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DOES CORRUPTION LEAD TO WELFARE LOSS? AN EMPIRICAL EVIDENCE FROM REAL ESTATE SECTOR OF BANGLADESH

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Abstract. *Regulation may give rise to corrupt practices thereby resulting in welfare loss in an economy. This research aims at measuring the impact of corruption on the real estate sector of Dhaka city, the capital of Bangladesh. It makes an attempt to measure the welfare loss resulting from corrupt practices exercised mainly by government regulatory agencies. Bribe and extortion fee are the two main indicators whereby welfare loss is measured. Evidence from the study reveals that around 8 floors are lost due to payment of bribe and other such payments.*

Key words*: Corruption, bribery, extortion fee, rent-seeking activity, real estate sector, welfare loss.*

Introduction

Corruption is a much-discussed topic in Bangladesh in recent years. After being rated as one of the most corrupt countries of the world for several successive years by the Transparency International, there has been a heightened awareness about it. To fight against corruption governments generally consider tighter control and prosecution as effective means. Such regulations, however, may culminate in more corruption instead of reducing it (Haque & Muzaffar, 2008). The present study on the real estate sector of Dhaka city makes an attempt to investigate corruption that exists in the regulatory bodies and tries to quantify the economic loss associated with corrupt practices.

Corruption is defined as the use of public power to obtain private profit, preferment or prestige or for benefit of a group or class in a way that constitutes a breach of law or standard of high moral conduct (UNESCO, 1974). The Anti-Corruption Act of 1947 (Section 161) defines bribery as the gratification other than remuneration for

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doing or forbearing to do or for showing or forbearing to show favor or disfavor to any person (cited in Mansur, 2000). In common usage the word corruption is used to mean different things in different contexts. In this paper corruption mainly refers to taking bribe and extortion fee. The process of bribery brings two parties together who have the intension to engage in some form of illegal transaction between them for a consideration that benefits or promises to benefit the public servant. The benefits received by the payee may be legal or illegal. In certain cases, bribe may turn out to be a *de facto* payment or a payment parallel to the legal fee (Muzaffar, 1999).

Despite the fact that corruption is a significant problem in many of the developing countries, combating corruption has proved to be very difficult in most cases. In as much as it creates of burden of tax on public services and private activities, it also leads to potentially severe efficiency consequences (Krueger, 1974; Shleifer & Vishny, 1993; Bertrand et al., 2006). Limited access to information on corruption by the citizens of the country is one potential reason for persistent corruption (Olken, 2009). Accurate information on corruption, as Olken (2009) suggests, may help prevent it through democratic process, providing incentives for politicians to limit it. Findings from Billger & Goel (2009) suggest that blanket corruption control policies are unlikely to succeed equally across countries with different corruption levels.

The transition of the countries from a poor, stand-still, traditional society to a rich, modern, market democracy may also help explain the pattern of corruption. According to Hofstaedter (1948), corruption in the US grew to reach a peak about a century ago, but since then it has fallen steadily, as predicted by the transition hypothesis (Paldam, 2002). Economic chaos may cause corruption as in the case of Russia where state of corruption deteriorated in previous decades (Levin & Satarov, 2000 cited in Paldam, 2002). Khan (1998) investigates the issue of corruption in the Indian subcontinent, Malaysia, Thailand, and South Korea and using a patron client network model tries to explain why in some countries corruption has attended rapid growth while in others it has implied transfers which are very damaging for growth. Dreher et al. (2007), using a structural equation model, provide a ranking of the countries showing Switzerland, Japan, Norway, Denmark, Germany among the least corrupt countries while Guinea-Bissau, Nigeria, Syria, Zambia, Ghana among the most corrupt countries.

Real estate can be considered as an economic good since it is scarce in nature (Brueggeman & Fisher, 2002). The scarcity in turn may give rise to corrupt practices. Although real estate may have many dimensions, this study only considers the construction aspect of the real estate sector. This sector in Bangladesh has been one of the fastest growing sectors since the 1990s and has helped provide housing facilities to the urban dwellers and create employment in both formal and informal sectors of the economy through its forward and backward linkages.

Dhaka, the capital city of Bangladesh, has witnessed a large influx of people over the past decades, becoming one of the fastest growing and densely populated cities in the region. Access to proper housing facilities is an acute problem for its large number of

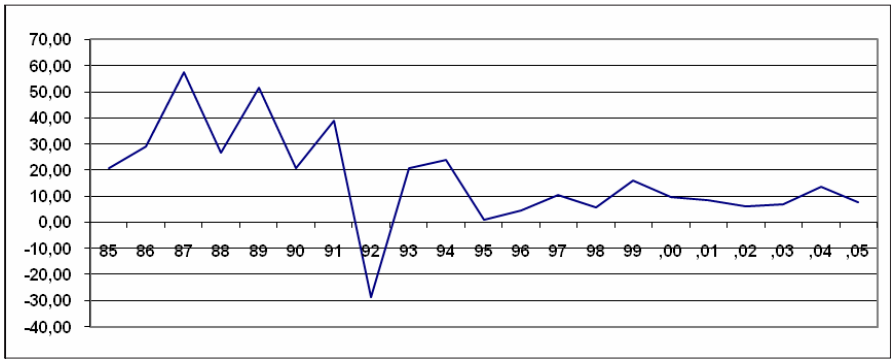

FIGURE 1: **Growth rate of apartment units delivered in Dhaka city**

Source: Various issues of REHAB newsletters and publications.

inhabitants. The growth in the apartment units delivered shows a moderate pace since the mid 1990s, considered as insufficient to meet the growing demand for housing facilities (Figure 1). A conducive business environment is important for the development of real estate sector thus assisting in alleviating the housing problem.

A Review of Related Literature

Evidence of written work on corruption can be as ancient as "Arthasastra" by Kautiliya in the fourth century B. C. in India, identifying the irresistible temptation by the government servants to receive bribe (cited in Bardhan, 1997). Oldenburg (1987) argues that corruption has always been present, in different forms, having an adverse effect in different times at different places with varying degree and consequences. Government institutions which are corrupt and malfunctioning may impede or protract investment, entrepreneurship, and innovation (Lien, 1986). Bardhan (1997) points out that persistent corruption in certain cases may result into a sense of despair and helplessness amongst people who are concerned with it and ultimately turning the country into a mafia state. Corruption may lead to lower economic growth (Shleifer & Vishny, 1993) and the country's growth may slow down where people with talent are engaged in rent seeking activities (Murphy, Shleifer & Vishny, 1993). Limiting corruption might be a difficult task where it is economically desirable (Rose-Ackerman, 1978). Taslim (1994) argues that corruption in the form of bribe taking is like sand in a machine rather than oil because it drives out firms with lower entrepreneurial skills from the market (cited in Khan & Toufique, 1995).

On the other hand, several studies provide evidence of positive consequences of corruption. Mauro (1993) suggests that corruption may raise economic growth in two ways: by acting as a speed money allowing individuals to overcome bureaucratic delays and by making government officials work harder leading to a greater efficiency. Khan (1998) states that in some North East Asian countries such as South Korea widespread corruption has accompanied decades of very high growth.

Bhadra & Bhadra (1997) argue for legalizing bribery. Since South Asia as a whole typically ranks high on surveys designed to measure the extent of bribery and corruption in business, their argument is that it is neither moral nor efficient to keep a widely prevalent system under the rug (Bhadra & Bhadra, 1997). The paper by Haque & Muzaffar (2008) searches for a rationality of paying bribe and using data from the real estate sector of Bangladesh measures the loss to the government as a result of corruption.

The Research Method

In order to measure the welfare loss due to corruption which in turn results from regulations and extortion, the research makes an attempt to collect information on completed projects of real estate companies in Dhaka city. A structured questionnaire was designed to collect data relating to payment of legal fee, bribe, extortion fee, and other such information. A number of government agencies are identified from the study of Haque & Muzaffar (2008), responsible for providing different kinds of permission to the builders of apartments. These include:

Design: The design of the project needs approval from the regulatory agency called RAJUK (Dhaka Development Authority).

Water, Gas, and Electricity: To supply the utility services such as water, gas, and electricity a builder requires to take permission from Dhaka WASA (Dhaka Water Supply Authority), TITAS Gas Supply and Distribution, and Dhaka Electric Supply Authority (DESA) respectively.

Leaving equipment on the roadside: In order to leave the construction equipment, such as rods, bricks, and cement, on the roads adjacent to the construction site, the builder needs a temporary permission from the Dhaka City Corporation.

Hand-over of the apartment to the client: At the time of hand over of apartments to flat-owners, the builder sometimes requires to pay a fee on the basis of per square foot to RAJUK. This fee sometimes is paid by the flat-owners depending on how the contract is signed.

Registration of the project: The Registry Office located at Tejgaon, Dhaka charges a fee from the builder at the time of registration process.

Value added tax (VAT): The builder needs to pay VAT at 3% rate of the apartment price quoted when the hand-over is done. The agency responsible for collecting the VAT is the Circle Zone Office at Shegunbagicha, Dhaka.

Apart from the above government regulatory agencies where payment of legal fee and bribe (the possibility of it) is involved during the completion of a project, the other two areas where a builder might require to pay bribe or extortion fee are the police and local extortionists (the "mastans").

Using the structured questionnaire a survey was conducted during the months of November and December 2008 on companies, enlisted with the Real Estate and

Housing Association of Bangladesh (REHAB), in Dhaka city. Although a random selection process of companies was followed, collection of information was possible only from the companies who were willing to respond and provide such data. The data was analyzed using spreadsheet and software such as SPSS.

The Theoretical Model

The model used for the purpose of analysis assumes that a builder has a marginal cost (*MC*) curve which is also its supply function in a perfectly competitive market. The existence of a large number of builders in the city of Dhaka supports the notion of a competitive market. Figure 2 shows marginal cost curves with bribe and without bribe, MC_1 and MC_2 respectively. MC_1 is constructed using the data collected from the field survey while MC_2 is an estimated function. The area of the triangle ABF measures the welfare loss.

Welfare loss = ½ × Difference in *MC* Curves × Difference in quantities

To derive the marginal cost functions it is assumed that the cost function for constructing the apartments is as follows:

$C = C\,(Q, R, F)$,

where C is the cost of apartment construction, *Q* is the area of the apartment measured in square foot, *R* stands for bribe and extortion fee paid, and *F* refers to legal fee.

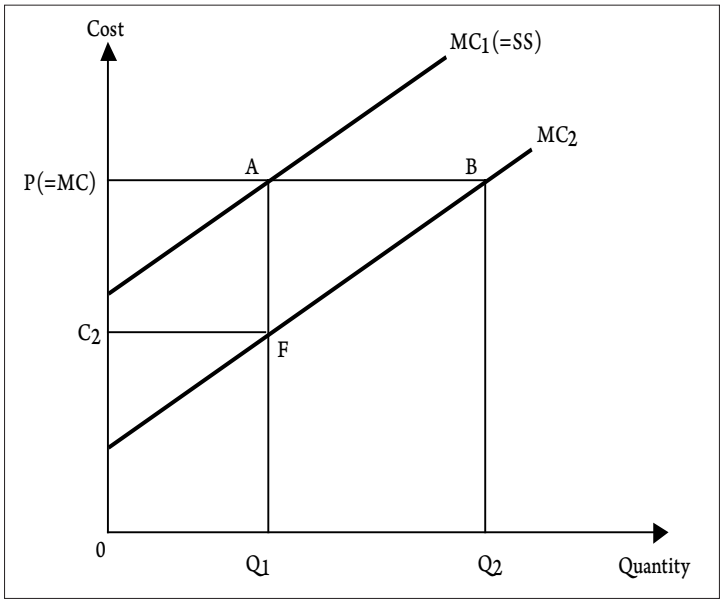

FIGURE 2: **Measuring Welfare Loss Using Marginal Cost Curves**

The Research Findings

The survey reveals information on 27 completed projects, 21 residential and 6 commercial, of the companies who were willing to provide data (Table 1).

Table 2 provides information on payment of bribe and extortion fee during the course of the completion of the projects. It shows that in 77.8% cases the builder requires to pay bribe to RAJUK for the approval of the project design. It also depicts a high degree of corruption while paying for taking connection for utility services. The figures show that in 100 percent cases builders need to pay bribe in order to obtain permission for water and electricity. In contrast, as Table 2 suggests, reported cases of payment of bribe and extortion fee for VAT, police, and local extortionists are relatively low.

Table 3 states the reasons for paying bribe or extortion fee. 25.9% of the cases report that the reason behind paying bribe is to speed up the process. 3.7% say that it is a necessity, in other words, without the

TABLE 1: **Nature of the project**

Type	Frequency
Residential	21 (77.8)
Commercial	6 (22.2)
Total	27

Source: Field survey, November and December 2008. NB: Figures within parentheses show percentage of the total.

TABLE 2: **Payment of bribe**

Areas where legal fee or bribe, extortion fee was paid	Bribe/extortion fee paid	
	Yes	No
Design	21 (77.8)	6 (22.2)
Water	27 (100)	0 (0)
Gas	24 (88.9)	3 (11.1)
Electricity	27 (100)	0 (0)
Use of adjacent road	17 (63)	10 (37)
Registration	23 (85.2)	4 (14.8)
VAT	3 (11.1)	24 (88.9)
Mafia fee to the extortionists	9 (33.3)	18 (66.7)
Illegal payment to the Police	4 (14.8)	23 (85.2)
Total number of responses		27

Source: Field survey November and December 2008. NB: Figures within parentheses show percentage of total. The item hand-over is not shown since no information was revealed in this regard.

bribe the respective work would not have been done. 63% state both of the factors as a reason.

According to Table 4, 81.5% of the cases report that they performed the process of giving bribe through a package deal while 11.1% say that it was done through a personal effort from desk to desk.

Table 5 states that 40.7% of the total number of projects paid the bribe in two installments, 29.6% of them paid in 3 installments, and 18.5% of them paid in 4 installments. Only 3% of total paid the whole sum before the job was done.

TABLE 3: **Reasons for payment of bribe/extortion fee**

Reasons	Frequency	Percentage (%)
To speed up the process	7	25.9
It was a necessity	1	3.7
Speedup + Necessity	17	63.0
Others	2	7.4
Total	27	100

Source: Field survey, November and December 2008.

TABLE 4: **Type of deal to pay bribe/extortion fee**

Type	Frequency	Percentage (%)
Package	22	81.5
Personal	3	11.1
Both	2	7.4
Total	27	100

Source: Field survey, November and December 2008.

TABLE 5: **Mode of payment of bribe/extortion fee**

Number of installments	Frequency	Percentage (%)
In 2 Installments	11	40.7
In 3 Installments	8	29.6
In 4 Installments	5	18.5
Payment before the work done	3	11.1
Total	27	100

Source: Field survey, November and December 2008.

The paper uses the following cost function for estimation.

$$\text{Log } C = 9.364 + 7.84\text{E-}06\ Q + 1.16\text{E-}11\ R \times Q + 8.24\text{E-}13\ F \times Q$$

Std error: (0.255) (7.64E-06) (3.27E-12) (3.13E-13)

t stat: (36.67) (1.02) (3.54) (2.63)

n: 27 $R^2 = 0.6138$ Adjusted $R^2 = 0.5612$

Here, C stands for cost in thousand taka, Q is area in square foot, R stands for bribe paid because of regulation, and F stands for Fee that is required as a legal payment.

The cost function has a constant term since not all cases report of paying bribe and also there is a fixed cost involved. The coefficient of Q is positive reflecting the fact that higher level of production would lead to higher cost. The coefficient of $(R \times Q)$ is positive revealing that cost increases as bribe and extortion fee associated with tighter regulation goes up. The coefficient of $(F \times Q)$ is positive as higher fee leads to greater costs.

A summary of the results estimated is provided in Table 6. The average values for Marginal cost with bribe and without bribe are approximately Taka 832 and Taka 545 respectively thus implying that the burden is Taka 287. The results also show that on average 8 floors are lost due to payment of bribe and welfare loss per square foot is 552.89.

TABLE 6: **Summary of findings**

	Mean	Median	Max	Min	Std Dev
Cost of the project (in lac)	338.89	260	250	27	233.78
Area (Q)	33367.48	33600	100800	8400	21645.66
Bribe/extortion fee	593611.11	491000	1578000	21000	473449
Legal fee	5111046.56	3875000	18310200	76000	5048612.46
Marginal cost with bribe/ extortion fee	831.78	575.87	3330.56	39.41	822.78
Marginal cost without bribe/extortion fee	544.72	362.48	1989.26	32.90	476.88
Area (Q) without bribe/ extortion fee	46959.58	46025.78	122041.58	8475.97	25681.24
Differences in Areas (Q)	13592.10	14408.13	25457.29	75.97	6353.06
Welfare loss	2505045.31	1223269.86	13015180.39	39.89	3494654.41
Average floor lost	7.9259	-	-	-	-
Welfare loss per square foot	552.89	-	-	-	-

Source: Data collected from field survey and calculation by the author. NB: Figures expressed in Bangladesh currency Taka; 1 Dollar = 70 Taka (approx.); 10 lac = 1 million.

Concluding Remarks

The paper provides information on taking bribes in government regulatory agencies and the amount of loss incurred as a result of it. The primary objective of the study was to show a quantitative measure of welfare loss studied in economic literature. Despite several limitations, such as information on a few completed projects and availability of confidential data, the study reveals evidence of significant amount of welfare loss in the construction of apartments in Dhaka city. Perhaps what is required is to identify critical governance capacities of the institutions and set realistic and feasible institutional reforms and anti-corruption strategies to combat corrupt practices.

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