WHY SOME COUNTRIES THRIVE DESPITE CORRUPTION

The Role of Trust on the Corruption-Efficiency Relationship

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ABSTRACT

While it is widely accepted that corruption negatively affects economic growth, why some countries achieve rapid growth under rampant corruption remains a puzzle. We shed light on this issue by examining the role of trust in the corruption-efficiency relationship. We argue that in countries with a relatively high level of trust, corruption tends to be more "efficiency enhancing" than corruption in countries with a relatively low level of trust, which tends to be more "predatory" and thus, inefficient. To illustrate our arguments, we first conduct a qualitative comparative case study of China and the Philippines. We then further subject our ideas to a quantitative test using a pooled data set of 65 countries in two time periods. Both our case study and statistical test support our general hypothesis that trust mitigates the negative effect of corruption on economic growth.

Keywords: Corruption, trust, social network, economic growth

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INTRODUCTION

Corruption is a global issue that transcends national boundaries. Governments of virtually all countries are trying to eliminate it, either sincerely or at least nominally. It is commonly believed that corruption distorts the allocation of resources by diverting much needed capital for economic development to corrupt officials' pockets (Svensson, 2003). Thus a high-level corruption in a country is detrimental to its economic growth.

However, empirical evidence for this relationship seems to be mixed (Svensson, 2003). For example, a visual examination of data on corruption and economic performance across countries provides no clear relationship between these two variables. On the one hand, if we make a simple plot (Figure 1) to view the relationship between the level of economic development measured by income per capita and perceived corruption level across countries, the negative relationship is quite strong: poor countries tend to be corrupt (Transparency International, 2007; World Bank, 2007).[1] On the other hand, if we examine the relationship between perceived corruption level and economic growth rate across countries, we will get an interesting and mixed picture: it seems that growth rates diverge more for countries with high-level corruption. In other words, while many highly corrupt countries have low economic growth rates, there are countries that have achieved rapid economic growth under rampant governmental corruption (Figure 2). This at least suggests that some countries may achieve high economic performance despite high corruption.

China provides such a case. Both domestic public opinion polls in China and surveys by international organizations show that the level of corruption in China is high, deeply rooted, and widespread (Transparency International, 2007). In spite of the rampant corruption, the Chinese economy has been growing rapidly, with an average annual growth rate of approximately 10 percent. Moreover, China is not alone; there are other countries that have relatively high corruption and economic growth rates. Presumably, one can argue that this is because there are many factors that affect economic growth and corruption is only one of them. However, we are

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[1] While the causal relationship between corruption and economic growth may go both ways, at the very least, it is reasonable to argue that in the long run, persistently corrupt countries fail to develop.

not satisfied with this argument, because the observation that *all* the poorest countries are highly corrupt (Figure 1) does suggest that corruption hurts economic growth in the long run.

(Insert Figures 1 and 2 about here)

This poses an important puzzle to not only scholars of international business, but also the society in general and the policy makers in particular: why corruption seems to be more harmful to some countries and less harmful to others for their economic growth?

Scholars first tried to solve this puzzle by constructing various theories of corruption. Broadly speaking, there are two major theoretical streams on the role of corruption on economic growth. One stream argues that corruption is pure waste and thus bad for economic growth (Murphy, Shleifer and Vishny, 1991; Choi and Thum, 1998; Svensson, 2003). The other argues that under a political and economic environment where regulations are extremely rigid and anti-business, corruption (and bribery) may serve as lubricant to circumvent stifling regulations and thus conducive to economic growth (the "efficiency-enhancing corruption") (Leff, 1964; Lui, 1985; Wedeman, 2002). While both theories are internally consistent and make sense, empirical evidence does not seem to support either.

A weakness in the previous studies is the inability to systematically distinguish the more "efficiency-enhancing" corruption from the more "predatory" corruption by identifying some moderating factor(s) that may alter the circumstances in which the effect of corruption on economic efficiency can be more harmful or less harmful on economic efficiency. Presumably, we could imagine that some countries tend to have more "efficiency-enhancing" corruption, while other countries tend to be plagued by "predatory" corruption. If this is the case, without being able to identify the factors that may determine the type of corruption, then the overall effect of corruption on economic growth across countries may be obscured, with the "efficiency-enhancing" and "predatory" effects canceling each other, thus failing to support either view.

We propose a new perspective to address this puzzle. We argue that a major factor that may systematically distinguish countries with predominantly "efficiency-enhancing" corruption from countries with predominantly "predatory" corruption is the level of generalized trust in a society. In a society with a generally high level of public trust, corruption tends to be efficiency-enhancing (or less harmful to economic growth), whereas in a society that lacks trust, corruption tends to be predatory (or more harmful to economic growth).

This argument seems to be contradictory: corruption and bribery are dishonest and immoral behaviors, whereas trust usually has the connotation of honesty and high morality. In this article, we will first review the literature on corruption, develop our argument, which paradoxically suggests a complementary relationship between corruption and trust, on how both interact to affect economic efficiency, and use a case study and a statistical test to support our argument.

CORRUPTION AND ECONOMIC GROWTH

The literature on corruption is multidisciplinary, rich and growing. Scholars from virtually every discipline in the social sciences and business schools study it (e.g., Jain (2001), Rodriguez, et.al. (2006), and Svensson (2003)). For our study, we will restrict our literature review to the effect of corruption on economic growth across countries.

As briefly mentioned earlier, there are two contrasting views on the effect of corruption on economic growth. One school, which may be termed as the "efficiency enhancing" view, argues that under certain conditions, corruption may improve the efficiency of government bureaucracy (Leff, 1964). If a country's political system is characterized by long and complicated business approval process, and the laws and regulations are anti-business and rigid, then paying bribes to officials to circumvent the bureaucracy will improve the efficiency of business and thus help the economy to grow. This is the so-called "grease-the-wheels-of-bureaucracy" argument for corruption. Lui (1985) develops a queuing model demonstrating that if corrupt officials award business licenses or contracts according to the size of bribes, and more efficient firms can offer larger bribes to get the license or contracts, then such corruption is efficiency enhancing and resources can achieve optimal allocation.

Other scholars are skeptical of the "efficiency enhancing" view. The main criticism is that the efficiency enhancing view treats rigid bureaucracy and anti-business regulations as given. However, in most countries with high corruption, the officials have strong incentive to make the regulations more rigid so that they can demand more bribes. In this regard, the critics argue that both corruption and rigid regulation are symptoms of other underlying factors (Kaufmann and Wei, 2000; Svensson, 2005). Furthermore, we should point out that Lui's model implicitly assumes that a corrupt official is comfortable accepting bribes from *anyone,* including people they don't know well. This is not realistic, since the risk of accepting bribes from a stranger is high in a society with little trust. It is more likely that a corrupt official chooses to only accept

bribes from related people to reduce the risk of being turned in, which may lead to sub-optimal allocation of resources.

The argument that corruption negatively affects economic growth is primarily based on resource allocation. Corrupt officials may select and approve projects that are easy to extort bribery, rather than the ones that can create the largest economic welfare for the society (Murphy, Shleifer and Vishny, 1991, 1993). These corrupt officials tend to award contracts to firms that are willing to lower quality and use the savings to pay a higher bribe to get the business, encouraging inefficient firms (Rose-Ackerman, 1977). Responding to a corrupt environment, firms may try to avoid long-term, irreversible investment, and opt for "fly-by-night" technology to guard against future escalation in bribe demand (Choi and Thum, 1998; Svensson, 2003). Corruption can also drag down economic growth by diverting entrepreneurial talents from productive works (such as starting new businesses) to unproductive works (e.g., seeking government jobs) (Svensson, 2005). Despite the theoretical efforts in understanding the impact of corruption on the economy, empirical testing is inconclusive on this issue (Svensson, 2005).

THE IMPACT OF TRUST ON CORRUPTION

Corruption is illegal in almost all societies, at least nominally. Thus an important factor in taking bribers is the risk of being caught. Scholars have studied the probability of being caught in corrupt activities (e.g., Becker, 1968). However, there does not seem to be any study on the systematic variations, or patterns, in the probability of being caught across countries, except the general notion that in a more corrupt society, bribery and corruption tend to be perceived less dangerous and more acceptable (such as "this is the only way to do things here") (Jain, 2001).

In this regard, we argue that one important factor that has been overlooked is the level of trust. Putnam (1993) and Fukuyama (1995) are among the first to argue that trust, or social capital, affect economic performance. Later on, La Porta et al. (1997) argue that trust promotes cooperation, which in turn promotes economic performance, and provide statistical evidence to support their argument. We further argue that trust promotes cooperation between corrupt officials and bribers.

Trust is important in bribery-corruption relationship, because the time lag and geographic separation between the bribe payment to the corrupt official and delivery of the public good to the briber. This is especially true in large scale corruptions involving government contracts or market access worth hundreds of millions of dollars (Whereas petty corruption such as paying a

police official to cancel a ticket for traffic violation may be accomplished on the spot). A key issue in any economic transaction is: Should the briber pay first, or should the official deliver the goods first? If there exists a high-level trust between the briber and the official, it is less of a concern. Otherwise, the deal cannot be done since there is very little legal protection for bribery-corruption relationship.

Suppose there are two types of societies in terms of the level of trust between strangers: society A has a very high level of public trust, whereas society B has virtually no public trust. In society A, people tend to trust each other, corrupt officials feel comfortable taking bribes from almost anyone, because the likelihood of being turned in by the bribe giver is very low. Furthermore, whether the briber pays first or the official delivers first is not a major issue, since they trust each other. Thus, it can be logically argued that in society A, there is an extensive and efficient bribe-taking corruption market; corrupt officials will sell the public goods (contracts or market access) to the highest bidder who has the most efficient firm (approximating the "efficiency enhancing" hypothesis). In essence, bribers pay and officials deliver.

In society B, people are highly suspicious of each other, and corrupt officials only accept bribes from people they know well, such as their relatives and longtime friends. In these close relationships, the time lag between payment and deliver is not a big problem. But such transactions are only limited to a small number of people. If corruption is rampant in society B, then it implies that corrupt officials must extract bribes from strangers. But with strangers, the time lag and geographic separation (such as delivering the public goods in one city and paying bribes in another city) becomes a difficult issue. Since there is little trust and thus no guarantee that the official will deliver, then potential bribers will not pay upfront. Likewise, the official will not deliver without payment first. The likelihood of closing a bribe-taking deal is further reduced because there is a risk of being turned in, coupled with the threat of future extortion, between strangers with low level of trust. However, if corruption is rampant in such society, it then implies that officials control most resources and have absolute authority to extract payment from ordinary citizens and private firms. Then corruption becomes predatory, a pure extortion that does not deliver value to either the briber or the society and hence, economic growth.

What countries tend to have a higher level of public trust? Literature on trust suggests that public trust can be nurtured and positively re-enforced by good political and economic institutions (La Porta et al., 1997). More pertinent to our study, public trust in a society is a

culture (commonly observed social norms and values) that is formed during long history of "horizontal networks of association" (Putnam, 1993) between people in social, economic, and political exchanges. In this regard, voluntary (or informal) social network can be viewed as a governance mechanism that use private relations, rather than official laws or regulations, to conduct and protect business and other social interests including property rights (Li & Filer, 2007). Imagine that in a society in which people tend to make great effort to cultivate personal relationships and build private networks (more like society A in our earlier example), person X tends to place a higher level of trust on person Y, who X does not know well, as long as X's personal network reaches Y through connections. (In other words, if Y cheats X, X can always rely on his/her network to punish Y.) A logical interpolation is that in this society, the level of public trust tends to be higher as a result of the society's heavy reliance on personal network.[2]

Based on the above discussion, we propose that in countries with a more expansive, stronger, and thicker social network, as reflected in the higher level of public trust, bribery-corruption relations tend to be more extensive (more people participating) and efficient in the sense that the briber pays and the corrupt official delivers the public goods (such as licenses, permissions, or contracts) to the briber in need, thus facilitating business activities and economic growth. In contrast, in countries with weak social networks, as evidenced in a low-level of public trust, bribery-corruption relations tend to be limited to a small number of closely related people (such as family members or long-time friends), who may not be necessarily the most efficient users of the public goods they receive as a result of their bribe. The bribe payment by strangers will degenerate into pure extortion (as our example society B shows), producing a deadweight loss to the briber and no efficiency gain for the economy. More formally, we have

Hypothesis 1: Corruption has a negative effect on economic growth, ceteris paribus.

Hypothesis 2: Trust has a positive effect on economic growth, ceteris paribus.

Hypothesis 3: The effect of corruption on economic growth is moderated by trust. There is an interaction effect between corruption and trust on economic growth. In countries with a higher level of trust, the negative effect of corruption will be mitigated.

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[2] In our study, we treat the reliance on personal network and its measurement (trust) as exogenous. Discussing the determinants of the development of personal networks or trust is beyond the scope of our study. Interested readers may refer to Putnam (1993), Fukuyama (1995), La Porta et al. (1997), Child (2001) for further discussion on trust and social networks.

EMPIRICAL EVIDENCE

Since our argument is new and thus requires the most vigorous and comprehensive empirical verification available, we decide to conduct a comparative case study and a statistical test to see if our view is supported qualitatively and quantitatively. We first present our case study and then our statistical test results.

Case Study

The cases of China and the Philippines may illustrate our argument. As shown in Table 1, both countries have similar scores in Corruption Perception Index, but are widely different in the level of public trust and economic growth rate, with China being high and the Philippines low on both measures. While we realize that China and the Philippines share some commonalities in corruption activities which are observed in most corrupt countries in the world, such as officials stealing from the state coffers and extorting the private sector, what we try to illustrate here is that in a comparative perspective, corruptions in China and the Philippines tend to emphasize different types.

(Insert Table 1 about here)

Corruption in China

China is best known for its guanxi culture and practice (Yang, 1995; Xin and Pearce, 1996; Park and Luo, 2001; Li, Park & Li, 2004). Guanxi refers to informal social networks based on private relations among people. It functions as a relation-based governance system that provides private means to facilitate and protect economic transactions. Li et al. (2004) discuss how relation-based governance system can perform three monitoring mechanisms to ensure smooth economic transactions when public laws and regulations fail to provide fair and efficient ordering: the ex ante ability to privately check the prospective party's history in terms honoring commitment; second, the interim ability to follow the progress and status of the other party after entering into a business deal, and the ex post ability of deterring opportunistic behavior by private means (such as bad-mouthing, seizing assets, or even physical threatening). From game-theoretical perspective, in repeated dealings, these private mechanisms can be efficient and effective. Moreover, in a society with a high-level of public trust, the likelihood of cooperation between two people who have just met the first time (such as between potential briber and prospective bribe taker) is high (Kreps et al., 1982) and private governance mechanisms can be quite effective and efficient.

The corruption-growth relationship in China closely resembles such conditions. In China, due to the monopolistic control of most economic resources by the government, corruption is rampant. The widely accepted view in China is that "power cannot be deposited in a bank, so you had better profit from it while you can" (see, Taihang Luntan (2007)). Furthermore, the strong and thick social networks make the bribery-corruption relationship go beyond family members and close friends. A common practice in China is if a businessman needs a highly restricted permit from a specific government department, he would go around asking all his friends who might know someone in that department. Very likely, one of the friends would say, "I don't know anyone there directly, but my sister-law has a co-worker who knows someone who has a student who is the son of a senior official in that department." In a society with low trust, such an indirect relationship is too risky to discuss bribe. But in China, many bribery-corruption relationships can be established in just this way, due to its strong guanxi system, as can been seen in many known corruption cases, most of which involve people beyond the extended family ties (see, e.g, Chinaaffairs.org (2007)).

This high trust can be seen from the following quotation from a multinational executive explaining how his firm would gave a large "slush fund" to a consultant to pay bribes in China: "The terms of the deal was…a ten million-dollar discretionary fund. Hands off, no questions asked. Don't ask [the consultant] where the money goes,…We know exactly what he was up to, and exactly how successful he would be…" (Gutmann, 2004, p124).

The following bribing act is quoted from a reliable source.[3] "I [the briber] invite my client [corrupt official] to a well-known Cantonese restaurant with several branches in Beijing. The meal costs an astronomical 20000 rmb [$2,400] for two. On the way out, the restaurant passes a gift to my client and the client is told he or she can exchange the gift for cash if he or she does not like it. The gift is then exchanged by my client for about 10000 rmb. I have not discussed any such exchanges with my client. But just in case people get the wrong impression, the restaurant has covered my car's license plate in the restaurant's parking lot." This restaurant is known for providing such a service to facilitate bribery and corruption. Needless to say, this kind of bribery-corruption is only possible when there is a very high-level of trust.

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[3] This is quoted from a source who wishes to remain anonymous. The quotation and the restaurant name can be verified upon request.

Even the Chinese government admits that corruption in China has become quite innovative and very sophisticated. According to *Takungpao*, a Chinese government newspaper, bribers and corrupt officials have invented new arrangements in the bribery-corruption relationship (Hu, 2006). One of the new features can be called the "globalization" of bribe. Bribes are paid not in China, but outside of China, in the form of luxury homes, bank accounts, or gambling trips (Chinaaffairs.org, 2007). The reason that these activities and assets are outside of China is to reduce the risk of being caught. But the geographic and temporal separation of payment and delivery also means that there is a high level of trust between the briber and the official. Perhaps the most interesting new feature of corruption in China is that it has taken the form of futures options. The briber and the official have developed an understanding: the incumbent official will help the briber now and will not get paid immediately. Years later, when the official is retired, the briber will pay him in some way. Obviously, this arrangement substantially reduces the risk of being caught. Again, without a high level of trust, the corrupt will not choose this option.

Corruption in the Philippines

The case of the Philippines is very different from that of China. Although it has a similar level of corruption and its income per capita is close to China's, it has a much lower level of public trust and slower rate of economic growth than China (see Table 1).

A major type of corruption in the Philippines, at least historically, was that the head of the state would control the entry of an industry or simply monopolize it, and impose a tax or surcharge on all the products of the industry or extract a fee for entering the industry. The head of the state would appoint one of his or her cronies to be in charge of the industry and steal all the collections from the state coffers. To the private sector payers, these taxes, surcharges or fees were nothing more than a robbery, a deadweight loss in economic efficiency. The collecting officials simply imposed them on the payers, without facilitating or helping any business activities. Furthermore, the victim of the corruption, the payers, would have no evidence with which to turn in the official collector, because the latter was simply executing a state order, as shown in the following examples of major industries in the Philippines.

In the coconut sector in the 1970s (accounting for roughly 25% of Philippines' export income), former President Ferdinand Marcos imposed a tax on all sales of coconuts and copra. The agency in charge of collecting this tax was headed by his close friend Manuel Conjuangco.

Conjuangco then used the extorted money to buy banks, which in turn funded his acquisition of many coconut oil pressing mills. Then he put all the tax money in a fund and used the fund to subsidize the mills he and Marcos controlled (Wedeman, 1997).

There is a similar corruption pattern in the cigarette industry. In 1975, Marcos imposed a 100% import duty on cigarette filers, but gave special 90% import duty reduction to the Philippine Tobacco Filters Corporation, a company owned by one of his close friends, Herminio Disini. Disini in turn supplied the filter at below market prices to Fortune Tobacco, a major cigarette maker owned by another Marcos ally, Lucio Tan. Together they drove the competition out of market and monopolized the cigarette industry (Wedeman, 1997).

In the sugar industry in 1974, Marcos ordered that all sugar exports be monopolized by the Philippine Exchange Company, which was controlled by his college friend Robert Benidicto (Wedeman, 1997). With the blessing of Marcos and subsidies from state funds, Benidicto manipulated sugar prices and took advantages of the differences between the monopolized domestic price and international price to profit at the expenses of sugar farmers and producers.

In all these corruption anecdotes in the Philippines, there was little collaboration between the briber (the payer of surcharges, entry fees, and other types of extortions) and the corruption official. The briber was forced to pay, and the official did not enhance the efficiency of the briber's business. It is estimated that through these extractions, Marcos and his associates amassed wealth valued between $3 billion to $6 billion (Wedeman, 1997; Bhargava and Bolongaita, 2004).

The above comparative case study of corruptions in China and the Philippines demonstrates that the types of corruptions in China, i.e., futures options type, third party brokering (the restaurant example), the "no-questions asked" slash funds, requires a high level of trust between the briber and the bribee; Whereas in the Philippines, a high level of trust between the extorting official (bribee) and the extorted business people (briber) is not required and does not seem to exist.

Statistical Test

Next we perform a statistical test using a pooled data set consisting of 90 observations with 65 countries in two time periods (see Table 2). A major limitation in building a testing data set with a large number of countries with multiple time periods is the lack of data on trust. The only publicly available data on trust across countries is the data from the World Values Survey

conducted by Inglehart (1994-2005). We are able to obtain the two most recent waves of the World Values Survey, 1994-1999, and 2000-2005, and collect other variables based on the same time periods to construct a pooled data set (Wooldridge, 2003) for our statistical test. Table 2 lists the countries that have non-missing variables. Detailed data and variable descriptions are below.

<center>(Insert Table 2 about here)</center>

Data

      Economic growth. This is our dependent variable. We use the average annual growth rate of GDP per capita to measure economic growth (World Bank, 2002). Corresponding to the two periods in which we have the data on trust, we use the following two time periods, 1994-1999, and 2000-2005. In order to reduce the effect of extreme values, we take the nature logarithm of average annual growth rate of GDP per capita [log(GDPpgr)] to improve linearity.

      Our independent variables include the following.

      Corruption. Our measure of corruption (CORRUPT) is adopted from the Corruption Perception Index (CPI) developed by Transparency International (1996, 2002). The original CPI ranges form 0 (most corrupt) to 10 (most clean). We reversed the order by multiplying (-1) so that a higher score means more corrupt, which is easier to interpret the test result. Corresponding to the two time periods, we use the CPIs in 1996 and 2002.

      Public trust. Our measure of trust comes from the World Values Survey (Inglehart, 1994-2005), based on a question in the survey which asks: "Generally speaking, would you say that most people can be trusted or that you cannot be too careful in dealing with people?" The answer is "yes" or "no." We use the percentage of people answering "yes" as our measure of trust (TRUST) in a country (Knack and Keefer, 1997; La Porta, Lopezde-Silanes and Shleifer, 2002; Li and Filer, 2007). We use data from the two most recent survey waves, 1994-1999 and 1999-2004.

      Our control variables include the following.

      GNI per capita. According to the literature, a major factor affecting economic growth is the existing level of economic development (Barro, 1997). We use the average gross national income per capita (GNIp) as the measure for economic development and include it in our model as a controlled variable. The periods of the income data are 1994-1999 and 2000-2005 (World Bank 2006).

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Schooling. Studies have shown that human capital stock affects on economic growth (Barro, 1997). Furthermore, corrupt countries have significantly lower levels of human capital stock (Svensson, 2005). We thus control it in our model and use years of schooling of the total population aged over 15 (SCHOOL) developed by Barro and Lee (2000) to proximate it. Barro and Lee (2000) calculate the data every five years. We use the data in 1995 and 2000 corresponding to the two time periods.

Political System. Scholars of political economy have argued that regime type, such as democracy and dictatorship, affects economic development, although the overall relationship between growth and regime type is not very clear empirically. Przeworski et al (2000) find that regime type does not have a significant effect on development, whereas Barro (1997) finds a nonlinear relationship between the two. In our model, we control the political system (STATUS), adopted from Freedom House (1972-2006), which classifies the political system of a country into "Not Free," "Partially Free" and "Free." In our preliminary test, we found that there was no significantly different influence on economic growth between partially free and free countries. Thus we code STATUS as 1 if "Not Free," and zero otherwise. Corresponding to the two time periods, we use status data in 1996 and 2002.

Time Period. As mentioned before, our pooled data are from two time periods: 1994-1999 and 2000-2005. To reflect the fact that the population may have different distributions in the two different time periods, we allow the intercept to differ across the two time periods by including a time period dummy (TIME) (Wooldridge, 2003). We choose the first time period (1994-1999) as baseline, that is, TIME=0, if an observation is in 1994-1999, and TIME=1, if an observation is in 2000-2005.

Testing Results

We first estimate the correlation coefficients for all the variables. As expected, corruption is negatively correlated with the growth rate of GDP per capita and trust is positively correlated with the growth rate of GDP per capita. The correlation efficient between GNI per capita and corruption is quite high (-0.872), causing our concern about potential multicollinearity problems in our subsequent regression estimates. We thus decide to run two sets of regressions, one with and one without GNI per capita.

<center>(Insert Table 3 about here)</center>

The general model tested is

Economic growth = f (corruption, trust, corruption*trust, control variables (GNI per capita, Human capital stock, Political Status, Time period), error term).

We use three specifications to test our hypotheses: Model (1a) examines the traditional model of the impact of corruption on economic growth, controlling for human capital stock, political status and time period; Model (2a) adds "trust" to Model (1a) as an additional independent variable to examine the influence of trust on economic growth, and Model (3a) adds an interaction term between corruption and trust to Model (2a). We then repeat the above models with one more control variable, GNI per capita (Models (1b), (2b), and (3b)).

The results are summarized in Table 4. All the six specifications, Model (1a) to Model (3b), are very consistent: corruption has a negative effect on economic growth, trust shows a positive sign in terms of affecting economic growth, and the interaction term is positive. Comparing Models 1a-3a (without GNI per capita) and Models 1b-3b (with GNI per capita), we find that they are similar in terms of the effects of the independent variables and explanation power, indicating that the relationship between economic growth, corruption, and trust are stable and our specifications are robust. This robustness can be seen quite clearly from Model 3a and Model 3b: the magnitude of coefficient estimates, the significant levels, and the R-squares are very close. We will thus focus on Model 3b, the model with all independent variables, to discuss the testing result.

(Insert Table 4 about here)

In Model (3b), the coefficient of CORRUPT is negative (-1.086) and highly significant ($p < 0.000$), suggesting that corruption retards economic growth. Hypothesis 1 is supported. Trust has a highly significant positive effect (1.239 with $p < 0.000$) on economic growth, supporting Fukuyama's view (1995) and our second hypothesis that a high level of trust among citizens accounts for the superior performance in the economy (measured by economic growth). The interaction term between corruption and trust is positive (1.495) and highly significant ($p < 0.000$), showing that the negative effect of corruption on economic growth is reduced by a higher level of trust. The effect of the interaction term can be clearly seen if we rearrange Model (3b) as follows:

$$\text{Log (GDPpgr)} = (-1.086 + 1.495\text{TRUST})*\text{CORROPT} + 1.239*\text{TRUST} - .356*\text{GNIp} + .074*\text{SCHOOL} - .275*\text{STATUS} + .227*\text{TIME} + \text{error},$$

where the coefficient estimates are standardized and thus the variables are z-scores. (We use standardized coefficients to facilitate comparisons of magnitudes among the coefficients (Wooldridge, 2003).

The new coefficient of corruption, (-1.086+1.495TRUST), shows that if the z-score of trust equals to zero, corruption has a negative effect on the z-score of economic growth by a magnitude of -1.086 standard deviations; if, however, the z-score of trust is great than zero, then it will decreases the negative effect of corruption. A one standard deviation increase in the z-score of trust will decrease the negative effect of corruption by 1.495 standard deviations. These results show that trust moderates the effect of corruption on economic efficiency. Hypothesis 3 is supported.

CONCLUDING REMARKS

In this study, we shed light on the mystery of why some countries achieve rapid economic growth with rampant corruption by examining the role of trust in the corruption-efficiency relationship. We argue that in countries with a higher level of trust, corruption tends to be relatively less harmful to economic growth. Our empirical analysis using both case study and statistical test provides support for our view.

Before discussing the implications of our study, we want to point out that our study should be interpreted with caution. The conceptualization and measure of trust is far from perfect. Although the World Values Survey (WVS) is well designed and executed, and has been used extensively in studies across many disciplines, all attitude survey faces internal and external validity issues. In our study, as in many studies that have used the WVS data, we take the data on trust as given and as is universally and consistently applied to and measured in all the countries in the survey. Using it this way inevitably brings up the question that how can we be sure that the perception of trust is the same for Chinese as it is for Scandinavian?

It is reasonable to argue that when the Chinese answer the trust question in the WVS, they probably view trust not as "public trust", or trust between strangers, but as personal trust that is extended and supported by a vast guanxi network, which we tend to agree and which actually supports our proposition; Whereas the Scandinavians answering the question may mean the trust between totally unrelated strangers, which is closer to the notion of "public trust."

In our study, we do not impose what we think the trust question of the WVS measures based on our own perception about what citizens of a particular country may think. We believe

that since the question is universally asked across all countries in the sample, a reliable way to use it is to use it as is. Keeping the above caution in mind, and taking our study as the empirical evidence suggests, we derive the following implications.

The so-called "efficiency enhancing" corruption under a high level of trust implies that the official steal public goods and provides them below the official price to the briber, enabling the briber to improve efficiency (similar to Shleifer and Vishny's "corruption with theft" (1993)). The so-called "predatory" corruption is more like "corruption without theft" in Shleifer and Vishny's model, in which the bribe is an extra on top of the official price of the public good in question. As Shleifer and Vishny point out, corruption with theft may lower the total cost of business for the briber and thus the briber has little incentive to turn in the corrupt official, making corruption with theft is difficult to detect.

The high level of trust (or personal reliance sanctioned by a vast informal social network) in societies with predominantly "efficiency-enhancing" corruption implies that cleaning corruption is very difficult. The strong and thick social network makes it very difficult for "whistle blowing." If this logical conjecture is true, then the prospect of eradicating corruption in highly relation-based countries, such as China, is less optimistic. On the other hand, corruptions in societies with a low level of public trust, may, ironically, be easier to clean, since they absolutely dissipate values from the business and citizens.

Another possible implication is that the "efficiency enhancing" corruption, namely, corrupt officials steal public goods and sell them to bribers for private gains, may have three consequences. First, it enriches the corrupt officials' pockets; second, it improves the bottom line of private firms who bribe (which is extensive due to the high level of trust), and third, in the process of achieving the first two, it impoverishes the state coffers. However, while the state treasure is being stolen and thus may be weakened, the corrupt officials have strong incentives to maintain and increase the state's political and regulative power so that they can continue to sell licenses and permits for their private gains. Thus, we may conjecture that under the so called "efficiency enhancing" corruption, the society will have a state with a strong and monopolistic political power, a weakened state treasure, and an efficient and wealthy business class.

The difficulty of cleaning the "efficiency enhancing" corruption may be further exacerbated by the futures option type of corruption. The time difference in bribe payment and public goods delivery implies that both parties, the briber and the corrupt official, have strong

incentive to preserve the current political order to protect their futures options. We may call it a "lock-in effect" of the bribery-corruption relationship.

This poses a greater difficult ethical dilemma for MNCs entering into countries with "efficiency-enhancing" corruption. If before we could argument against MNCs engaging in bribery not only from ethical but also efficiency perspective, now the second part of the argument is in question because in highly relation-based societies corruption with trust may help efficiency, or at least may not be as harmful. What should MNCs do under such a scenario, form an efficient bribery-corruption relationship so that they can effectively compete in the marketplace there, or resist bribing and be less competitive? While this debate is not new, our study provides a new twist. Further studies in this direction are much needed to improve our understanding on this issue and to provide policy and strategy assistance to MNCs by considering the moderating role of general trust in a country on corruption and efficiency.

At the minimum, from a practical perspective, MNC executives should be aware of the distinction between countries with a high level of trust and a low level of trust in terms of entering strategy and market expansion into a new country. They should pay sufficient attention to the extent of informal social network and its role in constraining or facilitating their interaction with the local government officials and regulations.

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Figure 1, Corruption and GNP per capita across countries
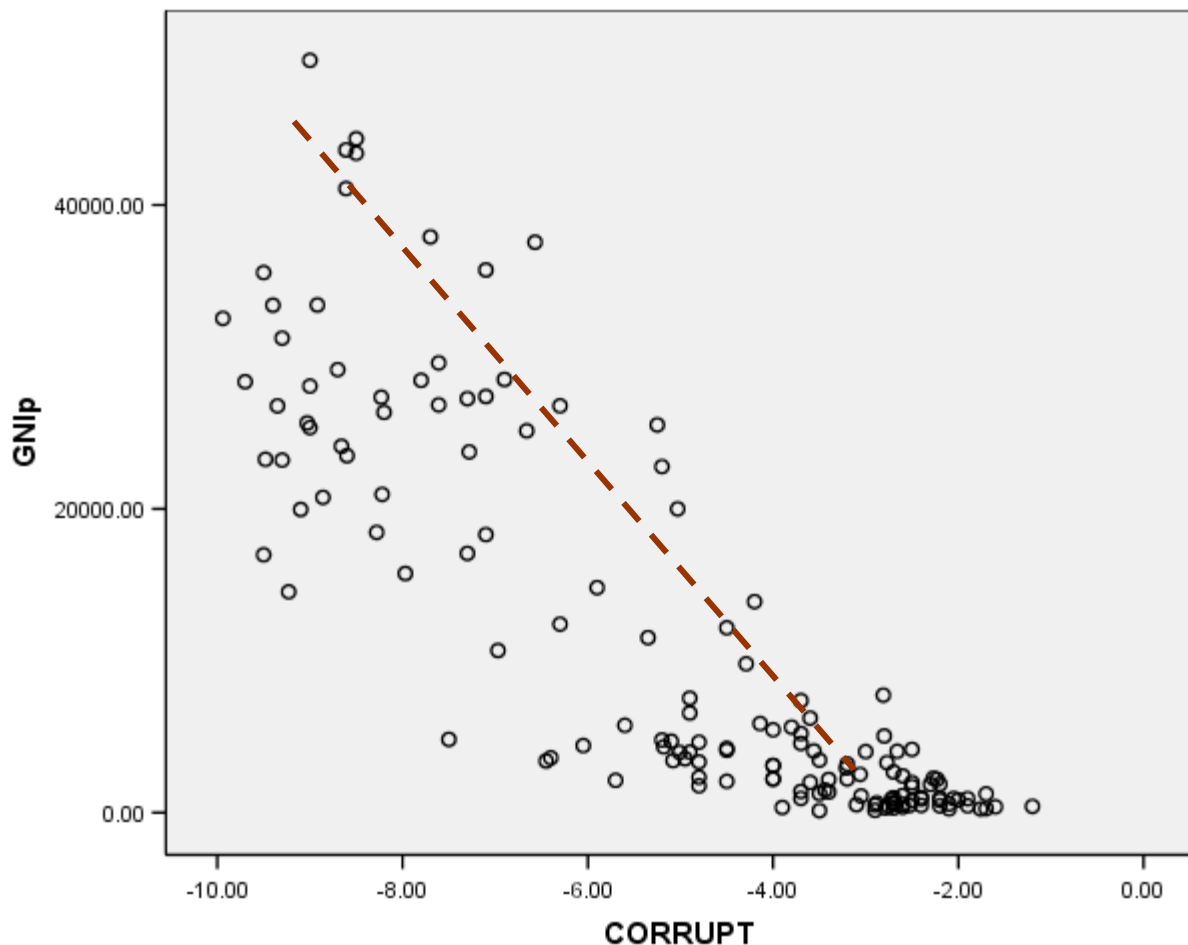
GNIp=GNI per capita in US Dollar; CORRUPT=Corruption Perception Index, 0=most corrupt, -10=most clear. Source: Transparency International and World Bank.

Figure 2 Corruption and GDP growth rate across countries

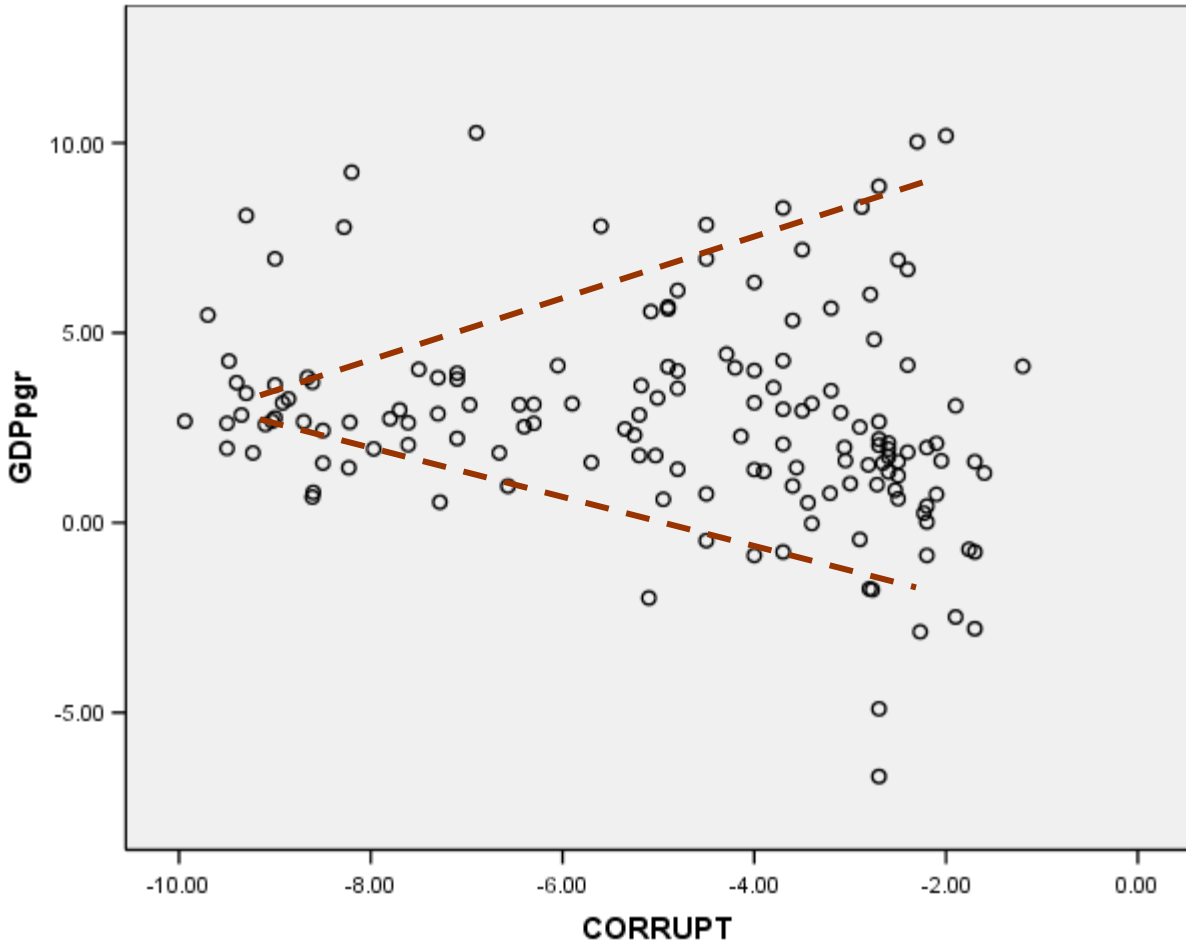GDPpgr=GDP per capital growth rate; CORRUPT=Corruption Perception Index, 0=most corrupt, -10=most clear. Source: Transparency International and World Bank.

Table 1: Corruption, trust, and economic development in China and the Philippines

Country	GDP annual growth rate (%) (1990-2000)	GNI per capita (2001)	Corruption perception index (10=best, 1=worst) (2000)	*Trust* (1999-2004)
Philippines	3.3	1050	2.8	8.6
China	10.3	890	3.1	54.5

Source: World Bank, Transparency International, and World Values Surveys

Table 2: Countries included in the statistical test

Period 1: 1994-1999		Period 2: 1999-2004			
1	Australia	1	Argentina	24	Jordan
2	Brazil	2	Austria	25	Korea, Rep.
3	Chile	3	Bangladesh	26	Mexico
4	China	4	Belgium	27	Netherlands
5	Colombia	5	Bulgaria	28	Pakistan
6	Czech Republic	6	Canada	29	Peru
7	Finland	7	Chile	30	Philippines
8	Germany	8	China	31	Poland
9	Hungary	9	Czech Republic	32	Portugal
10	India	10	Denmark	33	Romania
11	Japan	11	Egypt, Arab Rep	34	Russian Federate
12	Korea, Rep.	12	Finland	35	Singapore
13	Mexico	13	France	36	Slovak Republic
14	Netherlands	14	Germany	37	South Africa
15	Norway	15	Greece	38	Spain
16	Pakistan	16	Hungary	39	Sweden
17	Philippines	17	Iceland	40	Tanzania
18	Poland	18	India	41	Turkey
19	Romania	19	Indonesia	42	Uganda
20	Russian Federate	20	Ireland	43	United Kingdom
21	South Africa	21	Israel	44	United States
22	Spain	22	Italy	45	Venezuela, RB
23	Sweden	23	Japan	46	Zimbabwe
24	Switzerland				
25	Turkey				
26	United Kingdom				
27	United States				
28	Uruguay				
29	Venezuela, RB				
30	Vietnam				

Table 3: Correlation coefficient estimates among all the variables

	Mean	S.D.	GDPpgr	CORRUPT	TRUST	GNIp	SCHOOL	STATUS
CORRUPT	-5.30[a]	2.53	-.220					
			(.056)					
TRUST	28.86	15.53	.290*	-.588**				
			(.011)	(.000)				
GNIp	12,909	12,647	.132	-.872**	.599**			
			(.257)	(.000)	(.000)			
SCHOOL	8.04	2.29	.179	-.625**	.417**	.627**		
			(.123)	(.000)	(.000)	(.000)		
STATUS	.07	15.53	-.016	.241*	.146	-.254*	-.304*	
			(.893)	(.036)	(.208)	(.027)	(.008)	
TIME	.61	.49	.219	.010	-.004	.042	-.067	.016
			(.057)	(.928)	(.976)	(.722)	(.568)	(.363)

P-values are in parentheses. * Correlation is significant at the 0.05 level. ** Correlation is significant at the 0.01 level. [a]0=most corrupt, -10=most clear.

Table 4: Standardized coefficient estimates of regression result

Independent variables	Dependent variable: log(GDPpgr)					
	Model 1a	Model 2a	Model 3a	Model 1b	Model 2b	Model 3b
CORRUPT	-.194	-.023	-.788***	-.460*	-.362	-1.086***
	(.184)	(.888)	(.003)	(.053)	(.118)	(.000)
TRUST		.302**	1.186***		.380**	1.239***
		(.046)	(.000)		(.013)	(.000)
CORRUPT*TRUST			1.530***			1.495***
			(.000)			(.000)
GNIp				-.339	-.489**	-.356**
				(.155)	(.041)	(.038)
SCHOOL	.065	.015	.026	.110	.067	.074
	(.662)	(.917)	(.848)	(.466)	(.644)	(.580)
STATUS	-.045	-.146	-.238**	-.056	-.188	-.275**
	(.705)	(.252)	(.049)	(.638)	(.138)	(.022)
TIME	.205*	.212*	.197*	.226**	.244**	.227**
	(.074)	(.060)	(.058)	(.050)	(.029)	(.027)
N	76	76	76	76	76	76
R Square	.103	.153	.293	.129	.203	.337
F-statistics	2.040*	2.533**	4.776***	2.071*	2.936**	4.936***
	(.098)	(.036)	(.000)	(.079)	(.013)	(.000)

P-values are in parentheses.

*Significant at the 0.10 level. **Significant at the 0.05 level, ***Significant at the 0.01 level.