On Corruption and Red Tape

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1.1. Backdrop

In the economics literature, corruption is characterized as exploiting public power for personal benefit. It acts as a negative externality to an economy. Krueger (1974) shows that rent-seeking activities lead to divergence in private and social benefits and costs and cause welfare losses. It occurs during different government activities including the provision of publicly provided private goods and services like driving licenses, construction permits, birth or death certificates, BPL certificates, free hospital beds, subsidized food, education, etc., and therefore, is an issue of concern. Since a government wants the goods to be allocated to its targeted beneficiaries, and the type of applicant is private information, a screening is conducted. The officials are assigned to check the credentials to identify the beneficiaries. The process creates two alternative kinds of power for the officials. First, since screening is time-consuming, and with elapsed time the good loses its value to the beneficiary, the official applies his discretion to speed up the process. Second, the official can suppress the information about the true type of applicant and allocate the good to an undeserving applicant. Both being illegal and punishable, in presence of a positive probability of detection, an official applies discretion only in return for bribes. A corrupt official accepts a bribe from both the deserving and undeserving applicants to shorten the delay due to the screening process, popularly known as 'red tape'. While bribery, being pure transfer, does not affect the welfare of an economy, the misallocation of the good creates a negative externality. On the other hand, speeding up the delivery of the good reduces welfare loss. Therefore, the net welfare impact of red tape-related bribery is an important area of study.

Red tape and bribery in the provision of public goods and services are prevalent both in the developing and developed countries of the World. The Global Corruption Barometer (GCB, 2017) report shows that developed countries like US also reported police and elected representatives to be corrupt and that bribery is a problem. Transparency

International's GCB report collecting data from 162,136 adults worldwide shows that 25 percent (1 in 4) people report paying a bribe in the provision of public services. Global Corruption Barometer (2020) dataset shows that in India 39 percent of people report paying a bribe in the provision of public services. Does payment of speed money hurt the bribe-payers? Do they dislike it? The answer to this question is not clear. Some individuals who would not have access to the good in an honest bureaucracy could access the good through bribery. Also, the speed-money allows the consumption of the good before it loses much of its value. The attempts in different countries to reduce the length of red tape and the officials' discretion through measures like time-bound delivery of the good and introduction of ICTs, therefore, attracted a mixed reaction. While it definitely would benefit the deserving applicants by reducing their need for paying speed money, it would harm the beneficiaries of misallocation. The introduction of such a scheme in the form of e-choupals found different success rates in different states of India. Bussell (2012) in her study of the scheme found support for the red tape and bribery in her survey respondents. In the economics literature also there is a debate about the same in the form of the 'greasing the wheel' role of speed-money vs. its 'sanding the wheel' role in a country's growth and development. While the papers like Lui (1985), Beck and Maher (1986) support the 'greasing the wheel' role, Djankov, La Porta, Lopez-De-Silanes and Shleifer (2002), Mauro (1995) support the 'sanding the wheel' role.

The present thesis derives its interest from the prevalence of the incidence of red tape and speed money in a country like India and the possible ambiguous impact of them on the welfare of the economy. It attempts to theoretically find out the supporters of red-tape-related corruption and supporters of an honest bureaucracy in different possible situations. It tries to derive the conditions under which the shortening of red tape and the grievance-redress mechanisms, generate support for an honest regime. It finds the conditions under which 'greasing the wheel' improves the welfare of an economy. In economies with persistent

corruption, it is often seen that even the individuals who do not support corruption, would often pay bribes. The thesis also attempts to find the factors influencing such behavior.

1.2.   Survey of Literature

The thesis relates broadly to three strands of literature. First is the literature on screening and red tape; second, the literature on ground-level monitoring vs. top-down monitoring of corruption; third, the literature on types of corruption that is, collusion and extortion.

The literature on screening and efficient red tape in service delivery is scant. Papers like Wilson (1989), Bardhan (1997), Guriev (2004) show that a certain level of screening and red tape is efficient and necessary for identifying the deserving ones from a pool of applicants given the resources are limited. The thesis following this strand of literature considers a non-zero span of service delivery as opposed to Banerjee (1997) which considers the optimal span of red tape to be zero. This is because Banerjee (1997) deals with red tape as an unnecessary and wasteful procedure marred with corrupt practices. Papers like Banerjee (1997), Saha (2001) consider red tape as an instrument of rent-seeking and corruption. Moreover, while papers like Banerjee (1997), Saha (2001), Guriev (2004), Fredriksson (2014) try to explain the length of red tape in equilibrium, in this thesis the length of red tape is considered to be institutionally given and we check the stakeholder's preferences in equilibrium. Few of these papers also analyze the effect of red tape and corruption from the perspective of social welfare. We intend to gauge how the exogenous institutional reforms like ICT that cuts down the length of red tape by accelerating the service delivery affect the attitudes and behaviors toward corruption.

Rose-Ackerman (2010) argues that bribery is never the first-best outcome. However, Becker (1968) pointed out that corruption can both reduce and increase the welfare

of the economy under different conditions[1]. If it overturns an efficient and just system, the welfare falls. This is the case where corruption 'sands the wheel' of the growth and development of an economy (Mauro, 1995; Aidt, 2009). But if it allows the economy to escape from an inefficient and unjust system, it 'greases the wheel' (Lui, 1985; Beck and Maher, 1986). Theoretically, Andvig (1991) and Banerjee (1997) pointed out that a corrupt official's objective may not match the social objective. The present thesis adds to the literature by showing how the society's preference toward corruption when aggregated from the individual beneficiaries' preferences differs from the society's preferences toward corruption based on the welfare calculation. It also derives conditions on how an exogenous implementation of ICT driven system of provision of goods and services could assist in matching these two objectives towards an honest regime and ensure maximum welfare. The present thesis focuses on the trade-off between the welfare gain from bribery in speeding up the delivery of the good/service vis-vis the welfare loss due to misallocation of the good/service to the undeserving recipients. It gauges whether there are situations where the payment of 'speed-money' may also 'sand the wheel' unlike conventionally perceived in the literature.

The literature on methods of controlling corruption is vast. Papers like Becker and Stigler (1974), Shleifer and Vishny (1993), Mookherjee and Png (1995), Buccirossi and Spagnolo (2006), Basu (2011), Mishra and Mookherjee (2013), Basu, Basu and Cordella (2014), Banerjee, Banerjee and Mukherjee (2021) focusses on the 'top down' approach of controlling corruption that relies on prize, leniency and punishment mechanisms. The thesis differs in its approach from these papers in the sense that it does not aim at finding the optimum solution or combinations of policies like penalties and rewards or leniencies to understand the dynamics of corruption. It takes the grievance redressal process in particular, and finds the effect of the delay in the redressal process, which is common in the developing

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[1] Ahlin and Bose (2007) also show the non-monotonicity of the social welfare function.

part of the world, influences bribery in presence of red tape. The effect of both bribery and the attitude towards corruption are explored.

In contrast to the 'top down' approach mentioned above the World Bank (2004), Olken (2007), Serra (2012), Yanez-Pagans and Machicado (2012) focus on the 'bottom up' approach that stresses the use of beneficiaries' 'voice' in controlling corruption. While research on the top-down approach is enormous, research on the bottom-up approach is rare. The thesis relates relatively more to this strand of literature because it tries to understand the preferences of the beneficiaries between a corrupt regime and an honest regime and gauges what induces them to raise their voice against corruption. The problem of corruption is easier to solve if people vote against it. The thesis combines the top-down and bottom-up approaches and theoretically derives the conditions to understand how a change in administrative policy influences beneficiaries' voices against corruption. It also derives the beneficiaries' attitudes towards corruption through firm-level data from World Bank Enterprise Survey (2020) and the institutional parameters from the World Bank Doing Business data (2020) and finds support in favor of the hypotheses derived in the theoretical section of the thesis.

The thesis also relates to the theoretical models of extortion and collusion like Hindriks, Muthoo and Keen (1999), Marjit, Mukherjee and Mukherjee (2000), Polinsky and Shavell (2001), Guriev (2004), Drugov (2010), Banerjee and Mukherjee (2020). However, the present thesis derives the conditions for the occurrence of extortion and collusion in the context of red tape, which is different from most of the above-mentioned papers except Guriev (2004). In Guriev (2004) extortion does not occur as an equilibrium outcome. It shows a corrupt official extends the length of red tape above the socially optimum level to force an applicant to participate in the 'speed money' equilibrium. Since the applicant complies with the threat, extortion does not occur at the equilibrium. Although collusion achieved through speed money is commonly discussed in the literature on red tape, extortion is rarely discussed. The present

thesis shows that the presence of delay in the redressal process may lead to the existence of extortion in presence of red tape. The predictions of the model have been also tested by the use of the data available from World Bank Enterprise Survey in a cross-country setting. Although the existence of corruption and burdensome regulations are studied in many papers with anecdotal evidence, empirical papers are few due to a lack of reliable data.. Since no individual agent will self-report bribing, papers like Brunetti, Kisunko and Weder (1997) collect data on corruption indirectly as "does similar firms pay bribe" or "does firms in your line pay bribe for this good/service". Fan, Lin and Treisman (2009), Duvanova (2014), Raj, Sen and Kar (2018) and Amin and Soh (2020) employed the World Bank Enterprise Survey where again the same methodology has been adopted to interpret the bribing patterns or the number of informal payments made for accessing a service/good. The present thesis also does the same for identifying the bribe incidences from the Survey. The thesis uses the World Bank Enterprise Survey data in a novel way to analyze the responses in the Survey regarding bribe payments, the length of time spent on administrative purposes, whether the interviewed-firms think corruption is an obstacle or not, and divide these responses into four distinct groups and identified from them the likely group that has been extorted and the group that has colluded. It also identifies the 'honest' firms which think of corruption as an 'obstacle' in doing business, yet pays a bribe. It finds the institutional factors that incentivize these firms to pay the bribe.

The next section provides an outline of the core chapters of the thesis.

1.3.   Outline of the Chapters

The thesis contains three core chapters. This section provides a brief description of the chapters in the thesis.

In the thesis, we develop a theoretical model where a benevolent government allocates a good/service to the applicants who deserve it. The allocation of the good to a

deserving applicant generates a positive externality and its allocation to an undeserving applicant generates a negative externality to the society. It appoints officials for this purpose for screening the deserving candidates out of all the applicants. The bureaucracy has a mix of corrupt and honest officials and the applicants' group is a mix of deserving and undeserving ones. The information of either group's type is private until both parties meet. The official's type is revealed depending on whether he charges a bribe for the good/service. If he charges a bribe, he is corrupt. The applicant's type is revealed through red tape (screening). In the honest regime, to identify the type of applicant, the applicants are required to go through a screening process that takes a fixed time. After the applicants apply and their credentials are received in Period 1, their types get revealed in Period 2 and only the deserving applicants receive the good from the honest officials at the end of the period. In a corrupt regime, an applicant can meet a corrupt official with some probability. The bureaucracy is a monopoly in the sense that the applicants meet the same official for the submission of credentials and screening in Period 1 as well as for the delivery of the good/ service in Period 2.

Chapter 2 focuses on the introduction of Information and Communication Technology (ICT) for shortening the red tape i.e. the time required for screening and delivery of the good in an honest regime. It checks the desirability of the ICT from the stakeholders' perspective. The chapter shows that the support for such a policy reform depends on the stakeholders' profile, the nature of the public good/service, and the initial length of red tape. The implementation of ICT in the delivery of public goods/services may create demand for an honest regime at the individual level. The chapter also compares social welfare under an honest regime and a corrupt regime. The welfare calculation takes account of the loss due to the misallocation of the service in the corrupt regime vis-à-vis the gain from speeding up the delivery of the good compared to an honest regime. The private preference takes care of the loss due to the delay only. It derives the conditions under which the ICT could help in the

convergence of the two social preferences based on the aggregation of private preferences and the social welfare calculation.

Chapter 3 studies corruption in the same bureaucracy that delivers a publicly provided private good to deserving applicants through a time-consuming screening process. The corruption may take alternative forms of collusion involving 'speed money' and extortion. However, this chapter introduces a grievance redressal mechanism in the model, which is also assumed to be time-consuming. The deserving applicants who do not collude in Period 1 can seek redress against Period 2's extortion. There is an application cost of a complaint. Also, it is not that that the redressal process is successful with certainty. If the complaint is successfully redressed the corrupt official is penalized an amount that also includes the application cost of the applicant, and the applicant is provided the goods along with the compensation amount equivalent to the official's penalized amount. The chapter tries to show under what condition collusion and extortion occur as an equilibrium outcome in such a bureaucracy. It also compares the equilibrium payoffs of the applicants under an honest regime and a corrupt regime to derive their preference over the two regimes. The chapter then empirically validates the prediction of the theoretical model on the responsiveness of the bribe amount concerning the length of service delivery and the length of the grievance redress mechanism with the help of the cross-country data taken from the World Bank Enterprise Survey and the World Bank Doing Business Report (2006-2020).

Chapter 4 presents an empirical study where we explore the factors that induce an 'honest firm' that thinks of corruption as an obstacle to doing business to pay a bribe. It is not that everyone violates the law, participates in bribery, and loves a corrupt regime. Some firms think corruption is bad yet pays a bribe for avoiding the cost of delay in receiving public goods/services. Some firms do not compromise. This is evident from the survey itself when we divide the types into four groups. The chapter thus divides the firms into four types: Type I:

the firms who report not paying a bribe and think that corruption is not an obstacle to doing business; Type II: the firms who report not paying a bribe and think that corruption is an obstacle in doing business; Type III: the firms who report paying a bribe and think that corruption is not an obstacle in doing business; Type IV: the firms who report paying a bribe and think that corruption is an obstacle in doing business. The chapter studies the impact of the two *de jure* institutional factors that are studied in Chapter 2 and Chapter 3 i.e., the length of service delivery and the length of the grievance redress mechanism on the 'honest' firm's probability of paying a bribe. Since the data on time spent in administrative procedures by the World Bank Enterprise Survey is a *de facto* measure and the World Bank Doing Business data do not provide data for the number of procedures, we derive the *de jure* time of service delivery from the World Bank Enterprise Survey in a novel way. Since the Enterprise Survey data do not provide the time taken for grievance redressal the *de jure* time for grievance redressal is derived from the World Bank Doing Business data, which is a comprehensive one. It prescribes policies for controlling corruption based on the results obtained in the chapter.

1.4. Results and Contribution to the Literature

The thesis explores individuals' responses to various institutional reforms in a bureaucracy that screens the applicants for the deserving type and delivers the good to the designated recipient. There can be corruption in the bureaucracy, where the corrupt officials would deliver the good to any applicant in exchange for a bribe. The bribe is also used to speed up the delivery of the good.

Chapter 2 focuses on the desirability of ICT in shortening red tape in the delivery of a public good both from the stakeholders' and the welfare perspectives. It shows that although all types of applicants pay speed money in presence of red tape, it is not that everyone prefers a corrupt regime to an honest regime. The undeserving applicants never dislike a corrupt

regime. But the deserving applicants dislike a corrupt regime in two types of situations: the first if the proportion of deserving applicants is high enough and the second if the proportion of deserving applicants is low but the length of the red tape is not long enough. In presence of too long a red tape, no one dislikes corruption. The introduction of ICT may increase support for an honest regime if the red tape is not long enough and if the gap between the two types of applicants' payoff is not very large. Extortion never occurs at the equilibrium since the applicants prefer paying speed money in Period 1. In terms of society's welfare calculation, the chapter shows that there exists a trade-off in a corrupt regime between speeding up the delivery of the good, as it reduces the fall in welfare due to delay in an honest regime and the misallocation that happens as the good is delivered to the undeserving applicants. Whether the welfare gain exceeds the loss crucially depends on the number of deserving applicants in the economy and the extent of externality associated with the good/service. A lower number of deserving applicants reduces the gain from payment of speed money and increases the loss due to misallocation. Therefore, corruption leads to a net loss in welfare 'sanding' the wheel of growth and development. However, the opposite happens in presence of a sufficiently high number of deserving applicants in the economy. If the length of the 'red tape' is shortened through instruments like ICT, the welfare calculation must show social preference tilted towards an honest regime since a shorter red tape reduces the welfare gain from payment of speed money in a corrupt regime. It identifies from the model the conditions under which corruption related to payment of speed money may sand or grease the wheel of development. It also points out that there is a divergence in the preference for an honest regime viewed from the individualistic perspective and the welfare perspective. The individual perspective does not take care of the negative externality generated through the misallocation of the good under a corrupt regime. It also finds out the conditions under which ICT could make the social

preferences based on the two approaches converge and increases welfare in an economy. The results are new to the literature.

Chapter 3 adds a grievance redress mechanism to the model of red tape presented in chapter 2. It shows that unlike the models without the presence of a grievance redress mechanism, where speed money was the only form of bribery, under certain conditions extortion also becomes an equilibrium outcome of the model. It also compares the equilibrium payoffs of the applicants under an honest regime and a corrupt regime to derive their preference over the two regimes and finds, that faster delivery of the goods is a better instrument to generate support for an honest regime than a faster redressal of grievances. In terms of policies, the paper suggests, that (1) the success of the 'bottom up' approach to controlling corruption depends on the choice of the 'top down' approach for the same; (2) implementation of a faster redressal process has limited appeal in controlling the occurrence of corruption compared to faster delivery of public services.

Chapter 4 presents an empirical study on the comparative effect of two different institutional factors viz. speeding of delivery of a public good vis-à-vis speeding of the grievance redress process on the corruptibility of the 'honest firms', who think corruption is an obstacle in doing business yet pays a bribe, using cross-country data. It finds that a slower delivery process and a faster grievance redressal process are conducive to the participation of the 'honest' firms in bribery. The results suggest, that for controlling corruption among these firms, the government should speed up the delivery of public goods/services. Counterintuitively, it also suggests that a faster grievance redress/legal process would increase corruption. The novelty of the chapter lies in the derivation of the data on *de jure* red tape and the identification of the different types of applicants from the World Bank Enterprise Survey.

1.5. Plan of the thesis

The rest of the thesis is organized as follows.

Chapter 2 presents the basic model and derives the conditions under which corruption persists in presence of red tape where ICT exogenously reduces the length of red tape. It also compares the social preferences based on the welfare calculations for the economy with that the preferences based on the aggregation of individual preferences.

Chapter 3 compares the impact of faster service delivery and faster grievance redress on attitudes of economic agents towards corruption.

Chapter 4 first identifies the 'honest firms' from the World Bank Enterprise Survey data and then uses it to derive the factors that induce the honest firms to pay a bribe.

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