Lingnan University

Digital Commons @ Lingnan University

CAPS Working Paper Series

Centre for Asian Pacific Studies 亞洲太平洋研究中心

1994

Corruption by design : bribery in Chinese enterprise licensing

Melanie MANION

Follow this and additional works at: <https://commons.ln.edu.hk/capswp>

Part of the [Political Science Commons](#), and the [Public Affairs, Public Policy and Public Administration Commons](#)

Recommended Citation

Manion, M. (1994). Corruption by design: Bribery in Chinese enterprise licensing (CAPS Working Paper Series No.13). Retrieved from Lingnan University website: <http://commons.ln.edu.hk/capswp/80>

This Paper Series is brought to you for free and open access by the Centre for Asian Pacific Studies 亞洲太平洋研究中心 at Digital Commons @ Lingnan University. It has been accepted for inclusion in CAPS Working Paper Series by an authorized administrator of Digital Commons @ Lingnan University.

Working Paper Series

No. 13 (6/94) CAPS

**CORRUPTION BY DESIGN:
BRIBERY IN CHINESE
ENTERPRISE LICENSING**

by

Dr. Melanie Manion

**Faculty of Social Sciences
Lingnan College
Hong Kong**

香港嶺南學院
社會科學院

No. 13 (6/94) CAPS

CORRUPTION BY DESIGN:
BRIBERY IN CHINESE
ENTERPRISE LICENSING

by

Dr. Melanie Manion

嶺南學院圖書館

18 NOV 1996

LINGNAN COLLEGE LIBRARY

Faculty of Social Sciences
Lingnan College
Hong Kong
1994

**CORRUPTION BY DESIGN:
BRIBERY IN CHINESE
ENTERPRISE LICENSING**

These working papers are circulated to invite discussion and critical comment. These papers may be freely circulated but they are not to be quoted without the written permission of the author. Please address comments and suggestions to the author or the series editors.

Editorial Board

Centre for Asian Pacific Studies:

7/14 27231

Dr. Brian Bridges
Dr. Kui Yin Cheung
Prof. Y. Y. Kueh
Dr. David Newman

Centre for Public Policy Studies:

Dr. Che Wai Kin
Mr. John Dixon
Prof. Y. Y. Kueh
Prof. David Weimer

© Melanie Manion

Dr. Manion is Assistant Professor of Political Science, University of Rochester, visiting at the Faculty of Social Sciences, Lingnan College in 1994-95.

**Faculty of Social Sciences
Lingnan College
15 Stubbs Road
Hong Kong
Tel : 572 2226
Fax : 891 7940**

Working Paper Series

<u>No.</u>	<u>Topic</u>	<u>Author</u>
1 (1/93)	Growth into a market economy: The "Incremental Approach" in China	Dr. Fan Gang
2 (2/93)	中國第一部證券法起草中的 若干問題	厲以寧教授
3 (3/93)	Social Inequality in Singapore: A Dual Economy Approach	Dr. William K.M. Lee
4 (4/93)	European Monetary Integration: Experiences and Future Prospects	Prof. Dieter Cassel and Dr. Thomas Apolte
5 (5/93)	Whither Hong Kong in an Open-Door, Reforming Chinese Economy?	Mr. Y. P. Ho and Prof. Y. Y. Kueh
6 (6/93)	China's Rise, Russia's Fall: Policy Choice or System Difference	Dr. Peter Nolan
7 (7/93)	Economic Integration Within Greater China: Trade and Investment Flows Between Mainland China, Hong Kong and Taiwan	Dr. Robert F. Ash and Prof. Y. Y. Kueh
8 (1/94)	North Korean Nuclear Weapons Policy: An Expected Utility Analysis	Dr. David Newman and Dr. Brian Bridges
9 (2/94)	Economic Reforms and Inequality in China	Dr. Joseph C. H. Chai and Ms. B. Karin Chai
10 (3/94)	Industrial Deregulation and Economic Restructuring in China: A GATT Perspective	Prof. Y. Y. Kueh
11 (4/94)	The Political Development of China, Taiwan and Hong Kong Since the Late 1970s: Problems and Prospects	Mr. Wong Yiu-chung
12 (5/94)	Decreasing Cost and Profit Maximization in Cournot Duopoly Models	Dr. Lei Kai-cheong
13 (6/94)CAPS	Corruption by Design:Bribery in Chinese Enterprise Licensing	Dr. Melanie Manion

**CORRUPTION BY DESIGN:
BRIBERY IN CHINESE ENTERPRISE LICENSING**

Melanie Manion, Department of Political Science, University of Rochester
Faculty of Social Sciences, Lingnan College, Hong Kong in 1994-95

This work was presented originally at the 1994 Annual Meeting of the American Political Science Association, in New York, September 1-4, 1994. I thank David Austen-Smith, Jeffrey Banks, Avery Goldstein, Nina Halpern, Michel Oksenberg, and David Weimer for helpful comments and suggestions. I thank the National Academy of Science, Committee on Scholarly Communication with China for research support.

November 24, 1994. Not for citation without the author's permission.

Abstract

This article presents a game theoretic institutional analysis of bureaucratic corruption: bribery in Chinese enterprise licensing. Formal structures and informal expectations are identified as features of "institutional design" that shape choices by strategic individuals to produce corrupt outcomes. Bribery (as an equilibrium) is deductively derived as a solution in a signaling game; the game form is empirically derived from features of institutional design. Exercises in comparative statics explore the robustness of bribery as an equilibrium when game parameter values are altered to reflect changes in institutional design. The exercises indicate that reducing corruption, in the sense of reducing bribe sizes, is relatively unproblematic. To move away entirely from corrupt equilibria, however, requires far more dramatic change in institutional design and may not be feasible through changes in formal structures alone.

CORRUPTION BY DESIGN: BRIBERY IN CHINESE ENTERPRISE LICENSING

1. Introduction.

The transition from socialist planning to a more marketized economy on mainland China, as elsewhere, has been accompanied by the growth of economic crime and the emergence of new forms of political corruption (see, e.g., Chan and Unger 1982, Liu 1983, Forster 1985, Ostergaard 1986, Myers 1989, Lee 1990, Sands 1990, Ostergaard and Petersen 1991, Liew 1993). Indeed, political corruption -- defined here as deviation from duties of public office to pursue private gain, in a manner that violates formal rules (see Nye 1967) -- has become endemic, appearing as a normal practice in many different contexts. As the formal rules reflect where the state has drawn for itself the "normative line" between the allocative roles of market and nonmarket mechanisms, the study of political corruption focuses on a key question in political economy: "the way in which wealth and market forces can undermine whatever dividing line has been fixed" (Rose-Ackerman 1978:1-2). This article explains endemic corruption as the product of choices by strategic individuals optimizing in particular contexts of formal structures and informal expectations. Put another way, structures and expectations are features of "institutional design" that shape choices to produce corrupt outcomes.

The formal analysis of particular forms of corruption as products of particular institutional designs was pursued originally by Rose-Ackerman (1978) and more recently by Shleifer and Vishny (1993). Here, however, the analysis explicitly considers the role of expectations. Moreover, here the thesis is described and tested through game theoretic

analysis: corruption (as an equilibrium) is deductively derived as a solution in a game; the game form is empirically derived from features of institutional design.

The observation (or inference) that corruption is a normal practice in a wide variety of contexts can be restated, in game theoretic terms, as the following hypothesis: corruption is an equilibrium solution in many different games, where the game form describes the institutional design of the strategic situation. This formulation has a number of advantages in establishing a research agenda for the study of corruption.

First, it indicates a methodological approach that addresses a key obstacle to research on corruption: the inherent difficulty of reliable measurement. Rigorous empirical investigation of corruption is hindered by the illegality (or impropriety) of corrupt actions, which are typically hidden from public view. A game theoretic institutional approach does not make the evidence problem disappear. It does, however, refocus empirical work, from the problematic measurement of corrupt actions to the more manageable task of describing features of institutional design. It also refocuses analytical work, from data manipulation to formal modeling.

Secondly, in addition to facilitating descriptive and explanatory rigor, a game theoretic institutional approach lends itself to exercises in comparative statics that test the robustness of corruption as an equilibrium when parameter values, reflecting institutional design, are altered. This is only sensible in the context of rapid economic reform, where new structural changes are formally adopted (if not always implemented) on a near continuous basis. Such exercises also have predictive (and implicitly prescriptive) value, indicating the possibilities and limitations for redesigning institutions through policy instruments to escape corrupt equilibria, if efficiency and distributional effects are considered to merit it. Finally, comparative statics exercises are at the same time studies in comparative institutional

analysis. As these exercises show the contribution of both structures and expectations, they explain how the same formal structures can produce different outcomes in different contexts of expectations, which define different cultures.

This article analyzes as a game a form of routine bureaucratic corruption: bribery in the enterprise licensing process that takes place in Chinese government bureaus of industry and commerce. The bribery analyzed here has the following interesting feature, which is by no means peculiar to enterprise licensing. In principle, bureaucratic rules alone govern allocation of some good or service (here, enterprise licenses) at a predetermined small price to all qualified applicants. In practice, however, qualified applicants provide additional illegal private compensation to public officials for a standard good or service. That is, corrupt overpayments are made for a good or service that is not in fixed supply and to which the applicants are, in principle, fully entitled.

Although relatively petty (compared, for example, to spectacular cases of Chinese official profiteering), this form of corruption is of particular political relevance. Here, ordinary citizens interacting normally with government officials act as accomplices of corrupt officials in sustaining bribery as a usual practice. This involvement of citizens in the routine deviation of state functionaries from the rules the state has set for itself undermines both those who rule and rules generally: it reinforces a view that the regime is incapable of governing itself, much less its citizens, and it impedes the fragile development of a norm of law.

I begin below by identifying in more detail the characteristics of bribery in enterprise licensing. I follow with an empirical description of enterprise licensing in terms of its key institutional features. I then formalize the description in a model of enterprise licensing as a signaling game and go on to pursue an explanatory aim by deriving the conditions for which

bribery constitutes an equilibrium solution (and the equilibrium bribe size). I illustrate the solution with a numerical example, using plausible values for game parameters. The game and example are the point of departure for an analysis of the value of personal connections in obtaining an enterprise license and for exercises in comparative statics, which explore the robustness of bribery as an equilibrium when parameter values are altered to reflect changes in institutional design. The comparative statics exercises allow me to make some predictive statements about the effects of recent policy changes and ongoing anti-corruption efforts on the form of corruption analyzed here.

My understanding of formal institutional design features of enterprise licensing is based mainly on official sources. The most important of these are officials interviewed at the State Administration of Industry and Commerce (SAIC), officials interviewed at licensing offices in local bureaus of industry and commerce, and documents and local reports in the SAIC departmental journal.

As noted above, the illicit character of corruption frustrates efforts at rigorous empirical measurement of corrupt transactions. I considered it useful nonetheless to do some empirical investigation into the dependent variable. To this end, I conducted unofficial interviews with Chinese entrepreneurs who had licensed enterprises since the mid-1980s. These sources supplemented official accounts with information about informal dimensions of enterprise licensing and also provided some empirical basis for the discussion of expectations relevant to bribery in enterprise licensing.

2. Bribery in Chinese Enterprise Licensing.

Chinese economic reforms in the 1980s, which transformed managerial incentives in the state sector and promoted expansion of the non-state sector, led to the emergence of many new enterprises and new forms of ownership and management. The number of registered

domestic enterprises in the collective sector grew rapidly -- from 1.5 million in 1981 to 4.2 million in 1992. A significant domestic private sector re-emerged: registered individual enterprises grew from 1.8 million in 1981 to 15.3 million in 1992; larger private enterprises emerged in the mid-1980s, with about 140 thousand registered private enterprises in operation in 1992 (*Zhongguo gongshang xingzheng guanli tongji sishi nian* 1992:3, 164; *Zhongguo gongshang xingzheng guanli nianjian* 1993:531, 555, 559). At the same time, existing enterprises in the state and collective sectors expanded, adapted, or diversified to encompass new production and business lines.

All industrial and commercial enterprises in mainland China require government authorization to engage in production or business activity. New enterprises require licenses to obtain legal status for their economic activity, and changes in the economic activity of existing enterprises require authorization through changes of license. The government department assigned to this task is the SAIC.¹

Typically, enterprise licenses authorizing specified economic activity are obtained at licensing offices in the SAIC's subordinate bureaus of industry and commerce located throughout the country. A recent Chinese study of corruption identifies these local bureaus as among a handful of government departments in which most bureaucratic corruption is concentrated (Gong 1991:8-9).² Reports on corruption within bureaus of industry and commerce cite enterprise licensing as one of a few areas in which abuses of public office and violations of law and discipline are common (see, e.g., SAIC, Investigation Group 1986; SAIC 23 July 1988, 4 Sept. 1990; Liu 1990, 1993).

Corruption in enterprise licensing typically takes the form of bribery by applicants for enterprise licenses. Payments may be cash or non-cash gifts or favors. Published Chinese reports on corruption in enterprise licensing discuss payments of illicit fees ("goodwill fees,"

"processing fees," "personal commissions," "tea fees") and undisguised cash bribes to individual officials, as well as personal loans, gifts, and invitations to dinner. To this list entrepreneurs interviewed added payments of shares in enterprises and a variety of services such as photocopying, use of private vehicles, installation of residential telephones, assistance in school placement for children, and household repairs. According to entrepreneurs interviewed, such transactions can also take place after applicants and officials have established personal connections, apart from the formal relationship defined by allocation of enterprise licenses.

Reports from anti-corruption campaigns (whatever their bias) indicate that bribe amounts vary widely. For example, in 1985 and 1986, a campaign in a district bureau in Xi'an resulted in over a hundred reported refusals of gifts and cash bribes totalling over 11,000 yuan (SAIC, Investigation Group 1986). Over a period of a few months in 1989, a campaign in a Beijing district bureau resulted in about the same number of reported refusals, but the total amount came to only about 6,000 yuan (Ma 1990). In 1988 through 1990, campaigns in twelve provinces resulted in 155,000 reported refusals of gifts and bribes totalling about ten million yuan, including individual cases of bribes in amounts over 10,000 yuan (Liu 1990). Exchanges completed and unreported are probably higher yet: for example, one licensing official in Nantong (Jiangsu province) used his position to "borrow" a total of 220,000 yuan from six different enterprises (*Zhongguo gongshang bao* 26 Mar. 1992:2).

All of the transactions noted above are officially defined as acts of impropriety that clearly violate disciplinary standards set out in SAIC regulations (SAIC 23 July 1988, 20 Mar. 1990). According to Chinese criminal law, most such transactions are also illegal. In a discussion of the laws on bribery and their interpretation in the courts, Sun (1990:47-69) identifies the substitution of material private interests for the public interest as the key

harmful feature of bribery, which harms the "normal functioning of the bureaucracy" and the "reputation of state functionaries." Consequently, the courts consider the question of specific economic loss to the state or specific social harm as immaterial to a determination that an action constitutes bribery. Also immaterial is whether or not transactions involve those with whom officials have personal connections and whether or not benefits sought are in fact obtained.³

The law defines the crime of accepting a bribe as: "any action by a state functionary ... to exact material gain or accept inappropriate (*bu zhengdang*) material gain from an individual for exploiting the resources of public office to seek benefits for that individual." In addition, "receipt in any guise of a personal commission or processing fee by a state functionary in the course of an economic transaction and in violation of state regulations" is considered as accepting a bribe. Offering a bribe is also a crime, defined as: "offering material gain to a state functionary ... for actions that exploit the resources of public office to seek inappropriate benefits" (Sixth National People's Congress, Standing Committee 21 Jan. 1988:34, 36).

These definitions are interesting for their implications about the costs of bribery. For officials, accepting an offer of inappropriate material gain to exploit public office to seek benefits for an individual constitutes the crime of accepting a bribe; for applicants, however, precisely such an offer is not a crime unless the benefits sought are themselves inappropriate. The law is quite specific on this point. If an individual is "compelled by a state functionary ... to give some material payment and no inappropriate benefits are obtained, this does not constitute the crime of offering a bribe" (Sixth National People's Congress, Standing Committee 21 Jan. 1988:36). Sun (1990:64) elaborates on these circumstances:

The benefit sought is not illegal. Rather, it is not only permitted by law and regulations, but also the individual is fully entitled to it. But because state functionaries do not perform their duties responsibly or are deliberately obstructive and coercive, the individual entitled to the benefit is faced with delay in obtaining it or difficulty in obtaining it. The individual is driven to no other alternative but to offer a bribe, contrary to his convictions. This act lacks the deliberate purpose of offering a bribe. ... If an individual finds himself compelled to offer material gain to a public official in order to obtain a benefit to which he is entitled, this is not a crime of offering a bribe.

The form of bribery analyzed here is only very subtly distinct from these circumstances. To avoid costly delays, applicants may make corrupt overpayments to licensing officials for enterprise licenses to which they are fully entitled. In making such payments, however, applicants do not know whether the bribes are overpayments or reasonable fees for valuable illicit services. This important feature of bribery in enterprise licensing is explained below, as a product of the institutional design of licensing.

3. Institutional Design of Enterprise Licensing.

The Chinese government has not set explicit limits or targets aimed at achieving some optimal number of enterprises or otherwise fixed the supply of enterprise licenses.⁴ In principle, enterprise licensing is simply authorization to engage in specific economic activity and registration of basic information about enterprises. Nonetheless, in the context of the economic reforms, enterprise licensing has been no simple matter of enterprise registration.

3.1. Information Asymmetry.

Throughout the 1980s and early 1990s, official stipulations for acceptable enterprise license

applications greatly increased in number and specificity. Relevant laws, regulations, rules, measures, notices, and opinions were periodically revised or revoked to reflect changes in economic policy orientation. One result of all this is a situation of extreme information asymmetry that can be summarized as follows: at the time they submit applications to licensing officials, applicants usually do not know whether or not their materials meet the standards defining acceptable applications, but officials do know.

Because enterprise licensing was not well established in the pre-reform period, official stipulations defining acceptable applications for enterprise licenses are all fairly recent. An initial set of regulations on enterprise licensing was issued in 1982. By 1992 the government and its departments had issued over 130 documents on enterprise licensing (SAIC Interview 92121).⁵ Many stipulations are general to all enterprises: all applicants are required to complete standardized application forms and submit documentation on financial resources, place of production or business, eligible employees, and prior examination and approval by the government departments that have authority over the trades or industrial sectors of the proposed enterprise economic activities. There are also stipulations about acceptable enterprise names and acceptable designations of form and scope of enterprise economic activities. In addition, local governments, local bureaus of industry and commerce, and other local government departments issue their own stipulations on enterprise licensing.

A great many other requirements are defined for specific types of products and enterprises. These requirements are met by obtaining permits from various government departments -- including departments of city planning, public health, environmental protection, and (for some designated "special trades") public security. The greatest number of required permits are those issued by government economic departments associated with the planned economy. In late 1992, applicants for enterprises could require 200 or more

permits prior to submitting applications to licensing offices. Requirements exceeding 100 permits were not uncommon (SAIC Interview 92121).

A strict adherence to these official stipulations creates incentives for otherwise legal economic activities and enterprises to go unlicensed and, therefore, unmonitored by the department established specifically for these purposes. Moreover, standards communicated in government documents reflect economic policy at the time they are formulated and issued -- and almost as soon as standards began to be formalized in the early 1980s, local bureaus of industry and commerce found that their specific content lagged behind subsequent changes in economic policy orientation. An early article in the SAIC journal asked: what ought local officials to do when what appears to be reasonable is not strictly legal, and vice versa? It concluded that regulations not conforming to the "new situation" of economic reform ought not necessarily to be observed (Fan 1984).

Leading officials in the SAIC have tended to agree with this view. They noted in interviews that local bureaus of industry and commerce are required in principle to license enterprises in accordance with SAIC regulations. In practice, however, the SAIC has permitted the bureaus to ignore some regulations because of "the contradiction between the old and new systems." The criterion used to evaluate local implementation is not official standards but "concrete results," mainly as these relate to economic policy orientation (SAIC Interviews 93081 and 93082).

Not surprisingly, then, official stipulations on enterprise licensing do not reflect operative standards communicated to licensing officials by leaders in local licensing offices. In practice, at least some (and after 1992 a great many) stipulations are selectively waived.⁶ Through channels such as office meetings and organized study of official documents, leaders in local licensing offices communicate to subordinate officials in charge of evaluating license

applications what is "really required" and what is "not important to fuss about" (Licensing Office Interview 92121).

It is clear from published accounts and interviews with entrepreneurs that applicants are normally unfamiliar with the various official and operative standards that define acceptable applications for enterprise licenses (see, e.g., Fang 1991; Wan 1992). Documents that contain official stipulations are not easily accessible.⁷ Both official and operative standards are too many, too detailed, and too frequently changing to be mastered by outsiders. Indeed, according to a leading SAIC official, it is practically impossible for anyone without considerable experience inside the system to know what is really required to license an enterprise (SAIC Interview 93082). As a result, applicants submit applications they know cannot meet the stringent and largely unfamiliar official standards, although they do not know whether or not they meet operative standards.

3.2. Evaluation of Applications as the Main Locus of Bribery.

The SAIC does not dictate to local bureaus of industry and commerce internal bureaucratic procedures. Procedures vary, therefore, across licensing offices (and also over time). Four basic sequential procedures are part of enterprise licensing in all offices, however. They are: initial evaluation of application materials to determine their acceptability, investigation and verification of materials to determine their validity, approval of enterprise licenses, and issue of licenses. According to leaders at local licensing offices, evaluation of application materials is the most important and demanding of these administrative tasks. It is the only position that brings licensing officials into routine contact with applicants. Not surprisingly, it is the main locus of bribery in enterprise licensing.

Evaluation of application materials requires officials to apply and explain standards. Officials responsible for evaluation are supposed to possess a thorough knowledge of formal

and operative standards for acceptable applications and be able to exercise bureaucratic discretion responsibly. Temporary personnel are not assigned to this position, and (barring discovery of irregularities) rotation of officials assigned to this position is uncommon.

Local licensing offices have territorially-based monopolies on issuing licenses for enterprises in their localities. Officials in charge of evaluation of application materials can also enjoy a monopoly: in large licensing offices, individual officials often specialize in applications for particular forms of enterprise (organized by territorial scope of operation, ownership sector, or economic activity). In smaller offices, applicants in a single queue usually present themselves to officials on a first-come-first-served basis.

Reports from local bureaus of industry and commerce rationalize specialization in terms of efficiency gains, but acknowledge the greater opportunities for bribery inherent in monopoly power. The sequential organization of licensing procedures is supposed to check these opportunities: to promote clean government through mutual monitoring in licensing (see, e.g., Kong 1990; Zhang 1990; Dalian Municipality, Jinzhou District Bureau of Industry and Commerce 1991; Hunan Province, Hengyang Municipal Bureau of Industry and Commerce, Office of Supervision 1992). Acceptance of application materials is, therefore, routinely followed by investigation and verification of materials by a different set of licensing officials. In the past few years, licensing offices have reduced investigation and verification requirements and substituted more stringent post-licensing inspection of enterprises. To the extent that investigation and verification (or inspection) procedures are thorough and legitimate, these arrangements provide checks on officials who evaluate application materials.⁸ A third procedure -- approval -- can act as a further check. But approval usually issues from the licensing office head (or deputy head), who has many other responsibilities too and is unlikely to turn up any but the most obvious inadequacies.

Investigation and verification, approval, and inspection follow evaluation and acceptance of materials. Such checks as these later procedures provide are absent, therefore, if application materials are rejected: the application process is provisionally terminated if materials are evaluated as unacceptable. Some licensing offices require officials to provide applicants with written explanations with rejected applications, to avoid misunderstandings about what is required to bring applications up to standard. Even so, no routine mechanism exists to monitor rejections. For the most part, decisions to reject applications are independent, unmonitored, and final.⁹

3.3. Expected Costs of Rejected Applications.

When licensing officials evaluate and reject applications, they indicate to applicants what changes or additional materials are required. In principle, acceptance is always attainable -- but not necessarily at first try. Rejected applications are associated with different expected costs for applicants and officials.

Consider first the cost to applicants of making changes or obtaining the additional approvals, permits, or other materials in which (officials signal) their applications are deficient.¹⁰ This process of revising (and resubmitting) application materials can consume great amounts of time. Entrepreneurs I interviewed consider imposition of time costs as the greatest discretionary power licensing officials possess. In their view, bureaucratic standards provide officials with many possible reasons to reject applications and impose time costs. These are also the costs entrepreneurs most want to avoid paying. It is difficult to estimate how long the process of revising will take (estimates ranged from several months to a year) and how exacting licensing officials will be in evaluating revised applications. For entrepreneurs, time is critical (as one commented: "time is money"), because lost time can mean lost market opportunities.

When entrepreneurs comment that licensing officials can reject applications more or less at will and stall acceptance for a long time, this reflects beliefs about low expected costs to officials of rejecting applications. These beliefs are consistent with the framework of monitoring and incentives within which licensing officials actually work. Officials incur no costs in rejecting applications that are by operative standards unacceptable: this is doing their job. Rejecting applications that are in fact acceptable is not similarly costless, but because the probability of detecting rejections and the penalties imposed if detected are both quite low, the expected costs of rejecting acceptable applications are low.

The question of penalties is straightforward. For reasons discussed in section 3.1 above, applications for enterprise licenses are unlikely at first try (or indeed ever) strictly to meet official standards of acceptability. While applications are more likely to meet operative standards, the continued existence of stringent official standards allows officials to reject applications at relatively low cost. These standards are a resource that can be exploited in rejecting applications: if detected, officials who reject acceptable applications are overly strict, but not obviously arbitrary. Penalties may be imposed for bureaucratic workstyle, but these are unlikely to be very serious.¹¹

Moreover, rejections of acceptable applications are unlikely to be detected at all. As discussed above, only applications that have been accepted are sent on for further consideration by other licensing officials. In addition, because enterprise licensing is a territorial monopoly (and, if there is specialization, a monopoly within individual licensing offices), there is no implicit monitoring through competition. Unless they choose to locate in a different locality, entrepreneurs whose applications have been rejected cannot try at another licensing office to obtain a second opinion. When evaluation procedures are not specialized by type of enterprise, allowing applicants to choose among licensing officials, entrepreneurs

whose applications are rejected are apparently nonetheless unlikely to obtain a reversal from co-workers in the office. One entrepreneur explained this as follows: "These people work in the same office day after day, their relationship is an ongoing one. They would not want to do anything to upset this relationship. ... I am only someone who comes in for a license, I am not someone at work. So if one official says something, the other does not contradict it" (Entrepreneur Interview 93074).

There is a formal administrative appeals process that applicants can take up if they believe officials have acted improperly in rejecting applications for enterprise licenses (see SAIC 20 July 1990). For a number of reasons, however, applicants are unlikely to resort to formal appeals. To begin with, applicants do not know whether or not their applications are acceptable. This means that applicants who choose the appeals process do so without certainty that their complaint is valid, but with certainty that official standards are on the side of the official. Further, the appeals process does not expedite applications: waiting for the appropriate office to complete an investigation (and perhaps conclude with a confirmation of the rejection) is not an attractive choice for entrepreneurs who value time highly.

Administrative appeals are unappealing for another reason too. Entrepreneurs I interviewed consider complaints -- especially formal complaints -- a poor strategy, because: "you and this system will be in contact for a long time after you start up your enterprise," and "the relationship with the bureau of industry and commerce is very important" (Entrepreneur Interview 92123). Enterprises are required to submit annual reports and pay annual fees to licensing offices. They are required to relicense if there are changes in ownership, location, or economic activity. Licensing new enterprises may be a one-time encounter between applicants and particular licensing officials, but the relationship between enterprises and licensing offices (and bureaus of industry and commerce) is an ongoing one.

Finally, if licensing officials act improperly in rejecting applications, there is always the possibility that they operate in an environment in which such actions are protected, accepted, or at least not actively resisted by local leaders. In such cases, investigation of appeals is unlikely to meet with success. I take up this issue in greater detail below, in a discussion of sanctions against bribery.

3.4. Expected Costs of Bribery.

Bribery is an alternative to revising and resubmitting applications after they are rejected. The bribe per se is a cost for applicants and a benefit for officials. In addition to the bribe, there are expected costs associated with bribery. These reflect the probability of detection and sanctions if detected. Expected costs of bribery are relevant to both applicants and officials, although they differ in value. They also depend significantly on whether or not applications are in fact acceptable. Licensing officials can normally be expected to reject applications that do not meet operative standards of acceptability. But officials seeking bribes may also reject acceptable applications.

Consider the expected costs to applicants. If their applications are in fact acceptable, then the probability that bribery will be detected is low: if applications are acceptable, then investigation, verification, approval, and inspection procedures will reveal no basis for an illicit exchange and raise no suspicions. Further, if applications are acceptable, bribe offers are not unambiguously bribery in the legal sense. If the bribery is detected, the basic acceptability of the rejected applications offers applicants the opportunity to claim "no other alternative but to offer a bribe." In such circumstances, bribe offers do not constitute a crime of offering a bribe (Sun 1990:64). In sum, if rejected applications are acceptable, applicants are likely to incur no costs beyond the bribe per se.

Both the probability of detection and penalties if detected are higher for applicants if

their applications are unacceptable. In such circumstances, bribe offers constitute bribery in the legal sense. The crime of bribery is discussed in the Criminal Law (Fifth National People's Congress 1 July 1979) and in clarifying documents (see especially Fifth National People's Congress, Standing Committee 8 Mar. 1982; Sixth National People's Congress, Standing Committee 21 Jan. 1988; Supreme People's Court and Supreme People's Procuratorate 6 Nov. 1989). For offering a bribe, Chinese criminal law specifies sanctions ranging from forced labor or imprisonment for terms of up to five years to life. Long prison terms are for "serious circumstances" or circumstances of "serious loss to the state and collective interest." But none of the clarifications by Sun (1990:56-59) suggest that bribery to induce licensing officials to accept unacceptable applications falls under the category of serious circumstances. Moreover, published Chinese accounts of bribery cases suggest that applicants who offer bribes are treated very leniently unless they commit other crimes as well.¹²

For licensing officials, accepting bribes -- regardless of whether applications are acceptable or unacceptable -- meets the legal definition of bribery. If the bribery is detected (which is more likely if the application is unacceptable), legal and administrative sanctions apply. Sanctions against officials who accept bribes depend on the extent of harm caused by the bribery and the bribe size. Officials who accept bribes of 10,000 yuan or more can be imprisoned for life or receive the death penalty. For accepting smaller bribes, officials can be sentenced to forced labor or imprisonment for up to seven years. In "serious circumstances," this sentence can be increased to ten years; in "minor circumstances," it can be reduced or waived altogether and administrative disciplinary sanctions by the government substituted. Sun (1990:56-59) cites as "serious circumstances": bribery causing great harm to the state or collective interest, violation of laws in addition to bribery, participation in a bribery clique,

frequent acceptance of bribes, soliciting bribes, refusal to confess after bribery is discovered, bribery involving citizens of foreign countries, and bribery involving national treasures. Examples of "minor circumstances" are small bribes and situations where officials turn themselves in, show remorse, and take the initiative to return bribes. "Minor circumstances" also include those in which officials are guilty of only "an ordinary travesty of justice" (*yiban zangfa*) that violates government regulations but no law.

If circumstances of bribery are minor, officials may be sanctioned with government administrative disciplinary measures. These are clearly set out in State Council regulations (see especially 13 Sept. 1988) and SAIC regulations (see especially 20 Mar. 1990). There are eight grades of administrative discipline: warning, record of error, record of major error, demotion of rank, demotion of office, dismissal from office, expulsion from cadre ranks with probation, expulsion from cadre ranks. The SAIC regulations do not specify specific measures for specific violations, but recommend sanctions take into account the seriousness of the violation and the official's attitude toward his misconduct. They suggest, for example, demotion of rank, demotion of office, or dismissal from office in "fairly serious circumstances," where the official has not reformed himself and the consequences of the violation have been bad.

A report (Tu 1991) on obstacles to clean government in bureaus of industry and commerce indicates that officials assigned to implement measures on clean government often themselves accept "social trends" such as bribery and do not seriously attempt to resist routine violations. It notes too that conscientious officials face great interference from bureau leaders, who oppose investigation of abuses of power because they believe it harms the reputation of the bureaus. Officials investigating violations have been subject to discrimination in career opportunities. In more extreme cases, they have been threatened and

beaten.

Penalties actually meted out to licensing officials for accepting bribes can be very light. The Nantong official who "borrowed" 220,000 yuan was obliged to return the money and a major error was recorded in his file (*Zhongguo gongshang bao* 26 Mar. 1992:2). The SAIC journal reported as a positive example the Zhuhai municipal bureau of industry and commerce experience: in the period from 1982 to 1991, a district bureau had dismissed only three officials for accepting bribes (Guangdong Province, Zhuhai Municipal Bureau of Industry and Commerce 1991). Anti-corruption measures adopted by a licensing office in a Shaanxi county were also reported as an example: officials discovered to have received gifts or accepted invitations to dinner were required to confess publicly and give up their monthly bonus, but they incurred no administrative penalties unless they had accepted cash bribes of 300 yuan or more. Nor were they rotated out of their (lucrative) positions in the licensing office unless they had accepted larger cash bribes (Shaanxi Province, Mei County Bureau of Industry and Commerce 1990).

In considering expected costs of bribery, the discussion above presumes that bribes offered are accepted, which is equivalent to presuming that no officials refuse bribes. But included in expected costs to applicants of offering bribes is some cost associated with attempting to bribe officials who do not accept bribes. Presumably, these costs are fairly low: applicants can make bribe offers sufficiently ambiguous to back away from them should officials not respond positively; corrupt officials may signal informally that rejected applications can be accepted without revisions. Nonetheless, signals can be misinterpreted. Clean officials may refuse bribe offers and simply require applicants to revise and resubmit, in accordance with their formal signal of rejection. But they may also respond to bribe offers more negatively. For example, they may adopt a more bureaucratic workstyle in reviewing

resubmitted applications or may report bribe offers. Expected costs of offering bribes include, then, costs associated with attempting to bribe clean officials.

3.5. Priors for Encountering Clean Officials.

Prior to submitting their applications to licensing officials, entrepreneurs already have some notions about how these officials are likely to act. These are beliefs about whether or not the officials they encounter will mislead them about the status of applications, arbitrarily reject applications as unacceptable, and accept bribes in exchange for reversing rejections of applications. I summarize these beliefs as priors about the likelihood of encountering clean officials.

In a report on clean government (Liu 1990), the SAIC head acknowledged a poor public image of officials working at basic levels of the system, but indicated that the situation had improved since the mid-1980s. He cited (without explanation) figures from Henan province on the proportion of personnel who violate laws and discipline in the administration of industry and commerce: that proportion had dropped from more than 10 percent before 1985 to about half a percent by 1990. Whatever the basis for these figures (i.e., whether they reflect detected violations or estimated actual violations), both are probably too optimistic. Judging from interviews with entrepreneurs, applicants typically estimate as low (below, perhaps well below, 0.5 percent) the probability of encountering clean licensing officials.

Entrepreneurs interviewed also expressed beliefs about actions of other applicants. When asked about the proportion of applicants who follow the application process from beginning to end without bribery, entrepreneurs replied that "most," "everyone," or "over half" resort to some form of bribery. These beliefs about what others are doing support low priors for encountering clean licensing officials: a belief that most other applicants are offering bribes for licenses implies a belief that bribery in enterprise licensing is a usual

practice.

Some entrepreneurs I interviewed conceded that there were undoubtedly some honest and efficient officials. Yet, although leaders of local licensing offices describe their offices as service-oriented, entrepreneurs do not generally seem to view them as such. They described a bureaucracy with practically no norm of service, in which officials typically must see some "advantage" (*haochu*) before they will do their jobs. Given this conception, applicants do not approach officials expecting service, much less asserting it as a right. One entrepreneur observed: "Very rarely will you see someone go into the bureau of industry and commerce and be demanding, with the notion that he is entitled to start up an enterprise and the bureau of industry and commerce has a job to license him" (Entrepreneur Interview 93074). Applicants approach officials as supplicants, knowing that goodwill is required and believing that goodwill is not dispensed free of charge but must be compensated privately. Related to the notion that service requires additional compensation is the knowledge, volunteered by many entrepreneurs interviewed, that licensing officials have low salaries relative to the applicants they encounter.¹³ The basic view that officials are probably not efficient or honest functionaries who dispense free goodwill derives also from experiences with other mainland Chinese bureaucracies and a general conception of how these bureaucracies and their bureaucrats work.

4. Enterprise Licensing as a Signaling Game.

The institutional features of enterprise licensing described in detail above are the empirical basis for the game-theoretic analysis in this section. Enterprise licensing is modeled here as a multi-stage signaling game presented in extensive form. I derive the conditions for which bribery is an equilibrium in the game (and the equilibrium bribe sizes) and offer a numerical example using plausible game parameter values.

The game is a model of the procedure, identified above as an important locus of bribery, in which applicants submit application forms and accompanying materials to licensing officials for initial evaluation and (if accepted) further processing. The game form is illustrated in figure 1 and the payoff structure is summarized in table 1. (Base case values in table 1 are for the example at the end of this section.) Note that most payoffs in the game are costs. Most of these costs are products of the probability of detection and penalties if detected.

4.1. Period 0: Actions by Nature.

The game has two players. Player 1 (the official) has one of two potential types: "clean" and "corrupt." Player 2 (the applicant) also has one of two potential types, based on the application he presents: "acceptable" application and "unacceptable" application. Define an acceptable application as one that meets the threshold for acceptance when evaluated by operative standards set by leaders in local licensing offices and communicated to licensing officials at lower levels. Conversely, an unacceptable application is one that does not meet the threshold for acceptance when evaluated by these standards.

The official has complete information: he knows with certainty both his own type and the applicant's type. The applicant knows neither the official's type nor his own type, but must estimate these based on incomplete information. Let p_1 denote the applicant's estimated prior probability that the application is acceptable; $1 - p_1$ denotes the prior probability that the application is unacceptable. Let p_2 denote the applicant's estimated prior probability that the official is clean; $1 - p_2$ denotes the prior probability that the official is corrupt.

4.2. Period 1: First Action by the Official.

In period 1 only the official takes an action a_1 . The action space has two elements: "accept" the application and "reject" the application. If the official accepts the application, the game

ends in this period.

The applicant has payoff 0 in this period -- whether the official accepts or rejects the application. This is because the game begins with the submitted application: if the official accepts the application, the applicant has incurred only the cost of preparing the application, which is prior to the game; if the official rejects the application, the applicant incurs costs that depend on actions chosen in period 2 and (sometimes) in period 3.

Payoffs to the official depend on whether or not the application is in fact acceptable. If the application is acceptable, the official has payoff 0 if he *accepts* it; if the application is unacceptable, the official has payoff 0 if he *rejects* it. In both cases, the official is doing his job (and payoff 0 indicates no costs).

Define a clean official as one who always accepts acceptable applications, always rejects unacceptable applications, and always rejects bribes. A corrupt official may do otherwise. If the application is acceptable, the corrupt official has payoff $-A_1$ if he rejects it. This reflects the cost of harassing a qualified applicant by rejecting an acceptable application. If the application is unacceptable, the corrupt official has payoff $-C_1$ if he accepts it. This reflects the cost of allowing an unqualified applicant to get through.

From a myopic perspective, both officials prefer in period 1 to accept an acceptable application and reject an unacceptable application, incurring payoffs of 0 (i.e., no costs) for these actions. However, a corrupt official would prefer a bribe, which in this game he can obtain only if the application is rejected in period 1.¹⁴ For this reason, a corrupt official may choose to reject an acceptable application and incur a payoff of $-A_1$ in period 1, in the expectation of gaining a positive payoff with a bribe later in the game.¹⁵

4.3. Period 2: Action by the Applicant.

In period 2 the applicant takes an action a_2 (a response to a_1 "reject" in period 1). The action

space has two elements: offer a "bribe" to the official and "revise and resubmit" the application according to specifications set out by the official who rejects the application. In setting out these specifications, the corrupt official evaluating an unacceptable application presents the applicant with costs of revising and resubmitting that approximate those of an unqualified applicant.

If the applicant revises and resubmits the application, the game ends because the official is obliged to accept it.¹⁶ Payoffs in this period are 0 for the official. (If the application is in fact acceptable, the official's payoffs in the end will include the cost A_1 associated with harassment in period 1.) Payoffs are $-C_2$ for the applicant. This is the cost of revising and resubmitting the application. If the applicant offers a bribe, the game continues, with payoffs for both players determined by the action chosen in period 3.

4.4. Period 3: Second Action by the Official.

In period 3 the official takes an action a_3 (a response to a_2 "bribe" in period 2). The action space has two elements: "accept" the bribe and the application and "reject" the bribe and the application (again).

If the official is clean, the application is by definition unacceptable: otherwise it would have been accepted in period 1. The bribe and application are rejected, with payoff 0 for the official: he is simply doing his job. The applicant has no alternative but to revise and resubmit the application,¹⁷ with the resulting payoff $-A_2 - C_2$. This reflects the costs of offering a bribe to a clean official and revising and resubmitting the application.

Now consider the situation if the official is corrupt. If the corrupt official rejects the bribe and the application, his payoff is 0 in this period. (Again, if the application is in fact acceptable, the official's payoffs in the end include the cost A_1 of harassment in period 1.) As above, the applicant has no alternative but to revise and resubmit the application, with

resulting payoff $-C_2$, reflecting the cost of this action.¹⁸

But the corrupt official may accept the bribe and application. His payoffs then depend on whether or not the application is in fact acceptable. If the application is acceptable, he has payoffs $M - B_1$. This is the bribe (a benefit for the official) minus the cost of accepting a bribe from a qualified applicant.¹⁹ The applicant has payoff $-M$, the bribe (a cost for the applicant). If the application is unacceptable, the official has payoff $M - D_1$. This is the bribe he receives minus the cost of accepting a bribe and application from an unqualified applicant.²⁰ The applicant's payoff is $-M - B_2$, which is the bribe plus the cost of bribing an official to accept an unacceptable application.

4.5. Analysis.

The interesting question is what the applicant will do when his application is rejected in period 1. Assuming (as I do here) that he does not exit the bureaucratic process altogether, the applicant may choose either to offer a bribe or to revise and resubmit the application. If he chooses to offer a bribe, he must also choose a bribe size. The applicant must make these choices without knowing where he is located on the game tree: after the application is rejected in period 1, he knows only that he has not submitted an acceptable application to a clean official. He does not know whether he has submitted an acceptable application to a corrupt official (node α), submitted an unacceptable application to a clean official (node β), or submitted an unacceptable application to a corrupt official (node γ).

To solve for the conditions in which bribery constitutes an equilibrium, I follow the usual analytic practice of starting at the bottom of the game tree and working by backward induction. Starting at the bottom of the game tree, *supposing the applicant offers a bribe, how big must the bribe be in order for it and the application to be accepted?* The answer depends on the costs to the official of accepting the bribe. These costs vary, depending on

the applicant's type and the official's type. If the applicant is at node β , by definition no bribe can be big enough to tempt the official to accept it: at this node, the application is unacceptable and the official is clean. A clean official rejects all unacceptable applications and all bribes. This is reflected in the official's payoff $-\infty$ of accepting a bribe.

Let m^β denote the bribe the official will accept if the applicant is at node β .

Then $m^\beta = \infty$. The official accepts no bribe, however big.

If the applicant is at node γ , the official may accept a bribe: at this node, the application is unacceptable but the official is corrupt. If the official rejects the bribe and application, he incurs no cost. In order for him to accept the bribe and application it must at least meet his cost of doing so, which is D_1 .

Let m^γ denote the bribe the official will accept if the applicant is at node γ .

Then $m^\gamma \geq D_1$. The minimum bribe the official will accept is D_1 .

If the applicant is at node α , again the official may accept the bribe: at this node, the application is acceptable and the official is corrupt. In accepting the bribe and application, the corrupt official incurs a cost of B_1 . But at this node it is not costless for the official to reject the bribe and application: as the application is in fact acceptable, having required the applicant to revise and resubmit it is harassment of a qualified applicant, which carries a cost to the official of A_1 . In choosing whether or not to accept a bribe at this node, the official takes into account that in rejecting it he is obliged to pay A_1 . This situation reduces (i.e., from B_1) the bribe the official requires in order to make it worth his while to accept.

Let m^α denote the bribe the official will accept if the applicant is at node α .

Then $m^\alpha \geq B_1 - A_1$. The minimum bribe the official will accept is $B_1 - A_1$.

Further, as $D_1 > B_1 > A_1$, then $m^\gamma > m^\alpha$.²¹ This implies that, whether or not the application is in fact acceptable, a corrupt official will accept any bribe greater than or equal to m^γ and reject any bribe less than m^α .

Given the bribes specified above for different combinations of applicant and official types and moving up the game tree to the applicant's choice, *if the applicant chooses to offer a bribe, which bribe will he offer?* The applicant does not want to offer a bribe bigger than needed for the application to be accepted (e.g., m^γ if he is at node α), nor does he want to offer a bribe he expects will be rejected (e.g., any bribe if he is at node β or m^α if he is at node γ).

Clearly, the bribe to offer (including here no bribe, i.e., a bribe of 0) depends on whether the applicant is at node α (acceptable application, corrupt official), node β (unacceptable application, clean official), or node γ (unacceptable application, corrupt official). What are the respective probabilities of being at these nodes? They are not the product of the applicant's prior probabilities about the three combinations: by the time the applicant has reached these nodes, he has acquired information that allows him to update those priors -- he has learned that he has not submitted an acceptable application to a clean official. I model the calculation of these new probabilities as a Bayesian updating of priors, given rejection of the application in period 1. Let A denote an acceptable application, and $\bar{A}$ denote an unacceptable application. Let r denote rejection of the application in period 1. Let C denote a clean official, and $\bar{C}$ denote a corrupt official.

$$\text{By Bayes' rule: } p(A|r) = \frac{p(A \text{ and } r)}{p(r)}$$

$$\text{Substituting the applicant's priors yields: } p(A|r) = \frac{p_1 - p_1 p_2}{1 - p_1 p_2}$$

This is the probability of an acceptable application, given rejection in period 1.

$$\text{Similarly, by Bayes' rule: } p(C|r) = \frac{p(C \text{ and } r)}{p(r)}$$

$$\text{Substituting the applicant's priors yields: } p(C|r) = \frac{p_2 - p_1 p_2}{1 - p_1 p_2}$$

This is the probability of a clean official, given rejection in period 1.

$$\text{Again, by Bayes' rule: } p(\bar{C}|r) = \frac{p(\bar{C} \text{ and } r)}{p(r)}$$

$$\text{Substituting the applicant's priors yields: } p(\bar{C}|r) = \frac{1 - p_2}{1 - p_1 p_2}$$

This is the probability of a corrupt official, given rejection in period 1.

These conditional probabilities can be used to compute the updated probabilities of being at nodes α , β , and γ .

The applicant knows after rejection in period 1 that he has not submitted an acceptable application to a clean official. Therefore, if the application is acceptable, given rejection, the official must be corrupt. The probability of being at node α is simply the probability of having an acceptable application, given rejection in period 1:

$$p(\alpha) = p(A|r) = \frac{p_1 - p_1 p_2}{1 - p_1 p_2}$$

If the application is unacceptable, however, rejection in period 1 gives the applicant no information about the official's type. The probability of being at node β must take into account the probability that the application is unacceptable and the probability that the official is clean, with both probabilities given rejection in period 1:

$$p(\beta) = p(\bar{A}|r) p(C|r)$$

And as $p(\bar{A}|r) = 1 - p(A|r)$, then

$$p(\beta) = p(\bar{A}|r) p(C|r) = \frac{p_2 - 2 p_1 p_2 + p_1^2 p_2}{(1 - p_1 p_2)^2}$$

Similarly, the probability of being at node γ must take into account the probability that the application is unacceptable and the probability that the official is corrupt, both probabilities given rejection in period 1:

$$p(\gamma) = p(\bar{A}|r) p(\bar{C}|r) = \frac{1 - p_1 - p_2 + p_1 p_2}{(1 - p_1 p_2)^2}$$

These updated priors -- conditional probabilities of being at nodes α , β , γ , respectively, given rejection in period 1-- add up to 1.

Returning now to the question posed above, *if the applicant chooses to offer a bribe, which bribe will he offer?* The answer can be computed by comparing the expected payoff of

offering the minimum of m^α with the expected payoff of offering the minimum of m^γ . (As the appropriate bribe at node β is 0, this calculation is not relevant here.) If the applicant chooses to offer a bribe, he will offer the bribe with the highest expected payoff (in this analysis, the lowest expected cost). These expected values take into account the probabilities of being at nodes α , β , and γ and the cost of offering a bribe (m^α or m^γ) at each of these nodes. For example, the calculation takes into account that if the applicant is at node β (unacceptable application, clean official), neither bribe will be accepted: the cost to the applicant will be $A_2 + C_2$, which is the cost of offering a bribe to a clean official plus the cost of revising and resubmitting (because the clean official will reject the bribe and not reverse the original rejection of the application). It also takes into account that a bribe of m^α is too small to be accepted at node γ (unacceptable application, corrupt official): the cost to the applicant of offering this bribe at node γ is C_2 , the cost of revising and resubmitting (because the bribe is not big enough to be accepted, even though the official is corrupt). These expected costs are as follows:

E (offering m^α , the smaller bribe) =

$$\frac{p_1 - p_1 p_2}{1 - p_1 p_2} \cdot m^\alpha +$$

$$\frac{p_2 - 2 p_1 p_2 + p_1^2 p_2}{(1 - p_1 p_2)^2} \cdot (A_2 + C_2) +$$

$$\frac{1 - p_1 - p_2 + p_1 p_2}{(1 - p_1 p_2)^2} \cdot C_2$$

E (offering m^y , the bigger bribe) =

$$\frac{p_1 - p_1 p_2}{1 - p_1 p_2} \cdot m^y +$$

$$\frac{p_2 - 2 p_1 p_2 + p_1^2 p_2}{(1 - p_1 p_2)^2} \cdot (A_2 + C_2) +$$

$$\frac{1 - p_1 - p_2 + p_1 p_2}{(1 - p_1 p_2)^2} \cdot (m^y + B_2)$$

If an applicant chooses to bribe, he will offer the bribe with the lowest expected cost. That is:

If $E(\text{offering } m^a) > E(\text{offering } m^y)$, the applicant offers m^y minimum; if $E(\text{offering } m^y) > E(\text{offering } m^a)$, he offers m^a minimum.

But will the applicant choose to offer a bribe at all? He will, if the cost of *not* offering a bribe (which is C_2 , the cost of revising and resubmitting the application) exceeds the expected cost associated with offering a bribe. That is:

If $E(\text{offering } m^a) > E(\text{offering } m^y)$ and $C_2 > E(\text{offering } m^y)$, the applicant offers minimum bribe m^y .

If $E(\text{offering } m^y) > E(\text{offering } m^a)$ and $C_2 > E(\text{offering } m^a)$, the applicant offers minimum bribe m^a .

But if $E(\text{offering } m^a) > C_2$ and $E(\text{offering } m^y) > C_2$, the applicant chooses C_2 (revise and resubmit, do not bribe).²²

In sum, bribery is an equilibrium when C_2 is greater than the expected cost of offering either the smaller bribe m^α or the bigger bribe m^γ . And the equilibrium bribe is the bribe associated with the smaller of these two expected costs. When C_2 is a smaller cost than the expected costs associated with offering either the larger or smaller bribe, then bribery is not an equilibrium solution: the applicant is better off to offer no bribe, but instead to respond to a rejection by revising and resubmitting the application. The conditions under which bribery is or is not an equilibrium (and, if an equilibrium, the equilibrium bribe size) depend, then, on the expected costs of offering m^α and m^γ (given in the formulas above) relative to the value of C_2 and relative to each other.

4.6. Numerical Example.

To illustrate the solution above, I offer a numerical example. I assign to game parameters some values that are consistent with the empirical account in section 3 and appear to me plausible. These base case values are presented in table 1. I assign a value of 0.4 to p_1 , the prior probability of submitting an acceptable application, and the same value to p_2 , the prior probability of encountering a clean official. Substituting the assigned values into the formulas above, I calculate the expected costs of offering m^α and m^γ , respectively, and compare the lowest of these values with the cost of revising and resubmitting the application.²³ Results are as follows: $E(\text{offering } m^\alpha) = 24.24$; $E(\text{offering } m^\gamma) = 24.16$; the lowest of these (m^γ) is also lower than the cost of revising and resubmitting the application ($C_2 = 32$). *At these assigned values, bribery is an equilibrium, and the equilibrium bribe is m^γ , the larger of the two bribes.*²⁴

5. The Value of Personal Connections.

The game presented above models the strategic interaction between a licensing official with perfect information and an applicant with imperfect information. Many entrepreneurs

interviewed altered this information asymmetry by arranging transactions through personal connections. Personal connections are relationships with a history that is prior to (and apart from) the specific relationship defined by the formal licensing process: personal connections establish terms of familiarity between applicants and licensing officials. Personal connections include already established informal direct connections between applicants and officials who evaluate their applications and (more commonly) indirect connections through other parties. When applicants encounter licensing officials as "familiar acquaintances" (*shuren*), they expect the encounter to be different from that modeled in section 4 above. Specifically, they expect officials will do their best to help them and will certainly not attempt to deceive them. This does not come free of charge. Simply by activating personal connections, applicants begin the process of making payments or incurring obligations to make payments in the future. Payments are typically non-cash gifts or favors. They may be paid (or owed) to licensing officials directly or to other parties who act as middlemen, taking on responsibility for payments to licensing officials.

Put another way, choosing to exploit personal connections is equivalent to making a payment in some amount before starting the process of enterprise licensing. In return for upfront payments, applicants get reliable information about their own types (i.e., whether applications are acceptable or unacceptable) and about officials' types. Unlike bribes, however, these payments are not illicit (for applicants or officials): they are simply private compensation to acquaintances for reliable, non-confidential expertise.²⁵

Why do some applicants choose to transact through personal connections? In the formulation above, the value to applicants of personal connections in the licensing process is *the expected value of perfect information*, which transforms the signaling game in section 4 above into a non-game. This expected value can be calculated and compared to the expected

value of the signaling game. Assuming that the latter value is larger, the difference between the two is the maximum amount applicants will pay (or commit to pay) as upfront "connection fees."

As in the signaling game, I assume the application is acceptable or unacceptable, with respective prior probabilities of p_1 and $1 - p_1$. Similarly, I assume the official (now a familiar acquaintance) is clean or corrupt, with respective prior probabilities of p_2 and $1 - p_2$. I assume also that a connection fee is transacted prior to the interaction (described below) between applicant and official.

If the application is acceptable, the official arranges for it to be accepted. Payoffs to the applicant and the official are 0. If the application is unacceptable, the official offers this information and the applicant offers a bribe in the amount of m' (the bigger bribe in the signaling game, covering D_1 , the cost to a corrupt official of accepting an unacceptable application). Payoffs depend on whether the official is clean or corrupt. A clean official rejects the bribe and makes no arrangements for the application to be accepted. The clean official has a payoff of 0; the applicant has a payoff of $-C_2$, which reflects the cost of revising and resubmitting the application. That is, I assume here that a clean official is clean regardless of whether the applicant is a stranger or an acquaintance, but that there is no cost to the applicant associated with offering a bribe to a clean official if he is an acquaintance (i.e., no A_2). A corrupt official accepts the bribe and arranges for the application to be accepted: the official has a payoff of $m' - D_1$; the applicant has a payoff of $-m'$.

To calculate the expected value of perfect information, I simply sum the probability of each of the three possible outcomes above multiplied by their respective payoffs to the applicant:

Corruption by Design.

$$p_1 \cdot 0 + (1 - p_1) p_2 \cdot C_2 + [(1 - p_1) (1 - p_2)] \cdot D_1 = \\ (1 - p_1) p_2 \cdot C_2 + [(1 - p_1) (1 - p_2)] \cdot D_1$$

Substituting the base case parameter values yields 13.44 as the expected value of perfect information.

What is the expected value of applying for a license without exploiting personal connections? It is the expected value of the licensing process with imperfect information, which is the expected value to the applicant of the signaling game. The analysis and numerical example in section 4 provides this expected value (i.e., expected cost) conditional on rejection of the application in period 1. In choosing whether or not to exploit personal connections, however, the applicant is choosing between alternatives *before* he begins the signaling game. The appropriate comparison, therefore, is the expected value of the entire signaling game (not only that part of it conditional on rejection of the application). This is the sum of two products: the probability of rejection in period 1 multiplied by the expected value given rejection, and the probability of acceptance in period 1 multiplied by the expected value given acceptance. The expected value (i.e., expected cost) given rejection is the equilibrium bribe m^* calculated in section 4. And as the expected value to the applicant given acceptance is 0, the latter product is 0. This means the expected value of the entire game is the equilibrium bribe m^* multiplied by the probability of rejection in period 1:

$$m^* (1 - p_1 p_2) = 24.16 \cdot [1 - (0.4)(0.4)] = 20.29$$

Subtracting the expected value of personal connections (13.44) from this expected value yields 6.85. This is the maximum amount applicants will pay as connection fees. Whether or

not applicants choose to exploit personal connections, then, depends on whether they can do so for no more than this amount. This can depend on the network of personal connections available to applicants: applicants may have a wide or narrow range of personal connections, and even applicants who are not generally well-connected may have a fortuitous connection that serves them well. (For example, an applicant whose former student or younger brother works as a licensing official evaluating applications is probably able to exploit this personal connection for very little.)

6. Comparative Statics: Policy Change and Corruption Control.

Changes in economic policy orientation in 1992 produced important changes in enterprise licensing policy: a significant relaxation of standards defining acceptable applications and an increase in transparency in enterprise licensing. These changes are changes in institutional design. Ongoing efforts to control bureaucratic corruption through increased enforcement and educational campaigns can also alter institutional design. Changes in design can be analyzed as changes in base case parameter values for the signaling game in section 4.

Altering the values assigned to game parameters alters the numerical results. It does not necessarily alter the substantive result of bribery as an equilibrium or the equilibrium bigger bribe size. This section examines the robustness of these substantive equilibria when parameter values are different. The varying parameter values in the comparative statics exercises below reflect empirical variation in the institutional design of enterprise licensing.

6.1. Changes in Policy.

In spring 1992 Deng Xiaoping gave widely publicized support to rapid economic growth and market forces in a series of talks during a tour of the economically advanced south (see Deng 18 Jan.-21 Feb. 1992). This orientation to the "socialist market economy" was endorsed at a meeting convened by the Central Committee in June and again, formally as policy, at the

14th Party Congress in October. The SAIC responded quickly and unambiguously to Deng's message in a document calling for a major reduction in the number of approvals and permits required prior to licensing. Requirements "beneficial to economic development" were to be kept in place; others were to be gradually invalidated (SAIC 5 June 1992; see also Liu 1993).

The SAIC document was aimed mainly at encroachments by government economic departments, which over the years had used approval and permit authority to restrict entry (and, thereby, competition) in order to maintain state enterprise monopolies in their respective trades and industrial sectors (see especially Fang 1992). To support these monopolies, economic departments had increased the number of permits required and had set up an examination and approval process that was a "virtual labyrinth" for applicants outside the state enterprises directly under the departments: "Applicants have no idea where they will collide into a wall, no way to predict what will happen" (Fang 1992:63). A deputy head of the SAIC noted that private enterprises in particular faced "a forest of checkpoints in the examination and approval process" (Gan 1993:15). Predictably, given the implicit challenge to powerful bureaucratic interests, the process of actually invalidating specific national and local stipulations to reflect the SAIC policy guidelines was (and continues to be) fairly slow.²⁶

Despite the slow pace of change for official standards, local bureaus of industry and commerce throughout the country responded quickly with significantly relaxed operative standards for enterprise licensing (see, e.g., Wan 1992; Cao 1993; Sun 1993). Obviously, however, if standards defining acceptable applications are relaxed, but applicants have no more information than before, applicants will underestimate the probability that their applications are acceptable. Leaders of local licensing offices described this situation as a lack of transparency (*toumingdu*) in enterprise licensing. To address this problem, bureaus of

industry and commerce renewed earlier efforts (see SAIC 23 July 1988, 20 Mar. 1990) to make the new standards public. Licensing offices set up bulletin boards, displayed wall posters, and printed booklets outlining conditions for acceptable applications, procedures, time restrictions, documentary evidence requirements, and fees. All of these methods communicated standards through channels other than licensing officials themselves.

Some leaders of local licensing offices characterized these increases in transparency as anti-corruption measures: by this logic, if an acceptable application is easier to prepare than applicants previously imagined, and if applicants know what constitutes an acceptable application, then they are more likely to know when officials misrepresent the status of acceptable applications.

These changes in policy can be represented as changes in parameter values in the signaling game. The effect of relaxation of standards can be analyzed by reducing the cost of revising and resubmitting applications (C_2) from the base case value of 32. The combined effect of relaxation of standards and increased transparency can be analyzed by increasing applicants' priors for acceptable applications (p_1) from the base case value of 0.4. Results of these exercises in comparative statics are presented in figures 2 and 3.

Figure 2 illustrates expected values for offering the smaller and bigger bribes and the cost of revising and resubmitting applications when that cost (C_2) varies. As expected values are expected costs, equilibria are the lowest (not highest) values. Holding other base case values constant and reducing the cost of revising and resubmitting applications by only a very small amount (i.e., from the base case value of 32) shifts the equilibrium from the bigger to the smaller bribe. This is a fairly robust equilibrium: further reductions in C_2 do not affect the smaller bribe equilibrium until C_2 reaches the extremely small value (i.e., relative to base case values) of about 4. At that point, the equilibrium shifts from bribery to revising and

resubmitting the application. This value (comparable to the base case cost of offering a bribe to a clean official) is much too small to reflect the current situation in enterprise licensing. Nor, in my understanding, is this value big enough to reflect a future in which all approvals and permits from government economic departments have been eliminated in practice.²⁷

Figure 3 illustrates expected values for offering the smaller and bigger bribes and the (here unvarying) cost of revising and resubmitting applications when applicants' estimated priors for acceptable applications (p_1) are changed. Increasing these priors reflects the simultaneous relaxation of standards and transparency in enterprise licensing (which increases applicants' knowledge of these standards). Considering that transparency is viewed as an anti-corruption measure, the result of the comparative statics exercise is quite interesting. Holding other base case values constant, increasing priors for acceptable applications reduces expected costs for each of the bribes. Not only is the substantive equilibrium of bribery unchanged, but also bribery becomes an increasingly more attractive choice for the applicant as the gap widens between the expected cost of the lowest bribe and the cost of revising and resubmitting the application. Transparency does reduce corruption in one non-trivial sense: with only a very small increase (from the base case value) in priors for acceptable applications, the equilibrium bribe becomes the smaller (instead of the bigger) bribe. Somewhat counter-intuitively, this equilibrium is extremely robust: holding other values constant, the greater the applicant's estimated likelihood that his application is acceptable, the more attractive the choice to offer the (smaller) bribe.

6.2. Efforts to Control Corruption.

Since 1982 the Chinese government has engaged in an ongoing battle to control corruption in its various forms, including bureaucratic corruption of the form analyzed here. Local bureaus of industry and commerce have followed SAIC directives to launch periodic campaigns and

implement more routine anti-corruption measures. At the first nationwide SAIC meeting on "building clean government," the SAIC head identified ideological (i.e., moral) education as the crux of efforts to control corruption (Liu 1990). This approach focuses directly on changing the character of officials by increasing the psychic costs of corruption. It assumes that officials engage in corrupt actions because they have corrupt natures, which can be modified through moral suasion. Ideological education campaigns are nearly always part of major national anti-corruption campaigns, which are launched with fanfare every few years and reported prominently in the media.

The SAIC has not, however, completely ignored a different approach to corruption control: modifying the structure of incentives within which officials act. In particular, local bureaus of industry and commerce have made attempts to increase the costs of bribery to officials. They have tried to strengthen detection by encouraging clients of the bureaus to report officials who abuse public office, and they have periodically (usually during campaigns) increased penalties for bribery (see, e.g., SAIC, Investigation Group 1986; Hunan Province, Hengyang Municipal Bureau of Industry and Commerce, Office of Supervision 1992).

These two different approaches to the control of corruption can be represented as changes in parameter values in the signaling game. The effect of increasing the costs of bribery to officials can be analyzed by increasing either the cost of accepting a bribe from a qualified applicant (B_1) or that of accepting a bribe from an unqualified applicant (D_1). Because the latter is considerably easier to implement (especially through increasing penalties) than the former, I analyze the effect of increasing D_1 from the base case value of 16.²⁸ Results are presented in figure 4.

Holding other base case values constant, increasing by a small amount the cost to

officials of accepting bribes from unqualified applicants changes the equilibrium in the signaling game from the bigger to the smaller bribe. Moreover, this new equilibrium is extremely robust: changes in D_1 increase the expected cost of the bigger bribe, but not of the smaller bribe; as a result, the smaller bribe becomes increasingly attractive to the applicant.

There is no parameter in the signaling game for analysis of the direct effect of ideological education campaigns. If such campaigns do succeed in changing preferences of officials by increasing the psychic costs of bribery to them, this implies an increase in the number of clean officials. Unquestionably, this will reduce corruption. In terms of the signaling game in section 4, a greater number of acceptable applications will be accepted in period 1, and a greater number of applicants will not have to choose between bribery and revising and resubmitting applications.

Here I consider some secondary effects of anti-corruption campaigns. I assume that the publicity accompanying campaigns affects applicants' beliefs about behavioral norms in the bureaucracy. This allows me to analyze effects of anti-corruption campaigns as changes in applicants' priors about encountering clean officials. Results are presented in figure 5.

Consider first the equilibrium for values of p_2 above the base case value of 0.4. Holding other base case values constant, increasing applicants' priors for encountering clean officials increases expected costs associated with each of the bribes. Bribery continues to be the equilibrium (and the equilibrium bribe continues to be the bigger bribe) up to the point where applicants' priors reach about 0.85. At that point, bribery ceases to be an equilibrium solution: the expected cost of offering either the bigger or smaller bribe exceeds the cost of revising and resubmitting the application. The new equilibrium is revision and resubmission of the application (without bribery).

In short, quite independent of any possible direct effect of increasing the number of

clean officials, anti-corruption campaigns may change applicants' priors about the character of licensing officials, which may in turn produce a change in the enterprise licensing equilibrium: if applicants *believe* the proportion of clean officials is high enough, they will not offer bribes after their applications are rejected in period 1. In the longer term, if applicants cease to offer bribes, then the "always reject" strategy of corrupt officials in period 1 is no longer optimal for them.

Now consider a different possibility: the publicity associated with anti-corruption campaigns may have the exact opposite effect on applicants' priors. The campaigns may lead applicants to conclude that licensing offices are teeming with corrupt officials. This secondary effect is also reflected in figure 5 -- in those values of p_2 below the base case value. Interestingly, however, a decrease in values of p_2 has anti-corruption benefits too: when applicants believe the proportion of clean officials is low enough (at about 0.3), the equilibrium bribe size switches from the bigger to the smaller bribe.

7. Conclusion.

The exercises in comparative statics indicate that corruption of the form analyzed here is quite robust. It appears to be relatively unproblematic to reduce corruption, in the sense of reducing bribe sizes. Indeed, policy measures and anti-corruption efforts recently adopted can be expected to have had this effect already. To move away entirely from corrupt equilibria, however, requires far more dramatic change in institutional design.

The exercises suggest that even major changes in structures may be ineffective in eliminating corruption entirely. Changes in expectations may be effective, but they must be very substantial, if they are to achieve this end. Yet, this poses a problem: leaders strongly committed to eliminating corruption can rearrange structures to do so, even in an environment where corruption is pervasive (see Klitgaard 1988); changes in beliefs, however,

Corruption by Design

cannot be similarly mandated from above, but can only be encouraged to emerge from below (see Manion 1993).

NOTES

1. The SAIC also carries out a number of other supervisory and regulatory duties in the economy. It drafts laws and regulations on the administration of industry and commerce, manages trade at rural and urban markets, administrates markets for capital goods and scarce commodities, coordinates and implements investigation and punishment of illegal economic activities, studies and monitors the development of the private economy, manages advertising and the use of trademarks, oversees the administration of economic contracts, and acts as arbiter in economic contractual disputes. These duties are becoming more important as direct control of the economy through central planning is gradually replaced by indirect regulation of the "socialist market economy."

2. Others are: taxation, customs, public security, and the judiciary.

3. These issues are relevant, however, in the determination of penalties (see section 3.4 below).

4. There has been official debate on the appropriate size of the private economy, which may have implications for limiting the number of private enterprises. The SAIC journal reported a suggestion (by noted economist Li Yining) of 30 percent as an appropriate limit on the size of the private economy, but no official standard has been adopted ("Siying jingji de bili xiangding" 1989).

5. These documents are reproduced in published collections (see SAIC, Bureau of Enterprise Licensing 1985, 1988, 1989; SAIC, Legal Bureau 1991, 1992; *Gongshang xingzheng guanli xianxing youxiao guizhang huibian* (1979.1-1991.12) 1992. New documents are reproduced in the journal *Gongshang xingzheng guanli*.

6. See the discussion in section 6.1 below.

7. Collections of documents on enterprise licensing are sold at the publishing outlet, but not at bookstores; some collections are classified as internal (*neibu*); and keeping up to date on changing stipulations requires reading the SAIC journal and journals of provincial bureaus of industry and commerce. Neither the SAIC journal nor the provincial journals are widely available, and the SAIC journal and some of the provincial journals are classified as internal.

8. This assumes that investigations and verification (or post-licensing inspections) are independent from initial decisions to accept applications. At one licensing office I visited, officials work in pairs: each official responsible for evaluation is assigned a permanent partner to investigate and verify the materials for applications he accepts. This arrangement can facilitate cooperation in corruption.

9. Applicants can submit to a formal administrative appeals process, but they are unlikely to do so and unlikely to succeed if they do so. See section 3.3 below.

10. I note here that in the game theoretic analysis of section 4, I simplify by assuming that costs of operating without a license are high enough that applicants will make attempts to obtain one. In reality, this is not always so. The SAIC journal has reported cases of enterprises going unlicensed because of delays and difficulties in obtaining permits from government economic departments (see, e.g., Lan and Lian 1991; Yuan and Zhang 1993). At one municipal district licensing office I visited, officials estimated that small businesses easily operate unlicensed without being detected by their officials, but that they usually can detect larger enterprises operating unlicensed (Licensing Office Interview 93084). In rural localities, larger enterprises are likely to experience even greater difficulties in avoiding detection if they operate unlicensed.

11. I have seen no evidence that such penalties are in fact imposed.

12. I have encountered no cases of applicants serving prison terms or terms of forced labor simply for bribery in enterprise licensing.

13. Some officials have suggested that low salaries account for the corruption, a view rejected by the SAIC head: acknowledging the low salaries, he argued nonetheless that ideological education is the crux of building clean government (Liu 1990).

14. The corrupt official in this game is passive. I note here that a more active form of corruption, solicitation of bribes, is not only more costly to the official (penalties if detected are higher; probability of detection is probably higher) but also unnecessary: the analysis below concludes that, for parameter values chosen to reflect the institutional design described in section 3, the applicant's optimal strategy when the application is rejected is to offer a bribe.

15. In the analysis that follows, I initially assume a strategy "always reject" for the corrupt official. This strategy turns out to be optimal for the corrupt official for assigned base case parameter values. Moreover, bribery proves to be a fairly robust equilibrium when parameter values are altered in section 6.

16. The game form presented in figure 1 simplifies in representing this: the obligation to accept a revised application is reflected in the payoff structure; after all "revise and resubmit" branches, payoffs assume the official can only accept the application.

17. Again, the representation of this in the game form presented in figure 1 simplifies by assuming this in the payoff structure.

18. Note that I assume here that the applicant pays no cost of offering a bribe to a corrupt official. But we can easily conceive (and somewhat less easily model) that corrupt officials may report offers of bribes from applicants with unacceptable applications --

especially during anti-corruption campaigns and when these bribe offers are too small to cover expected costs associated with accepting them.

19. That is, I assume here that an official who accepts a bribe and application from a qualified applicant (after rejecting that applicant's application in period 1) pays a cost of B_1 but not an additional cost of A_1 .

20. That is, I assume here that an official who accepts a bribe and application from an unqualified applicant pays a cost of D_1 but not an additional cost of C_1 .

21. Note that this formulation of bribe size in terms of official's costs is consistent with the relationship between bribe size and severity of penalties discussed in section 3.4 above.

22. I note here that m^α minimum and m^γ minimum were defined in terms that make the official precisely indifferent between accepting and rejecting the bribe and application. Therefore, in those conditions in which the applicant offers a bribe, he offers the minimum bribe + ϵ so that the official is not indifferent between acceptance and rejection. For simplification in the text, I have not included this epsilon amount.

23. Recall that m^α and m^γ have been defined in terms of parameter values, as $B_1 - A_1$ and D_1 , respectively.

24. The two expected costs are very close in value. Comparative statics exercises in section 6 indicate that the equilibrium at base case values is close to a "switchpoint": small changes in parameter values push the equilibrium to an increasingly robust smaller bribe equilibrium or bigger bribe equilibrium, depending on the direction of parameter change. Judging from interviews, I would guess the smaller bribe is the equilibrium (i.e., applicants commonly pay officials a private fee for doing their job but not the larger amount for illicit services).

25. Some entrepreneurs interviewed in Beijing commented that, in their experience, transacting through personal connections was less common in highly marketized areas, such as Guangzhou, compared to Beijing.

26. In 1993 the SAIC circulated a document that identified simplification of licensing requirements as a major focus of SAIC work for that year. It condemned the existing examination and approval system as "a product and prop of the planned economy" (SAIC 20 Feb. 1993). As recently as June 1994 Vice Premier Zhu Rongji criticized government economic departments for their abuse of approval and permit authority, indicating that the problem had yet to be resolved. Zhu reiterated the call for simplification of licensing requirements (Foreign Broadcast Information Service 13 June 1994:20-21).

27. Even under the boldest plans set out by SAIC policy makers, enterprise licenses will be required to meet some standards that involve other government departments (regulating areas such as environmental pollution, public health, and labor and personnel) and involve some real cost of revising and resubmitting applications. For corrupt officials who create costs of revising and resubmitting applications that are in fact acceptable, this small value can likely be met by overly bureaucratic requirements of form alone.

28. Procedures are unlikely to detect bribery associated with acceptable applications, as such applications raise no suspicions when investigated, verified, approved, or inspected. Licensing offices could relatively easily raise the cost of accepting unacceptable applications (C_1), treating the action of allowing an unqualified applicant to get through as sufficient or strong evidence of bribery. But this might also increase the proportion of acceptable applications rejected by clean officials, who act cautiously to avoid any stigma associated with suspicion of bribery. Increasing D_1 has none of these counter-productive results.

REFERENCES

- Chan, Anita, and Jonathan Unger. 1982. "Grey and Black: The Hidden Economy of Rural China." *Pacific Affairs* 55, no. 3:452-471.
- Cao Shunlin. 1993. "Fahui gongshang xingzheng guanli zhineng cujin qiye zhuanhuan jingying jizhi" [Bring into play the functions of administration of industry and commerce, promote mechanisms to transform enterprise operations]. *Gongshang xingzheng guanli*, no. 3:47-48.
- Dalian Municipality, Jinzhou District Bureau of Industry and Commerce. 1991. "Jiaqiang dengji guanli guifanhua zhiduhua kexuehua jianshe" [Strengthen building of standardized, systematic, scientific enterprise licensing]. *Gongshang xingzheng guanli*, no. 9:38.
- Deng Xiaoping. 18 Jan.-21 Feb. 1992. "Gist of Speeches Made in Wuchang, Shenzhen, Zhuhai and Shanghai." *Beijing Review* 37, nos. 6-7 (1994):9-20.
- Fan Guangyuan. 1984. "Zhengque duidai gaige yu fagui de guanxi" [Correctly handle the relationship between reforms and regulations]. *Gongshang xingzheng guanli*, no. 20:27.
- Fang Baozhong. 1991. "Tan gongshang xingzheng guanli zhong de qixian" [A discussion of time limits in administration of industry and commerce]. *Gongshang xingzheng guanli*, no. 1:41-43.
- Fang Liufang. 1992. "Gongsi shenpi zhidu yu xingzheng xing longduan" [Administrative monopoly and the examination and approval system for companies]. *Zhongguo*

faxue, no. 4:55-64, 106.

Fifth National People's Congress. 1 July 1979. "Zhonghua renmin gongheguo xingfa"

[Criminal law of the People's Republic of China]. In *Cha chu "guandao" anjian shiyong fagui shouce* [Handbook of laws and regulations governing investigation and punishment in cases of "profiteering by officials"], 3-17. Beijing: Falu chubanshe, 1989.

_____, Standing Committee. 8 Mar. 1982. "'Guanyu yancheng yanzhong pohuai jingji de zuifan de jue ding" [Decision on strict punishment for crimes of serious destruction of the economy]. In *Cha chu "guandao" anjian shiyong fagui shouce*, 18-19. See Fifth National People's Congress 1 July 1979.

Foreign Broadcast Information Service. *Daily Report: China*. Washington, D. C.

Forster, Keith. 1985. "The 1982 Campaign Against Economic Crime in China."

Australian Journal of Chinese Affairs, no. 14:1-19.

Gan Guoping. 1993. "Dali fazhan jiaqiang guanli cujin geti siying jingji zai shang xin taijie" [Develop the individual and private economy, strengthen its administration, promote its further achievement of new heights]. *Gongshang xingzheng guanli*, no. 10:13-20.

Gong Xiaobing, et al. 1991. *Tanwu huilu fanzui duice lun* [On measures to counter criminal corruption and bribery]. Beijing: Falu chubanshe.

Gongshang xingzheng guanli [Administration of industry and commerce]. Beijing.

Gongshang xingzheng guanli xianxing youxiao guizhang huibian (1979.1-1991.12)

[Collected regulations currently in effect on administration of industry and commerce (January 1979-December 1991)]. 1992. Beijing: Gongshang chubanshe.

Guangdong Provincial Bureau of Industry and Commerce. 1993. "Zhujiang san jiao zhou

geti siying jingji de xiankuang ji fazhan duice" [Current circumstances and the potential for development of the individual and private economy in the Zhujiang delta]. *Gongshang xingzheng guanli*, no. 1:52-56.

Guangdong Province, Zhuhai Municipal Bureau of Industry and Commerce. 1991. "Ding zhidu guifan ganbu xingwei" [Set a system, standardize cadre behavior]. *Gongshang xingzheng guanli*, no. 1:22-23.

Hunan Province, Hengyang Municipal Bureau of Industry and Commerce, Office of Supervision. 1992. "Dangqian gongshang xingzheng guanli renyuan weifa weiji xingwei tedian ji duice" [Characteristic features of current violations of law and discipline by personnel in regulation of industry and commerce and countermeasures]. *Gongshang xingzheng guanli*, no. 21:21-22.

Klitgaard, Robert. 1988. *Controlling Corruption*. Berkeley and Los Angeles: University of California Press.

Kong Lianyi. 1990. "Shiying gaige xingshi gaishan qiye dengji guanli tizhi" [Adapt to the situation of reform, improve the system of enterprise licensing and management]. *Gongshang xingzheng guanli*, no. 13:14.

Lan Yongzhi, and Lian Chunming. 1991. "Nongcun jianzhu dui wu zhao jingying qingkuang yanzhong" [Serious problem of rural construction teams operating without licenses]. *Gongshang xingzheng guanli*, no. 19:44.

Lee, Peter Nan-shong. 1990. "Bureaucratic Corruption During the Deng Xiaoping Era." *Corruption and Reform* 5, no. 5:29-47.

Li Tongliang, and Yuan Lin. 1991. "Qianghua guanli fuwu chuangzao kuansong huanjing" [Strengthen service, create an accommodating environment]. *Gongshang xingzheng guanli*, no. 3:9.

Corruption by Design.

Liew, Leong H. 1993. "Rent-Seeking and the Two-Track Price System in China."

Public Choice 77, no. 2:359-375.

Liu, Alan P. L. 1983. "The Politics of Corruption in the People's Republic of China."

American Political Science Review 77, no. 3:602-623.

Liu Minxue. 1990. "Zai lian Zheng jianshe jingyan jiaoliu hui shang de jianghua" [Talk at the conference on experiences in building clean government]. *Gongshang xingzheng guanli*, no. 19:20-27.

_____. 1993. "Kaituo chuangxin wei jianli you zhongguo tese de gongshang xingzheng guanli er fendou" [Boldly innovate in the struggle to establish an administration of industry and commerce with Chinese characteristics]. *Gongshang xingzheng guanli*, no. 3:16-26.

Ma Hua. 1990. "Beijing shi dongcheng qu gongshang ju zhua lian Zheng jianshe de zuofa" [Methods to build clean government used by the bureau of industry and commerce in Beijing's east district]. *Gongshang xingzheng guanli*, no. 5:35.

Manion, Melanie. 1993. *Retirement of Revolutionaries in China: Public Policies, Social Norms, Private Interests*. Princeton, N. J.: Princeton University Press.

Myers, James T. 1989. "China: Modernization and 'Unhealthy Tendencies'." *Comparative Politics* 21, no. 2:193-213.

Nye, J. S. 1967. "Corruption and Political Development: A Cost-Benefit Analysis."

American Political Science Review 61, no. 2:417-427.

Ostergaard, Clemens Stubbe. 1986. "Explaining China's Recent Political Corruption."

Corruption and Reform 1, no. 1:209-233.

_____, and Christina Petersen. 1991. "Official Profiteering and the Tiananmen Square Demonstrations in China." *Corruption and Reform* 6, no. 2:87-107.

Rose-Ackerman, Susan. 1978. *Corruption: A Study in Political Economy*. New York: Academic Press.

SAIC. 23 July 1988. "Guanyu gongshang xingzheng guanli jiguan baochi lianjie de tongzhi" [Notice on maintaining clean government in offices of administration of industry and commerce]. In *Gongshang xingzheng guanli*, 1988, no. 17:5-6.

_____. 20 Mar. 1990. "Guanyu fabu 'gongshang xingzheng guanli jiguan banshi zhidu gongkai yaoze', 'gongshang xingzheng guanli ren yuan lianjie shouze', 'weifan gongshang xingzheng guanli ren yuan lianjie shouze chufen banfa' de tongzhi" [Notice on promulgating 'standards for openness in procedures in offices of administration of industry and commerce', 'rules on clean government for personnel in administration of industry and commerce', 'sanctions for violations of rules on clean government for personnel in administration of industry and commerce']. In *Gongshang xingzheng guanli*, no. 9:8-10.

_____. 20 July 1990. "Liu Minxue juzhang zai guanche shishi xingzheng susong fa zhunbei gongzuo zuotanhui shang de jianghua ji huiyi jiyao" [Bureau head Liu Minxue's talk at the conference on preparations to implement administrative procedural law and summary of conference proceedings]. In *Gongshang xingzheng guanli*, 1990, no. 17:16-19.

_____. 29 July 1990. "Quanguo gongshang xingzheng guanli xitong renshi jiaoyu chuzhang gongzuo huiyi youguan wenjian" [Documents from the nationwide work conference of heads of personnel and education divisions in the industry and commerce system]. In *Gongshang xingzheng guanli*, no. 17:4-15.

_____. 4 Sept. 1990. "Guanyu jin yi bu jiaqiang lianzheng jianshe jiuzheng bu zheng zhi feng de tongzhi" [Notice on further strengthening clean government and rectifying

- unhealthy tendencies]. In *Gongshang xingzheng guanli*, 1990, no. 20:8-9.
- _____. 5 June 1992. "Guanyu gaijin gongshang xingzheng guanli gongzuo cujin gaige kaifang he jingji fazhan de yijian" [Opinions on reforming administration of industry and commerce and promoting reform, opening, and economic development]. *Gongshang xingzheng guanli*, 1992, no. 15:7-12.
- _____. 20 Feb. 1993. "Qiye dengji si 1993 nian gongzuo yaodian" [Focus of work in 1993 for the bureau of enterprise licensing]. *Gongshang xingzheng guanli*, no. 6:4-6.
- _____. Bureau of Enterprise Licensing, ed. 1985. *Qiye dengji guanli fagui* [Laws and regulations on enterprise licensing and administration]. Beijing: Gongshang chubanshe.
- _____. 1988 and 1989. *Qiye faren dengji guanli fagui* [Laws and regulations on the licensing and administration of legally incorporated enterprises]. Vols. 1 and 2. Beijing: Gongshang chubanshe.
- SAIC, Investigation Group. 1986. "Shaanxi sheng gongshang xingzheng guanli xitong jiuzheng bu zheng zhi feng de ji dian zuofa" [Some methods of the Shaanxi provincial administration of industry and commerce system to rectify unhealthy tendencies]. *Gongshang xingzheng guanli*, no. 19:34-35.
- SAIC, Legal Bureau, ed. 1991. *Xianxing gongshang xingzheng guanli guizhang huibian (1979-1989)* [Collected regulations currently in effect on administration of industry and commerce (1979-1989)]. Beijing: Gongshang chubanshe.
- _____. 1992. *Gongshang xingzheng guanli fagui huibian (1991)* [Collected laws and regulations on administration of industry and commerce (1991)]. Beijing: Gongshang chubanshe.

- Sands, Barbara N. 1990. "Decentralizing an Economy: The Role of Bureaucratic Corruption in China's Economic Reforms." *Public Choice* 65, no. 1:85-91.
- Shaanxi Province, Mei County Bureau of Industry and Commerce. 1990. "Qianghua zhiyue jizhi cujin lian Zheng jianshe" [Strengthen restriction mechanisms and promote building of clean government]. *Gongshang xingzheng guanli*, no. 8:25.
- Shleifer, Andrei, and Robert W. Vishny. 1993. "Corruption." *Quarterly Journal of Economics* 58, no. 3:599-617.
- Sixth National People's Congress, Standing Committee. 21 Jan. 1988. "Guanyu chengzhi tanwu zui huilu zui de buchong guiding" [Supplementary regulations on the punishment of crimes of graft and bribery]. In *Cha chu "guandao" anjian shiyong fagui shouce*, 34-37. See Fifth National People's Congress 1 July 1979.
- "Siyang jingji de bili xianding" [Limits on the proportionate size of the private economy]. *Gongshang xingzheng guanli*, 1989, no. 5:27.
- State Council. 13 Sept. 1988. "Guojia xingzheng jiguan gongzuo renyuan tanwu huilu xingzheng chufen zanxing guiding" [Provisional regulations on administrative sanctions for graft and bribery by state functionaries]. In *Cha chu "guandao" anjian shiyong fagui shouce*, 489-492. See Fifth National People's Congress 1 July 1979.
- Sun Baogui. 1993. "Tan xianxing qiye dengji guanli gaige" [On the reform of current enterprise licensing and administration]. *Gongshang xingzheng guanli*, no. 1:13-14.
- Sun Qian, ed. 1990. *Guojia gongzuo renyuan zhiwu fazui yanjiu* [On the criminal abuse of office by state functionaries]. Beijing: Zhongguo jiancha chubanshe.
- Supreme People's Court and Supreme People's Procuratorate. 6 Nov. 1989. "Guanyu zhixing 'guanyu chengzhi tanwu zui huilu zui de buchong guiding' ruogan wenti de jieda"

- [Clarification of some issues in implementing "supplementary rules on punishments for crimes of graft and bribery"]. In Ministry of Control, Bureau of Policies, Laws, and Regulations, ed., *Jiancha yewu fagui zhengce xuanbian (1989-1990)* [Collected laws, regulations, and policies for control work (1989-1990)], 349-356. Beijing: Zhongguo zhengfa daxue chubanshe, 1990.
- Tu Wenzhong. 1991. "Tan jiaqiang lian Zheng jianshe de neibu jiandu" [On strengthening internal supervision in building clean government]. *Gongshang xingzheng guanli*, no. 7:20.
- Wan Youxin. 1992. "Ruhe jie jue qi ye 'ban zhao nan'" [How to resolve difficulties in obtaining enterprise licenses]. *Gongshang xingzheng guanli*, no. 20:37-38.
- Yuan Hongdao, and Zhang Yurong. 1993. "Qi ye deng ji guan li zhong de bei an deng ji tantao" [An inquiry into licensing reporting in the process of enterprise licensing]. *Gongshang xingzheng guanli*, no. 9:19-20.
- Zhang Yufa. 1990. "Jian li quan li zhi yue ji zhi shi shen hua lian Zheng jianshe de guan jian" [Establishing mechanisms to constrain power is the crux of building clean government]. *Gongshang xingzheng guanli*, no. 15:40.
- Zhongguo gongshang bao* [Chinese industry and commerce newspaper]. Beijing.
- Zhongguo gongshang xingzheng guanli nianjian* [Yearbook on Chinese administration of industry and commerce]. 1993. Beijing: Gongshang chubanshe.
- Zhongguo gongshang xingzheng guanli tongji sishi nian* [Statistics on forty years of Chinese administration of industry and commerce]. 1992. Beijing: Zhongguo tongji chubanshe.

Figure 1. Game Form.

Note: Official's payoffs are given first, applicant's payoffs second.

Table 1. Payoff Structure.

	Parameter	Base Case Value
Costs to Corrupt Official, Reflecting Probability of Detection and Sanctions If Detected:		
accept acceptable application	0	
reject unacceptable application	0	
reject acceptable application	A_1	2
accept bribe from applicant with acceptable application	B_1	4
accept unacceptable application	C_1	
accept bribe from applicant with unacceptable application	D_1	16
$D_1 > C_1 > B_1 > A_1$		
Costs to Applicant, Reflecting Probability of Detection and Sanctions If Detected:		
bribe official if application is acceptable	0	
offer bribe to clean official	A_2	4
bribe official if application is unacceptable	B_2	8
Cost to Applicant of Not Offering a Bribe:		
revise and resubmit application	C_2	32
$C_2 > B_2 > A_2$		
Bribe:		
endogenous value of bribe, a function of game parameters a benefit to official, a cost to applicant	M	

Figure 2. Relaxation of Standards.

**Figure 3. Relaxation of Standards
and Increased Transparency.**

Figure 4. Anti-Corruption Enforcement.

Figure 5. Anti-Corruption Publicity.

Lingnan College Library
All books on loan
Date Due 到期單
to recall after 2 weeks

RETURNED 20 MAR 1997

23 MAR 1998
RETURNED

7 APR 1998
RETURNED

23 APR 1998
RETURNED

2 MAY 2000
RETURNED

27 NOV 2001
RETURNED

22 APR 2002
RETURNED

LINGNAN COLLEGE LIBRARY

3 1000 34674509 7