.0	2.0-5.6
53	Belarus	4.2	5	1.8	2.0-5.8
54	Brazil	3.9	12	0.5	3.3-4.7
	Bulgaria	3.9	10	0.9	2.8-5.7
	Czech Republic	3.9	12	0.9	2.6-5.6
57	Jamaica	3.8	5	0.4	3.3-4.3
	Latvia	3.8	7	0.4	3.4-4.7
59	Colombia	3.7	11	0.5	2.7-4.4
	Croatia	3.7	8	0.6	2.6-4.7
	El Salvador	3.7	7	1.5	2.0-6.3
	Peru	3.7	9	0.6	2.7-4.9
	Slovakia	3.7	11	0.7	2.9-4.7
64	Mexico	3.6	12	0.6	2.4-4.9
	Poland	3.6	14	1.1	2.4-5.6
66	China	3.4	13	1.0	2.0-5.5
	Panama	3.4	7	0.8	2.7-5.0
	Sri Lanka	3.4	7	0.7	2.4-4.4
	Syria	3.4	4	1.3	2.0-5.0
70	Bosnia and Herzegovina	3.3	6	0.7	2.2-3.9
	Dominican Republic	3.3	6	0.4	2.7-3.8
	Egypt	3.3	9	1.3	1.8-5.3
	Ghana	3.3	6	0.9	2.7-5.0
	Morocco	3.3	5	1.3	2.4-5.5
	Thailand	3.3	13	0.9	1.4-4.4
76	Senegal	3.2	6	1.2	2.2-5.5
77	Turkey	3.1	14	0.9	1.8-5.4
78	Armenia	3.0	5	0.8	2.2-4.1
	Iran	3.0	4	1.0	1.5-3.6
	Lebanon	3.0	4	0.8	2.1-3.6
	Mali	3.0	3	1.8	1.4-5.0
	Palestine	3.0	3	1.2	2.0-4.3
83	India	2.8	14	0.4	2.1-3.6
	Malawi	2.8	4	1.2	2.0-4.4
	Romania	2.8	12	1.0	1.6-5.0
86	Mozambique	2.7	5	0.7	2.0-3.6
	Russia	2.7	16	0.8	1.4-4.9
88	Algeria	2.6	4	0.5	2.0-3.0
	Madagascar	2.6	3	1.8	1.2-4.7
	Nicaragua	2.6	7	0.5	2.0-3.3
	Yemen	2.6	4	0.7	2.0-3.4
92	Albania	2.5	5	0.6	1.9-3.2
	Argentina	2.5	12	0.5	1.6-3.2
	Ethiopia	2.5	5	0.8	1.5-3.6
	Gambia	2.5	4	0.9	1.5-3.6
	Pakistan	2.5	7	0.9	1.5-3.9
	Philippines	2.5	12	0.5	1.6-3.6
	Tanzania	2.5	6	0.6	2.0-3.3
	Zambia	2.5	5	0.6	2.0-3.3
100	Guatemala	2.4	8	0.6	1.5-3.4
	Kazakhstan	2.4	7	0.9	1.6-3.8
	Moldova	2.4	5	0.8	1.6-3.6

Table II.

(Continued)

Country rank	Country	CPI 2003 score	Surveys used	Standard deviation	High-low range
	Uzbekistan	2.4	6	0.5	2.0-3.3
	Venezuela	2.4	12	0.5	1.4-3.1
	Vietnam	2.4	8	0.8	1.4-3.6
106	Bolivia	2.3	6	0.4	1.9-2.9
	Honduras	2.3	7	0.6	1.4-3.3
	Macedonia	2.3	5	0.3	2.0-2.7
	Serbia and Montenegro	2.3	5	0.5	2.0-3.2
	Sudan	2.3	4	0.3	2.0-2.7
	Ukraine	2.3	10	0.6	1.6-3.8
	Zimbabwe	2.3	7	0.3	2.0-2.7
113	Congo, Republic of the	2.2	3	0.5	2.0-2.8
	Ecuador	2.2	8	0.3	1.8-2.6
	Iraq	2.2	3	1.1	1.2-3.4
	Sierra Leone	2.2	3	0.5	2.0-2.8
	Uganda	2.2	6	0.7	1.8-3.5
118	Cote d'Ivoire	2.1	5	0.5	1.5-2.7
	Kyrgyzstan	2.1	5	0.4	1.6-2.7
	Libya	2.1	3	0.5	1.7-2.7
	Papua New Guinea	2.1	3	0.6	1.5-2.7
122	Indonesia	1.9	13	0.5	0.7-2.9
	Kenya	1.9	7	0.3	1.5-2.4
124	Angola	1.8	3	0.3	1.4-2.0
	Azerbaijan	1.8	7	0.3	1.4-2.3
	Cameroon	1.8	5	0.2	1.4-2.0
	Georgia	1.8	6	0.7	0.9-2.8
	Tajikistan	1.8	3	0.3	1.5-2.0
129	Myanmar	1.6	3	0.3	1.4-2.0
	Paraguay	1.6	6	0.3	1.2-2.0
131	Haiti	1.5	5	0.6	0.7-2.3
132	Nigeria	1.4	9	0.4	0.9-2.0
133	Bangladesh	1.3	8	0.7	0.3-2.2

Source: Transparency International Corruption Perception Index (2003)

Table II.

3. How does corruption affect business in general?
3.1. Why does corruption affect business?
In theory, bureaucratic corruption may not necessarily be bad for business. As Ehrlich
and Lui (1999) point out, "Corrupt behavior by itself need not impose a net social cost
since it involves transfer payments from bribe payers to bureaucrats. Moreover, bribes
can ameliorate the deadweight cost of government intervention by directing scarce
resources toward higher bidders (Leff, 1964; Lui, 1985)." This early stream of
theoretical work suggests that corruption might serve to "grease the wheels of
commerce", thus reducing transaction cost and lowering the cost of capital (e.g. see
Leff, 1964; Lui, 1985; Kaufmann and Wei, 1999; Aidt, 2003 offer rebuttals).

   This efficiency-enhancing view of corruption has found little empirical support and
has largely fallen out of favor (Aidt, 2003). The existence of corruption creates the
wrong set of incentives in the society. As Ehrlich and Lui (1999) comment, "... since
bureaucratic power holds the promise of economic rents through corruption,
individuals have an incentive to compete over the privilege of becoming bureaucrats.

Existing literature has referred to such activity as "rent seeking" (e.g. Krueger, 1974). It is here called investment in political capital. Such investment consumes economic resources that could otherwise be used for production or investment in human capital. This is the source of the social loss from corruption". Along the same line, Murphy *et al.* (1991, p. 93) argue that rent seeking distorts the allocation of talent away from entrepreneurship and innovation, thereby reducing growth.

Corruption is sometimes considered to be similar to taxation. However, as pointed out by Shleifer and Vishny (1993), corruption and taxation are distinct because of the following points.

First, corruption is illegal, and it must therefore be kept secret. This creates many agency problems in the economy. Government officials who are bribe-takers will try to set up hurdles so that they can extract more bribery. Managers might participate in projects that they otherwise would not, just so they can accept bribes and still keep them secret. These create waste and increase transaction costs in the economy.

Shleifer and Vishny (1993) illustrate this behavior with the example of a bottle-maker factory in Mozambique: To mechanize the process of labeling bottles, the factory manager can apply for aid money and use it either to purchase a simple machine that does the job and costs only $10,000, or buy a $100,000 machine that not only mechanizes the existing process, but also prints the labels in 16 colors and different shapes, adaptable to different bottles. Shleifer and Vishny (1993) point out that "the demand for equipment much fancier than the factory appeared to need seems irrational until one realizes that buying a fancier machine offered the manager and ministry officials much better opportunities for corruption". To purchase a generic machine, the manager would have to follow international donors' guidelines and consider several offers. There would be very little chance of collecting bribe. If he got a unique machine, on the other hand, he would not have to solicit alternative bids. The supplier in turn would then be happy to kick back some of the profits to the manager and his ministerial counterpart.

Second, there is no limit to the number of bribes that a business might have to make in order to operate. Shleifer and Vishny (1993) point out, for example, that foreigners desiring to operate in Russia often must bribe all the foreign trade offices, including the foreign investment office, the appropriate industry ministry, the finance office, the executive branch of the local government, the legislative branch, the central bank, the property right bureau, etc. This list does not even include the multiple levels of officials in each organization that the foreigners might need to bribe to do business there.

In summary, the rent-seeking incentives, secrecy, and uncertainty associated with corruption make it costly for business. Other theoretical literature also point to various potential costs of corruption. It is beyond the scope of this paper to provide a comprehensive survey on the theoretical literature on corruption; interested readers are referred to Aidt (2003).

3.2. Anecdotal evidence
An Asian Development Bank report has listed the following anecdotal evidence on "the effect of corruption on government[4].

- Some estimates calculate that as much as $30 billion in aid for Africa has ended up in foreign bank accounts. This amount is twice the annual gross domestic product (GDP) of Ghana, Kenya, and Uganda combined[5].

- Over the last 20 years, Philippines is estimated to have lost $48 billion due to corruption, surpassing its entire foreign debt of $40.6 billion[6].

- Studies of the impact of corruption upon government procurement policies in several Asian countries reveal that these governments have paid from 20 to 100 per cent more for goods and services than they would have otherwise[7].
- In Uganda, bribes increase companies' operating cost by about 8 per cent[8].

The anecdotal evidence presented above supports the fact that governments and businesses are hurt by corruption. However, since corruption is very secretive, it is difficult to provide accurate estimates on the costs to the government in a particular country. The pervasive nature of corruption makes it even harder. Because corruption is associated with a variety of other social and economic ills – including anemic economic growth, reduced foreign investment, reduced shareholder protection, and lower healthcare and education spending – its direct impact on resource allocation in society, and various measures of economic well-being, can be difficult to isolate. Because of these reasons, careful empirical studies to assess the cost of corruption are needed.

4. Empirical evidence on the adverse effect of corruption on financial markets

Recent empirical studies have examined the effect of corruption on financial markets. Asset prices are forward-looking and market-driven. Hence they are good barometers for assessing the cost of corruption from the investors' points of view. A number of empirical studies examine the effects of corruption on financial markets. In particular, Ciocchini et al. (2003) looks at bond spread as a proxy for borrowing cost, while Fisman (1991) and Lee and Ng (2005) examine stock market valuation.

4.1. Borrowing costs

Ciocchini et al. (2003) show that corruption increase borrowing costs for governments and firms in emerging markets. This paper focuses specifically on the role of corruption in determining the price of emerging market bonds sold on the global bond market. Ciocchini et al. (2003) use the launch spreads of these bonds, which refer to the difference between the initial yield of these bonds and the rate commanded by a risk-free bond of the same maturity. The spread of these bonds reflects the higher default probability associated with emerging market debt. They are in effect studying the relationship between corruption and the perceived likelihood that a firm or government will default on its debt.

Table III shows the average corruption scores for developing countries that have issued bonds in the 1990s and the average corporate and sovereign bond spreads in these countries. Univariate regression in Table IV shows that the average bond spreads increase with corruption in that country. This preliminary result shows that corruption increases when a country's borrowing cost increases.

To investigate this relationship further, Ciocchini et al. (2003) do two things. First, they control for other variables that affect bond spreads in a multivariate setup. Second, they take into the account the fact that the decision to launch a bond is endogenous. Countries and firms that choose to issue debt will differ systematically from those that do not. Therefore, they control for the likelihood of new issues by different classes of borrowers. The empirical strategy consists of estimating the impact of corruption on spreads, first by ordinary least squares (OLS) and then by means of the Heckman procedure, which controls for the possible sample selection problem.

Country	Average corruption score	Average spread	Average sovereign spread	Average private spread
Pakistan	1.8	322	322	
Kazakhstan	2.3	791	791	
Russia	2.4	468	515	429
Venezuela	2.5	245	253	238
Indonesia	2.5	287	111	290
Croatia	2.7	340	340	
India	2.7	195		195
Ukraine	2.8	1311	1311	
China	2.8	209	116	273
Colombia	2.9	364	261	614
México	3.1	364	303	392
Thailand	3.1	133	30	148
Philippines	3.1	287	304	276
Argentina	3.3	414	405	425
Egypt	3.3	646		646
Brazil	3.4	419	388	422
Latvia	3.4	278	278	
Romania	3.4	300	300	300
Turkey	3.5	418	412	438
Lithuania	3.8	413	413	
Jamaica	3.8	525	525	
Slovak Republic	3.8	379		440
El Salvador	3.9	500	500	
Morocco	4.1	55	55	
Uruguay	4.3	234	212	279
Peru	4.5	315		315
Korea	4.6	72	350	69
Hungary	4.6	167	158	375
Poland	4.7	323	85	365
Czech Republic	4.8	118		118
Tunisia	5.0	280	280	
Taiwan	5.0	75		75
Malaysia	5.1	133	330	118
South Africa	5.2	224	224	
Costa Rica	5.4	323	323	
Estonia	5.7	205		205
Slovenia	6.0	86	86	
Chile	6.7	154	175	153
Hong Kong	7.1	125		125
Singapore	9.0	94	371	94
Total	3.7	298	347	279

Source: Ciochinni *et al.* (2003)

Table III.
Number of bond issues, average corruption score, and average spreads (for hard-currency denominated bonds), by country

Table V presents the estimation results for the spreads. They use a set of control variables that consist of bond characteristics (maturity of the bond, principal amount, fixed rate bond dummy, dummies for the currency of issue, and a private placement dummy), issuer characteristics (dummies proxying for the region of the issuers, dummies for government and private bonds, dummies for the industrial classification of the issuer), and country characteristics (ratio of debt to GDP, dummy for debt rescheduling, real GDP growth, export growth variability, reserves to bank debt,

domestic credit to GDP, debt service to exports and the sovereign credit rating
residual), as well as the global interest rate and yield curve. Even after these controls,
the coefficient on the corruption score is negative and significant. In the paper, the
same result is confirmed by various robustness checks based on OLS regression,
different regions, and different time periods.

The main finding is that global investors require a substantially greater return on
debt when the issuer is in a more corrupt country. This is true even after controlling for
other factors that determine default risk. Their estimation includes macroeconomic
variables, such as GDP growth and external debt, as well as a credit rating score from
Institutional Investor that captures political risk. Corruption plays an important role in
determining default risk even apart from its impact on other types of economic
performance[9].

They estimate that a decrease in the level of corruption from that of countries such
as Ukraine to that of Turkey or Lithuania is associated with about a 20 per cent
decrease in spreads.

This study shows that higher corruption increases borrowing costs on the
international market for both government and firms in these countries.

4.2. Stock prices
As suggested above, corruption can affect equity value drivers like a firm's long-term
growth. Fisman (1991) examines the value of political connection in Indonesia by
examining the stock prices of companies that have different degrees of political
connections. He relates the news on the health of the former Indonesian President
Suharto to the stock returns of these companies. He shows that bad news on Suharto's
health lead to reliably lower stock returns of the companies with extensive political
connections than the independent companies.

In addition to the evidence in Indonesia, there is also evidence that corruption
affects stock prices in other countries. A recent paper that investigates the cost of
corruption on a cross-country level is Lee and Ng (2004).

Lee and Ng (2004) document the empirical relationship between the level of
corruption within a country and the valuation of its corporations to shareholders.
Specifically, they use firm-level data from 43 countries to evaluate the empirical
relationship between corruption and international corporate values. They find that
firms from more corrupt countries trade at significantly lower market multiples, after
controlling for other factors.

	Full sample	Sovereign	Private
Corruption	−0.290	−0.135	−0.295
	(16.08)*	(2.80)*	(14.85)*
Constant	6.452	6.115	6.396
	(95.10)*	(35.64)*	(82.70)*
Observations	1,257	358	899
R^2	0.16	0.03	0.17

Note: Robust t statistics in parentheses. *significant at 1 per cent
Source: Ciocchini *et al.* (2003)

Table IV.
Univariate regression of
log spreads on the
corruption score (OLS)

	Full sample	Sovereign	Private
Amount	−0.002	0.037	−0.777
	(0.04)	(0.90)	(4.03)*
Maturity	0.000	0.005	−0.000
	(0.17)	(2.01)**	(0.05)
Private placement	0.109	−0.139	0.199
	(2.98)*	(2.47)**	(4.59)*
Fixed	0.393	0.277	0.472
	(7.87)*	(2.59)*	(7.92)*
Log interest rate	−1.136	−1.157	−1.088
	(3.79)*	(3.04)*	(2.82)*
Yield curve	−0.078	−0.101	−0.041
	(1.66)	(1.63)	(0.69)
Credit rating residual	−0.049	−0.062	−0.046
	(16.82)*	(10.51)*	(13.39)*
Corruption	−0.169	−0.230	−0.191
	(9.14)*	(6.07)*	(8.32)*
External debt/GDP	0.960	0.591	0.992
	(7.16)*	(2.72)*	(5.69)*
Debt rescheduling	0.018	0.020	0.053
	(0.28)	(0.19)	(0.75)
GDP growth	−15.665	−21.679	−9.074
	(6.30)*	(6.84)*	(2.71)*
Standard deviation export growth	1.009	1.272	0.680
	(5.26)*	(5.45)*	(2.40)**
Reserves/short-term debt	−0.019	−0.021	−0.018
	(1.03)	(0.83)	(0.76)
Domestic credit/GDP	0.109	0.123	0.119
	(4.69)*	(3.04)*	(4.30)*
Latin America	0.107	0.288	0.263
	(1.61)	(3.17)*	(2.66)*
East Asia and Pacific	−0.300	−0.345	−0.147
	(3.24)*	(2.76)*	(1.12)
Private	0.039		
	(0.08)		
Constant	7.498	8.003	7.337
	(9.90)*	(9.86)*	(9.76)*
Observations	1,959	742	1,217
Uncensored obs.	1,175	326	849
Censored obs.	784	416	368
χ^2	1,947.89	479.19	1,574.50
$P > \chi^2$	0.00	0.00	0.00
Lambda	−0.44	−0.50	−0.16
s.e. lambda	0.05	0.04	0.09
Rho	−0.73	−0.94	−0.28
$P > \chi^2$ (rho = 0)	0.00	0.00	0.09

Notes: Absolute value of z statistics in parentheses. *significant at 5 per cent; *significant at 1 per cent. Dummies for currencies, supranational entity, and production sectors included, but not reported. χ^2 is a Wald test for the null hypothesis that all the coefficients, except the constant, are jointly equal to zero. $P > \chi^2$ (rho = 0) is a likelihood ratio test for independence between the spread and issue equations (null hypothesis of no selectivity effect). See Tables 15-17 for a definition of the variables
Source: Ciocchini *et al.* (2003)

Table V.
Determinants of log spreads (Heckman)

They document that corruption significantly decreases equity values after controlling for many other firm- and country-level control factors. The control factors they consider include firm level control variables like industry PB mean, return on equity, research and development, analysts' forecast growth, dividend payout, leverage, and country control variables like GDP growth, inflation, import-GDP ratio, and GDP per capita. Lee and Ng find that firms from more corrupt countries trade at significantly lower market multiples, after controlling for these factors. They conclude that corruption has significant economic consequences for shareholder value.

One potential reason why corruption may affect stock valuation has to do with corporate governance. As corruption increases, regulatory oversight is weakened and corporate governance may become worse. This leads to higher default risk for bonds and lower valuation for stocks.

To investigate this hypothesis, Ng and Qian (2004) examine the impact of corruption on corporate governance. They build a model demonstrating that an insider has more incentives to expropriate an outsider if bribery reduces the probability that the insider will get caught. As a result, corporate governance will be worse in more corrupted countries. They use firm-level corporate governance from two different surveys (i.e. those of Credit Lyonnais Securities Asia and Standard and Poor) and examine how country-level corruption data would affect corporate governance in different firms. The empirical analysis suggests that corruption has a significant impact on both corporate governance and a firm's valuation. The quality of corporate governance in more corrupt countries tends to be worse, and firms are accordingly traded at lower valuation multiples (PB).

Another reason why corruption may affect stock price has to do with the behavior of foreign investor. Gelos and Wei (2006) show that lower country transparency is associated with lower investment from international funds. They also find that during financial crises, international funds flee non-transparent countries by a greater amount than their transparent counterparts. Given the link between secrecy and corruption mentioned earlier, it seems that corrupted countries will receive less investment from foreign investors.

5. Conclusions
This paper provides a brief summary on research related to corruption and its impact on financial markets. Anecdotal evidence has shown the disruptive effect of corruption, and theoretical literature largely confirms this effect. Empirical studies show that the cost of corruption is highly significant in many different areas of the economy. In particular, across international financial markets, corruption is found to be associated with higher borrowing cost, lower stock valuation, and worse corporate governance.

Notes
1. Mauro (1995) shows that corruption leads to lower levels of investment and growth. Wei (1997) finds that corrupted countries attract less foreign direct investment. Gupta *et al.* (2001) find corruption to be correlated with higher child mortality and student dropout rates. Other studies find lower tax revenue (Haque and Sahay, 1996; Tanzi and Davoodi, 1997), increased military spending (Gupta *et al.*, 2000), and larger unofficial economies (Johnson *et al.*, 1998).

2. For example, the international monetary fund (IMF; www.imf.org), the World Bank (www.worldbank.org), the Organization for Economic Co-operation and Development

(OECD; www.oecdwash.org), Transparency International (www.transparency.org), and Community Information, Empowerment and Transparency (CIET; www.ciet.org).

3. Treisman (2000) also tests and finds a number of factors nominated by theory to be insignificant in explaining corruption. Among these are: the relative salaries of the public sector, the degree of political stability, the endowment of natural resources, the degree of state intervention in the economy (in the form of regulation or taxation), and the level of ethnic diversity.

4. Asian Development Bank (1'998).

5. Celarier (1996).

6. Philippines Government estimate, cited from *Reuter Newswire* (1997). "Philippines corruption a 'Nightmare' – Ramos", 11 January. See also *Philippine Star* (1997). "Commission on audit: P1.2 B lost to graft each year", 12 June.

7. Nakata (1978) and Wade (1982).

8. This piece of evidence is documented in Economist (2002).

9. For government debt, the most direct impact of corruption is that officials might confiscate loaned funds or other sources of government income, limiting the government's ability to meet debt obligations. Also, higher levels of corruption are associated with lower tax revenue, which would in turn lower the government's ability to repay loans. For corporations, corruption may increase the likelihood of arbitrary government actions that reduce profits and leave the firm unable to repay loans. Corruption is associated with poor legal enforcement, making it easier for a firm's management to divert resources from the firm to their own private ends, at the expense of bondholders.

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