

How Economics Can Defeat Corruption

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Such tales of bribery and corruption are as old as politics. Try as we might to rid officialdom of crooks, however, extorting senators, vote-buying presidents, and judges for sale remain all too common. Whether it's the \$90,000 in cold cash that turned up a few years ago in a U.S. congressman's freezer, the "Versailles in the jungle" built with the billions embezzled by Zaire's Mobutu Sese Seko, or the bank balances of oil autocrats in Central Asia, venality and excess remain the scourge of modern global politics.

But corruption is not simply a moral concern, warranting a collective finger wagging at political leaders. It's blamed — perhaps rightly — for many of the world's ills. Corruption is widely accused of being an endemic barrier to economic development, responsible for Africa's lasting poverty and Latin

America's perennial stagnation. It is, says the conventional wisdom, what makes poor countries poor. It undermines the rule of law, distorts trade, and confers economic advantages on a privileged few. It prevents aid money from reaching disaster victims, topples buildings thanks to shoddy construction, and strangles business with the constant burden of bribes and payoffs.

Yet the truth is that we have very little idea about how corruption works or how pervasive it is. We have anecdotes about rotten individuals — a Ferdinand Marcos, a Robert Mugabe, or a Charles Taylor — but the thievery of a few thuggish rulers tells us almost nothing about the breadth and depth of global corruption. After all, when bribery and embezzlement is done right, it's invisible. Economists haven't even resolved if and when corruption is really a problem: East Asian economies have boomed in recent decades under reputedly corrupt regimes.

What little systematic evidence we do have about corruption comes from surveys administered by groups such as the World Bank and Transparency International. But we economists are skeptical of what people say about corruption (and most everything else, for that matter). It's called "cheap talk" for a reason. And we're especially suspicious of what people say when surveyed on sensitive topics such as bribery and embezzlement. There are obvious reasons to believe that responses to the question, "How much did you receive or pay last year in bribes?" are of questionable accuracy. And if we can't measure something, it's hard to know where it's really thriving, let alone figure out what to do about it.

But all is not lost. The hidden underworld of corruption often reveals itself in unexpected ways — and in situations that allow us not only to measure actual corruption but to test different methods of preventing it. All that's required, it turns out, is a little economics and a dash of ingenuity. To truly understand corruption, we must watch what people do, rather than just listen to what they

say. And as we'll see, damning evidence, like cash-filled suitcases, often leaves footprints in the data for those who know where to look.

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Economics is fundamentally about how people respond to incentives. So, if we forensic economists want to unearth corruption, we must look for situations where incentives for crooked rewards somehow translate into actions that everyone can see. In other words, by looking in the right places, we can uncover evidence of corruption staring us in the face. Only then can we take up the much more difficult challenge of determining what to do about it.

The Price of Political Connections

Whether through hefty campaign contributions or cushy jobs for former politicians, corporations are constantly accused of trying to profit through political ties. (Just think Halliburton or Russia's Gazprom). But what's the real value of these companies' connections? If you ask politicians or investors, you're likely to hear a lot of denials. To get the truth, we could ask insiders to put some money where their mouths are, making them bet some of their own cash on whether particular companies are making back-alley deals with politicians to increase their profits. In this political betting pool, raw financial self-interest would lead bettors in the know to reveal their true beliefs about corruption.

This betting pool actually bears a remarkable resemblance to the stock market, where investors (including insiders) place bets on companies based on what they think they're worth. A stock price is a measure of a company's value, which can also include political ties: If connections buy tax breaks, valuable licenses, and advantages in bidding for government contracts, then strengthening political ties should boost profits. These higher profits translate directly into higher stock prices, and conversely, removing those ties should send profits — and stock prices — tumbling.

To illustrate our approach in action, let's take a trip to Indonesia and turn the clock back to 1996. Former President Suharto, who by then had ruled the country with an iron fist for nearly 30 years, would be forced to step down a few years later. However, in 1996, Suharto's government still exercised tight control over the economy: The president decided who could get loans, log for timber, build toll roads, or import rice. In other words, he decided who would make money and how much. If ever there were a time or place where we'd expect the market to place a value on connections, this would be it.

But the aging dictator was in poor health. And because none of his kids or cronies was seen as a capable successor, any leader who followed Suharto would be unlikely to honor (or enforce) the cozy business relationships established under his rule. Any threat to Suharto would translate into a threat to the value of connections, and bets would be placed accordingly.

And indeed, Indonesian investors didn't disappoint. On July 4, 1996, the Indonesian government announced that Suharto was traveling to Germany for a health checkup. That may not sound like much, but who travels 10 time zones to get his pulse taken? Investors at the stock exchange were inundated with rumors that Suharto had already suffered a stroke or heart attack. The Jakarta composite index, an indicator of Indonesian stocks' overall performance, much like New York's Dow Jones Industrial Average, fell 2.3 percent on the day of the news.

What was merely bad for Indonesian stocks turned out to be devastating for well-connected companies. One such firm was Bimantara Citra, a media conglomerate run by Suharto's son, Bambang Trihatmodjo. In the weeks leading up to the July 4th announcement, both the Jakarta exchange and the price of Bimantara Citra bounced around a bit, not gaining or losing very much value. Then, with the market awash with rumors in the first week of July, Bimantara's stock price took a nose dive. The prospect of the company without its connections had shareholders dumping their stock and running for the exits, driving its price

down more than 10 percent in just a few days, obliterating about \$100 million of its value. (As the chart shows, Bimantara starts its steep slide even before the announcement, probably reflecting early selling by those with close ties to the Suharto family or his doctors.)

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Of course, Suharto's government was considered one of the most corrupt dictatorships of its time, so we should not make generalizations based only on its extreme example. Luckily, researchers have since created market-based measures of political connections in many other countries. Mara Faccio, an economist at Purdue University, has measured the value of political connections for nearly every country with a well-functioning stock market. She has followed the political careers of business tycoons (and the business careers of politicians), traced bloodlines to detect family ties, and read the society columns of local newspapers to track who dines with whom. Her conclusion? Close political-corporate ties exist in nearly every country. In Russia, fully 87 percent of the Moscow stock exchange's value is in companies with close Kremlin connections. Maybe this isn't such a shock in the unruly capitalism of post-Soviet Russia. More surprisingly, nearly 40 percent of the London Stock Exchange is politically connected.

But Faccio found big differences from country to country in the actual value provided by these connections. Although business-government ties are very common in Britain, the stock prices of British companies don't budge when political ties are strengthened. For example, when Rolls-Royce Chairman John Moore was appointed to the House of Lords, there was no detectable effect on Rolls-Royce's stock price. Italy, however, is true to its stereotype; insider connections matter a great deal. When Fiat boss Giovanni Agnelli was appointed to the Italian Senate, his companies' stock prices soared 3.4 percent, adding hundreds of millions of dollars in value overnight.

Sadly, the United States appears to be more like Italy than Britain. Numerous studies have found that the economic fortunes of well-connected U.S. companies mirror the political fortunes of their connections. When U.S. Sen. Jim Jeffords defected from the Republican Party and handed Senate Democrats a slim majority in 2001, Democratically connected companies benefited in the immediate aftermath. Similarly, the stock value of companies with former Republican lawmakers on their boards increased an average of 4 percent when the Supreme Court handed the 2000 election to George W. Bush, while companies with former Democratic politicians on their boards declined.

Sniffing out Smugglers

Well-connected companies may not gain much from being honest about their political ties, but when it comes to bribes, there are a few situations where people or companies do have reason to tell the truth. Before 1999, when the Organisation for Economic Co-operation and Development endorsed a global anticorruption agreement, firms in many nations, including Germany, the Netherlands, and Switzerland, were allowed to pay bribes, just as long as the money went to officials in other countries. Not only was this international bribery permitted by law, it was tax deductible as a business expense. If we could check these corporations' tax returns, their self-reported bribe payments might

just be believable. But tax returns aren't the only place that candor on corruption makes an occasional appearance. Truthful reporting of misdeeds by other corporate rogues appears elsewhere in plain sight, thanks to the ready availability of international trade data.

Consider the global trade in antiques. If traders are being honest to customs officials, the value of antiques leaving other countries and bound for the United States should be the same as the value of antiques coming into American ports of entry. But they're not — not by a long shot. A lot more antiques arrive on American shores than the world claims to be sending its way. Leaving aside the rather unlikely possibility of floating antiques factories, it appears there must be different incentives for antiques importers and exporters to report their dealings truthfully. It turns out there are, and by studying how these different incentives translate into gaps in the trade data, we can get a better handle on the nature of global smuggling.

A short lesson in the laws governing the antiques trade is in order. Most countries ban or severely restrict the export of antique art and other cultural goods. These restrictions include big-time antiquities such as Etruscan chariots and Greek statues that can fetch millions on the market, as well as cheaper trinkets like pre-Columbian pottery shards and old coins. Such objects can only be exported with special government permission, which is rarely forthcoming. So, exporters must either suffer through the bureaucratic hassle of filing for export permits, or simply take their chances with paying off a customs agent at the border. In short, the incentives to lie often outweigh the benefit of telling the truth.

Either way, there's no problem on the import side: You're probably free to bring your coins, pottery, statues, and chariots into the United States. The U.S. Department of Homeland Security explains in its handbook for art importers that violating a foreign country's export laws doesn't necessarily mean you're

violating U.S. laws. So, while it's OK to bring illegally exported items into the United States, you do have to be honest about what you report to U.S. authorities — or else. The penalties for dishonest reporting include fines and seizure of your merchandise. So on the import side, it pays to tell the truth. The mysterious gap between antiques sent and antiques received — what we'll call the smuggling gap — can be explained by these different reporting incentives. As one might expect, the smuggling gap for antiques is widest for those countries where it's easiest to bribe your way around export restrictions — Nigeria, Russia, and Syria, to name a few. But smugglers of all kinds of products leave similar fingerprints in the data that are visible to economic detectives.

Not surprisingly, smuggling gaps aren't unique to antiques traders. We've looked closely at the prints left by Hong Kong exporters trying to avoid paying Chinese import tariffs. The principle is much the same as with antiques trading, but in reverse: The free-trading economy of Hong Kong puts few restrictions on exports, so there is no incentive to mislead customs agents about what you are shipping out. But because of high tariffs on certain goods entering China, there is a great deal of deception on the receiving end. For instance, in the late 1990s, Chinese tariffs on perfume were set at 55 percent, and for tobacco products, 70 percent. By contrast, raw steel and aluminum ore, key commodities for China's burgeoning economic machine, came into the country tariff free. You can probably guess where there was a bigger gap: lots of Hong Kong perfume and tobacco went "missing" before it reached China, but not much iron or aluminum.

By looking at the data, we have been able to identify the preferred methods that smugglers use to evade Chinese customs. Think about a smuggler who wants to bring in, say, chickens that face a 20 percent tariff. He could lie about the chicken count in his shipping container, or shave downward the value of each chicken. But what if inspectors counted his chickens by weighing his container or had ready access to the market price for chickens? Our smuggler would be easily caught and punished. But suppose the tariff rate on turkeys is only 10 percent.

Our smuggler friend could simply relabel his chickens as turkeys; all the inspector would see if he opened the container is frozen poultry. In the data, this sleight of hand will show up as lots of disappearing chickens on the Chinese side, with turkeys appearing in their place. When we analyzed three years' worth of Hong Kong-China trade data, we found that similar chicken-to-turkey switches — high-tariff wooden seats becoming lower-tariff wooden seat parts, manual drills becoming machine-controlled drills — account for most of the smuggling gap.

Crucially, knowing smugglers' evasive techniques can help policymakers figure out the most effective ways of putting them out of business. Because most of the smuggling we uncovered was of the "chickens-turned-turkeys" variety, a good start would be to equate tariffs on goods that are similar enough to be mislabeled. Of course, Hong Kong smugglers will still surely come up with another way of getting their goods to the mainland. But by plugging up the easiest channel for tariff evasion, the Chinese government — and others — can force a reaction that makes smuggling less profitable and begins to chip away at this gritty underside of economic globalization.

Paving the Road to Corruption

Just as corrupt customs officials might look the other way for a slice of the action, crooked politicians and contractors have been siphoning cash from road-building projects for as long as there have been roads. Road construction requires materials such as sand and stones and lots of manual labor, all purchased locally by contractors. The Tony Sopranos of the world have figured out that there is good money to be made by over-invoicing these contracts: Double the budget for supplies, buy some cheap concrete, and split the leftover cash with your cronies in the roads ministry.

As with all other forms of corruption, we need data before we can investigate potential solutions. Here, we turn to Ben Olken, an economist at the

Massachusetts Institute of Technology, who has devised an innovative method of measuring road-building corruption. Olken wanted to figure out how much money was being stolen from a World Bank construction program in Indonesia. Under the terms of the program, 600 villages received \$9,000 each to build a local road. If Olken could determine how much was spent actually building each road, he could find out how much cash had "leaked out," most likely into the pockets of unscrupulous contractors and public officials. So, Olken sent teams of experienced engineers to all 600 villages to assess the quality of each road. The teams dug up road samples, measured pavement depth, and analyzed whether a road had been "watered down" by using cheap sand instead of expensive gravel.

As part of the study, Olken also built in metrics that tried to ensure the money was well spent. Some villages were informed ahead of time that their road project would be audited. Others were ordered to hold "town hall"-style meetings to allow villagers to discuss and monitor construction plans. (Community involvement of this kind has been held up as a cure-all in development in recent years, especially for governance woes like corruption.) There was also a third set of "control" villages, where nothing special was done at all.

In the villages with no special oversight, road funds disappeared at an average of nearly 30 percent, about \$2,700. Nearly as much was stolen in the villages with town-hall meetings. In the villages where contractors were forewarned about audits, theft dropped below 20 percent — still a sizeable loss, but a third less than appeared in the other two groups. From just this single innovative study, we can gain insights into the anticorruption efforts that will likely work best in other types of development projects.

THE CORRUPTION CURE

So far, we've documented the kingly sums channeled to Suharto's buddies, uncovered the hidden tracks of antiques smugglers, and dug into the contract padding of unscrupulous road contractors. But there is a dizzying array of

corrupt practices in the world and an even greater number of plausibly effective anticorruption policies beyond those we've examined. Is there any way to be more systematic in figuring out which policies will work in practice?

Economic principles, together with common sense, can be our most useful guides. We know that economic incentives matter, so a good starting point is to think about the carrots and sticks that motivate potentially corrupt officials. Can greater government financial transparency, perhaps through Web postings of highway contract announcements and more details on the winning bids, help curtail theft in Indonesian road building? Will lowering or linking tariffs on similar products dampen the incentives for bribe-paying traders? Or how about increasing the salaries of government officials to reduce the need to supplement their incomes with kickbacks?

We economists could wait around for the right kind of experiments to take place on their own. But governments tend to make lots of changes simultaneously: Salaries are doubled, enforcement increased, and governments made transparent all at the same time, making it hard to sort out which improvements are really the result of any specific policy. And even if changes are implemented one by one, it's a rare government that sets aside a group of employees or road contracts to serve as a bench mark, like the control villages in the Indonesian road study.

Perhaps the answer is that governments should become more experimental, quite literally, in how they deal with their corruption problems. Officials interested in rooting out corruption must think seriously about evaluating what does and does not work in the real world. Just as medical scientists experiment with different ways of treating human diseases, policymakers can experiment with different solutions to social problems. After all, abstract speculation can take us only so far. At some point, our economic theories must be tested in the chaos of real economies. And once we've understood which anticorruption approaches work — whether higher salaries, government transparency, stricter

punishments, or all of the above — policymakers can start to work to end corruption systematically. If they do, they may just find that economics — armed with a little creativity — can make corruption a little less common.

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Not surprisingly, smuggling gaps aren't unique to antiques traders. We've looked closely at the prints left by Hong Kong exporters trying to avoid paying Chinese import tariffs. The principle is much the same as with antiques trading, but in reverse: The free-trading economy of Hong Kong puts few restrictions on exports, so there is no incentive to mislead customs agents about what you are shipping out. But because of high tariffs on certain goods entering China, there is a great deal of deception on the receiving end. For instance, in the late 1990s, Chinese tariffs on perfume were set at 55 percent, and for tobacco products, 70 percent. By contrast, raw steel and aluminum ore, key commodities for China's burgeoning economic machine, came into the country tariff free. You can probably guess where there was a bigger gap: lots of Hong Kong perfume and tobacco went "missing" before it reached China, but not much iron or aluminum.

By looking at the data, we have been able to identify the preferred methods that smugglers use to evade Chinese customs. Think about a smuggler who wants to bring in, say, chickens that face a 20 percent tariff. He could lie about the chicken count in his shipping container, or shave downward the value of each chicken. But what if inspectors counted his chickens by weighing his container or had ready access to the market price for chickens? Our smuggler would be easily caught and punished. But suppose the tariff rate on turkeys is only 10 percent.

Our smuggler friend could simply relabel his chickens as turkeys; all the inspector would see if he opened the container is frozen poultry. In the data, this sleight of hand will show up as lots of disappearing chickens on the Chinese side, with turkeys appearing in their place. When we analyzed three years' worth of Hong Kong-China trade data, we found that similar chicken-to-turkey switches — high-tariff wooden seats becoming lower-tariff wooden seat parts, manual drills becoming machine-controlled drills — account for most of the smuggling gap.

Crucially, knowing smugglers' evasive techniques can help policymakers figure out the most effective ways of putting them out of business. Because most of the smuggling we uncovered was of the "chickens-turned-turkeys" variety, a good start would be to equate tariffs on goods that are similar enough to be mislabeled. Of course, Hong Kong smugglers will still surely come up with another way of getting their goods to the mainland. But by plugging up the easiest channel for tariff evasion, the Chinese government — and others — can force a reaction that makes smuggling less profitable and begins to chip away at this gritty underside of economic globalization.

Paving the Road to Corruption

Just as corrupt customs officials might look the other way for a slice of the action, crooked politicians and contractors have been siphoning cash from road-building projects for as long as there have been roads. Road construction requires materials such as sand and stones and lots of manual labor, all purchased locally by contractors. The Tony Sopranos of the world have figured out that there is good money to be made by over-invoicing these contracts: Double the budget for supplies, buy some cheap concrete, and split the leftover cash with your cronies in the roads ministry.

As with all other forms of corruption, we need data before we can investigate potential solutions. Here, we turn to Ben Olken, an economist at the

Massachusetts Institute of Technology, who has devised an innovative method of measuring road-building corruption. Olken wanted to figure out how much money was being stolen from a World Bank construction program in Indonesia. Under the terms of the program, 600 villages received \$9,000 each to build a local road. If Olken could determine how much was spent actually building each road, he could find out how much cash had "leaked out," most likely into the pockets of unscrupulous contractors and public officials. So, Olken sent teams of experienced engineers to all 600 villages to assess the quality of each road. The teams dug up road samples, measured pavement depth, and analyzed whether a road had been "watered down" by using cheap sand instead of expensive gravel.

As part of the study, Olken also built in metrics that tried to ensure the money was well spent. Some villages were informed ahead of time that their road project would be audited. Others were ordered to hold "town hall"-style meetings to allow villagers to discuss and monitor construction plans. (Community involvement of this kind has been held up as a cure-all in development in recent years, especially for governance woes like corruption.) There was also a third set of "control" villages, where nothing special was done at all.

In the villages with no special oversight, road funds disappeared at an average of nearly 30 percent, about \$2,700. Nearly as much was stolen in the villages with town-hall meetings. In the villages where contractors were forewarned about audits, theft dropped below 20 percent — still a sizeable loss, but a third less than appeared in the other two groups. From just this single innovative study, we can gain insights into the anticorruption efforts that will likely work best in other types of development projects.

THE CORRUPTION CURE

So far, we've documented the kingly sums channeled to Suharto's buddies, uncovered the hidden tracks of antiques smugglers, and dug into the contract padding of unscrupulous road contractors. But there is a dizzying array of

corrupt practices in the world and an even greater number of plausibly effective anticorruption policies beyond those we've examined. Is there any way to be more systematic in figuring out which policies will work in practice?

Economic principles, together with common sense, can be our most useful guides. We know that economic incentives matter, so a good starting point is to think about the carrots and sticks that motivate potentially corrupt officials. Can greater government financial transparency, perhaps through Web postings of highway contract announcements and more details on the winning bids, help curtail theft in Indonesian road building? Will lowering or linking tariffs on similar products dampen the incentives for bribe-paying traders? Or how about increasing the salaries of government officials to reduce the need to supplement their incomes with kickbacks?

We economists could wait around for the right kind of experiments to take place on their own. But governments tend to make lots of changes simultaneously: Salaries are doubled, enforcement increased, and governments made transparent all at the same time, making it hard to sort out which improvements are really the result of any specific policy. And even if changes are implemented one by one, it's a rare government that sets aside a group of employees or road contracts to serve as a bench mark, like the control villages in the Indonesian road study.

Perhaps the answer is that governments should become more experimental, quite literally, in how they deal with their corruption problems. Officials interested in rooting out corruption must think seriously about evaluating what does and does not work in the real world. Just as medical scientists experiment with different ways of treating human diseases, policymakers can experiment with different solutions to social problems. After all, abstract speculation can take us only so far. At some point, our economic theories must be tested in the chaos of real economies. And once we've understood which anticorruption approaches work — whether higher salaries, government transparency, stricter

punishments, or all of the above — policymakers can start to work to end corruption systematically. If they do, they may just find that economics — armed with a little creativity — can make corruption a little less common.

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