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Local Corruption and the Global Economy

Shang-Jin Wei*

Corruption, like cockroaches, has co-existed with human society for a long time. Its role in economic development is controversial. According to Samuel P. Huntington, the distinguished Harvard political scientist, "[i]n terms of economic growth, the only thing worse than a society with a rigid, over-centralized, dishonest bureaucracy is one with a rigid, over-centralized and honest bureaucracy."¹ On the other hand, Lawrence Summers, the current Secretary of the U.S. Treasury and previously a Harvard economics professor and NBER Research Associate, said otherwise: "If you look under most banking crises, there's always a degree of fraud and abuse, and there's often a large amount of criminal activity. Corruption threatens growth and stability in many other ways as well: by discouraging business, undermining legal notions of property rights and perpetuating vested interests."²

In this report, I summarize some papers that explore different consequences of corruption, particularly its interaction with international investment and finance.³ The goal is to address a number of questions: Does corruption on balance add "grease" or "sand" to the wheels of commerce? How costly is corruption to international investors relative to the effect of a tax? And, does corruption increase the chance of a currency crisis?

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Bribery in the Economies: Grease or Sand?

Mauro conducted the first empirical study of the relationship between corruption and economic growth.⁴ Within a standard growth regression, he embedded a subjective measure of corruption across countries devised by the "in-house experts" at Business International (a consulting firm) and found that countries perceived to be more corrupt tend to grow more slowly. A potential problem with studies based on cross-country regressions, though, is that many things in a country are correlated, so it may be difficult to disentangle the effects attributable solely to corruption. For example, corruption may be highly correlated with the poor quality of public servants, a factor that may retard growth whether corruption exists or not.

One way to get around this is to examine evidence at the firm level. In what we believe is the first study of this kind, Daniel Kaufmann and I⁵ use three worldwide firm surveys to examine the "efficient grease hypothesis"; namely, that firms that pay more bribes face less red tape and have better access to public funds and bank loans (hence reducing their cost of capital). In short, we examine the hypothesis that bribery "greases the wheels" of commerce. To guide our analysis, we first derive a simple model. As the literature suggests,⁶ the "bribery-as-grease" hypothesis depends on the assumption that red tape is set exogenously. In our model, we therefore let the bureaucrat who takes the bribes also set the red tape. We distinguish between nominal bureaucratic harassment (for example, statutory tax and tariff rates, or the waiting time for a permit without bribery) and effective harassment (for example, actual tax and tariff rates, or queuing time after the firm pays a bribe).

Furthermore, we assume that different firms have different outside options because of their individual characteristics. This implies that the maximum degree of harassment tolerated also would vary across firms. For example, foreign firms would tolerate less harassment than domestic ones because they could relocate more easily to a different country. Overall, U.S. firms may tolerate the least harassment because, up until very recently, the United States was the only major source country that fined and criminalized its firms for paying bribes to foreign officials.⁷ Finally, firms dependent on more specialized inputs from the host country (for example, oil or gold) are less able to resist bribery demands from corrupt officials.

Not surprisingly, in equilibrium the bureaucrat would impose just enough nominal harassment to obtain the maximum bribes without inducing the firm to leave the country. As a consequence, nominal harassment and bribes are correlated positively across firms. But this is not the end of the story. In our model, for firms with weak outside options (and hence more willing to tolerate higher bribe demands), nominal harassment can be sufficiently high that in equilibrium across firms, *effective* harassment and bribes are correlated positively. This is in strong contrast to the efficient grease hypothesis.

The firm-level evidence that we examine comes from three sources: the Global Competitiveness Report (GCR) survey in 1995 (for its 1996 Report) of 1,537 firms in 48 countries; the GCR survey in 1996 (for its 1997 Report) of 2,827 firms in 58 countries; and the World Bank survey in 1996—in preparation for its 1997 World Development Report (WDR)—of 3,866 firms in 73 countries. The GCR

and the WDR surveys do not sample the same countries, so they complement each other. Because measures of firm-level bribes are inferred from the firms' qualitative rating of corruption in a country, it is useful to cross-validate using different surveys. We look at several proxies for effective bureaucratic harassment: extent of regulatory burden, extent of regulatory discretion, time spent by senior managers with government officials discussing changes and interpretations of laws and regulation, and cost of capital. We find that across firms, each of these measures of effective red tape is correlated positively with bribery.

Because measures of harassment and bribery are all based on subjective survey responses, the positive correlation could be attributable to response biases that are correlated positively across the survey questions. For example, assume that firms A and B face the same demand for bribery and the same degree of harassment. However, the manager in firm A likes to complain (in Yiddish, "kvetch") more about government action, and thus may report more bribery and more harassment. In this case, bribery and harassment appear positively correlated across firms in the survey answers even though in reality they shouldn't be. Our study develops a method to deal with what we label this "kvetch effect." We construct a measure of possible perception bias at the individual firm level based on the firm's rating of the provision of public goods and services that arguably are identical across firms (that is, a rating of overall infrastructure, power supply, and mail delivery). When such measures of perception bias are included in regressions of effective harassment on bribery, the co-efficients on bribery generally become smaller (suggesting the presence of the kvetch effect) but they remain positive and statistically significant.

These results are consistent with our simple model and not with the efficient grease hypothesis.

Using a unique survey of Uganda firms that includes direct information on the monetary value of bribes, Jakob Svensson⁸ has shown that bribery tends to rise with firms' profitability and to decline with reversibility of investment. His findings also are consistent with our model and our empirical findings. These results do not suggest that, in a generally corrupt environment, an individual firm necessarily can do better by paying fewer bribes. What they suggest is that measures that increase all firms' ability to resist bribe demands may not only reduce bribes but also reduce red tape. One example of such a measure is the recent OECD (Organization for Economic Cooperation and Development) Convention that criminalizes bribery in international transactions.

How Taxing Is Corruption on International Investors?

Intuitively, we think that corruption deters foreign investment. Using data on U.S. outward investment, James R. Hines, Jr.⁹ has found that U.S. direct investment in more corrupt countries grew more slowly than in other countries during 1977–82. He interpreted this as the effect of the U.S. Foreign Corrupt Practices Act (FCPA) of 1977.

However, it is possible that corruption deters investment from all source countries. Corruption is a symptom that the government is malfunctioning in many ways, which adds costs to foreign investment. Also, even if bribes are necessary, then U.S. "ingenuity" might allow firms to find substitutes for cash bribes. The Kaufmann-Wei model discussed earlier suggests that FCPA sometimes could help U.S. firms to face less red tape and bribe demands: U.S. firms credibly could say that they *cannot* pay bribes. (On the

other hand, the "speed money" exception in the FCPA for bureaucrats' "routine work" and the existence of substitutes for cash bribes might reduce U.S. firms' abilities to commit and hence raise the bribe demands that they face.) For all of these reasons, it is useful first to test if major source countries invest less in more corrupt countries, and then to examine whether U.S. firms behave differently from those of the other source countries.

It is also useful to find out the magnitude of the effect of corruption on foreign investment. Many developing countries eager to attract foreign direct investment (FDI) have placed an emphasis on cheap labor, tax incentives, and education. However, it is possible that severe local corruption may deter more FDI than what cheap labor or generous tax giveaways can bring in. Further, one useful ingredient in an effective anti-corruption reform is a public awareness campaign, for which one needs an idea of the size of investment lost to corruption.

Using data on a matrix of bilateral FDI from 14 source countries to 41 host countries, I estimate the magnitude of the negative effect of corruption relative to that of corporate income taxes.¹⁰ The corruption measures are based on perception indexes estimated by Business International, International Country Risk Group, and Transparency International. For example, on a one-to-ten scale, Mexico is perceived to be more corrupt than Singapore by between six and seven grades. I find that a worsening in the host government's corruption level from what prevails in Singapore to what prevails in Mexico has the same negative effect on inward FDI as raising the marginal tax rate by 42 percentage points. A different specification that includes zero bilateral FDI produces an even bigger estimated effect: a worsening in the host government's corruption

Level by the same extent (that is, from the level of Singapore to that of Mexico) has the same negative effect on inward FDI as raising the marginal tax rate by 50 percentage points. A possible explanation for the difference in the estimates is that severe corruption is precisely the reason that small and faraway source countries don't bother to invest in these countries. In my sample, while the U.S. firms appear to be more averse to corrupt host countries than firms in the other major source countries, the difference is not statistically significant.¹¹

Is China Exceptional?

China appears to be a puzzle. On the one hand, there is rampant corruption there. On the other hand, foreign investors appear to rush into China. Newspapers and magazines use the phrase "China fever" to describe the FDI rush or call China "the world's biggest magnet for FDI." Is China truly an exception, so corruption becomes less of a deterrent there?

Of course China is a large country, with a vast supply of cheap labor, and has been growing faster than the world average. These are reasons that Chinese inward FDI should be large in absolute terms. Taking these factors into account, I find that as far as FDI from the major source countries is concerned, there is no support for the notion that China is a "superhost" of FDI or that corruption in China has a smaller negative effect on FDI than corruption in other countries. Indeed, there is some evidence that China may even be a substantial underachiever as a host country for FDI from these countries.¹²

Does Corruption Make a Country More Vulnerable to Currency Crises?

The recent currency crises in East Asia, Russia, and Latin America have stimulated research on their causes.

On the one hand, it is common to hear the assertion that so-called crony capitalism is partly responsible for the crises (though very little systematic evidence has been presented to substantiate this). On the other hand, many economists argue that shifts in the (fragile) self-fulfilling expectations by international creditors are the real reason for the crises. To these researchers, the composition of a country's capital inflows is a very important predictor of the propensity of a country running into a currency crisis. The two most important indicators of that composition are the share of FDI in the total inflow and the ratio of short-term credit to foreign exchange reserves.

Crony capitalism and self-fulfilling expectations typically are presented as *rival* explanations. My recent research suggests that there may be a natural link between the two that has not been explored fully.¹³ In particular, corruption may increase the likelihood that a country has a composition of capital flows (in particular, reduced inward FDI and increased borrowing from foreign banks) that makes it more vulnerable to shifts in international investors' sentiments and expectations. A quick look at selected countries suggests that this hypothesis is plausible. During the early 1990s, New Zealand and Singapore had low levels of corruption and also substantially more inward FDI than foreign bank borrowing. On the other hand, Uruguay and Thailand were highly corrupt and also had substantially less FDI than foreign bank borrowing. This is consistent with the hypothesis that corruption and the composition of capital flows are connected.

Is there logic behind the nexus between local corruption and the composition of capital inflows? Corruption is at least annoying to both international banks and direct investors. However, corruption may be particularly detrimental to FDI. Rela-

tive to international bank lending, direct investment involves a higher sunk cost *ex post* and more repeated interactions with host-country government officials. This *ex post* vulnerability makes international direct investors more averse to corruption. Furthermore, the current international financial architecture is such that international bank credits stand a far better chance to be bailed out than international direct investment. Both of these reasons would affect the composition of the capital inflows into a corrupt country away from FDI and towards bank credits, hence increasing the likelihood of a future currency crisis.

Is there systematic evidence for this hypothesis beyond these anecdotes? I collected data from the Bank for International Settlement and the OECD on bilateral bank loans and bilateral FDI during 1994–6 for all country pairs for which such data are available. Consistently across several different specifications and three different measures of local corruption, I find that more corrupt countries tend to have a lower ratio of FDI to bank credit (after I control for several characteristics of the source and host countries and the source-host pairs). One can find similar, albeit weaker, evidence from the balance of payments (BOP) data across countries (as opposed to the data on bilateral FDI and bank loans). The evidence from the BOP data is weaker because it has more noise and because some of the determinants of FDI and loans are bilateral in nature. To sum up, my empirical results are consistent with the hypothesis that corruption indeed raises the probability of a currency crisis by altering the composition of a country's capital inflows.

Conclusion

While the theories may be ambiguous, the empirical evidence seems one-sided: corruption deters invest-

ment and economic growth. Furthermore, the quantitative impact of corruption is far from trivial. Its negative effect on inward FDI, for example, can easily offset a generous tax giveaway typical in developing countries. Finally, the evidence suggests that corruption also may raise the probability of a currency crisis by altering the composition of a country's capital inflows (and probably by worsening the balance sheets of domestic banks and firms) though the evidence on this awaits future research.

¹ S. P. Huntington, *Political Order in Changing Societies*, New Haven: Yale University Press, 1968, pp. 386.

² L. Summers, "Speech to the Summit of Eight," Denver, Colorado, June 10, 1997.

³ For broader surveys, see P. Bardhan, "Corruption and Development: A Review of Issues," *Journal of Economic Literature*, Vol. XXXV (September 1997), pp. 1320-46; and S. J. Wei, "Bribery in the Economies: Grease or Sand?" in *World Bank Research Observer*, forthcoming.

⁴ Mauro, *Quarterly Journal of Economics*, 1995.

⁵ D. Kaufmann and S. J. Wei, "Does 'Grease Money' Speed Up the Wheels of Commerce?" NBER Working Paper No. 7093, April 1999.

⁶ P. Bardhan, "Corruption and Development: A Review of Issues," *Journal of Economic Literature*, Vol. XXXV (September 1997), pp. 1320-46; A. Shleifer and R. W. Vishny, "Corruption," *Quarterly Journal of Economics*, 108 (August 1993), pp. 599-617.

⁷ This is a consequence of the U.S. Foreign Corrupt Practices Act (FCPA) of 1977. However, the FCPA allows firms to pay bribes to speed up the routine work that the host countries' bureaucrats would have done anyway. On February 1999, the OECD Convention on Combating Bribery in International Transactions formally took effect, which now criminalizes the firms from all OECD countries (and from nine other non-OECD signatories of the convention) for paying bribes to foreign government officials. As of the beginning of 2000, some signatory countries (for example, France and Italy) have not completed their domestic ratification process.

⁸ J. Svensson, "Who Must Pay Bribes and How Much?" unpublished World Bank Working Paper, 1999.

⁹ J. R. Hines, Jr., "Forbidden Payments: Foreign Bribery and American Business After 1977," NBER Working Paper No. 5266, September 1995.

¹⁰ S. J. Wei, "How Taxing Is Corruption on International Investors?" NBER Working Paper No. 6030, May 1997, and *Review of Economics and Statistics*, forthcoming. See also S. J. Wei, "Why Is Corruption So Much More Taxing Than Taxes? Arbitrariness Kills," NBER Working Paper No. 6255, November 1997.

¹¹ Using data from a survey of Uganda firms, R. Fisman and J. Svensson (1999) find that bribery reduces the growth rate of the firms by a three-to-one ratio versus the same amount of tax. This is a useful extension to S. J. Wei, "Why Is Corruption So Much More Taxing Than Taxes? Arbitrariness Kills," op.cit.

¹² S. J. Wei, "Foreign Direct Investment in China: Source and Consequences," in *Financial Deregulation and Integration in East Asia*, T. Ito and A. O. Krueger, eds. Chicago: University of Chicago Press, 1996; and "Can China and India Double Their Inward Foreign Direct Investment?" Harvard University and the World Bank.

¹³ S. J. Wei, "Corruption, Composition of Capital Flows, and Currency Crisis," forthcoming as an NBER Working Paper.

NBER Profile: John H. Cochrane

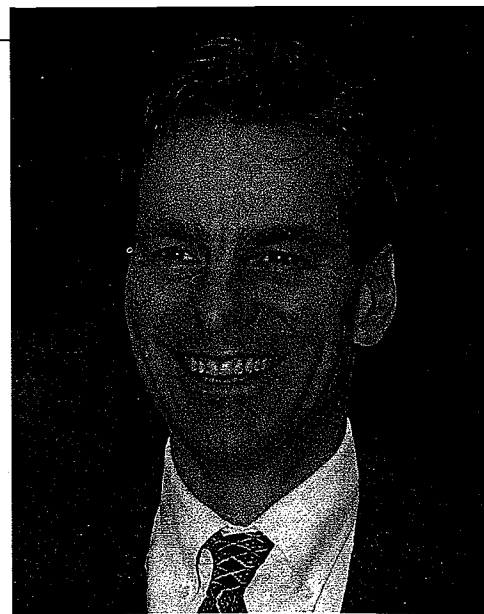
John H. Cochrane directs the NBER's Program on Asset Pricing and is the Sigmund E. Edelstone Professor of Finance and Economics at the University of Chicago. He began his affiliation with the NBER in 1988 as a Faculty Research Fellow, was promoted to Research Associate in the Asset Pricing and Economic Fluctuations and Growth Programs in 1994, and became Director of the Asset Pricing Program in 1999.

Cochrane received an S.B. in physics from MIT in 1979 and a Ph.D. in economics from the University of California, Berkeley in 1986. He joined the University of Chicago's economics department in 1985 as an assistant professor, was promoted to associate professor in 1990, and became a professor in the

University's Graduate School of Business in 1994. He received his named professorship in 1997.

In addition to his teaching and research, Cochrane is Editor of the *Journal of Political Economy* and a consultant to the research department of the Federal Reserve Bank of Chicago. Cochrane's research is split between macroeconomics and asset pricing. Most recently, he has been working on the fiscal theory of the price level, option pricing with imperfect replication, habit persistence and the predictability of returns, and a Ph.D. textbook.

Cochrane lives in the Hyde Park neighborhood near the University of Chicago with his wife, Elizabeth Fama, and children Sally, Eric, Gene, and Lydia. In rare spare time, he flies



sailplanes competitively and windsurfs in the frigid waters of Lake Michigan.