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Some economic insight into the problem of corporate accounting fraud

Abstract

This paper examines a situation when the perpetrator of accounting fraud is able to persuade his accomplice, the supplier of fraud to provide a greater quantity than he would normally have under conditions of perfectly symmetrical information. This paper provides one perspective on the occurrence of accounting fraud a problem that is found not only in advanced capitalist countries like the United States but also in newly emerging market economies. It provides a model and derives the equilibrium quantity of accounting fraud in a market where the accomplice faces incomplete information yet has monopoly power over the supply of fraud. The paper distinguishes between fraud that is firm wide or involves more than two employees and benefits many and fraud in which only two individuals are the beneficiaries of the misconduct. In the determination of the level of output the paper discusses the costs and benefits of accounting fraud to both the perpetrator (agent) and the accomplice (principle).

Keywords: fraud, contract, motivation, theft, asymmetric information.

JEL Classification: G30.

Introduction

Recent cases of accounting fraud involving corporate giants such as Enron and WorldCom have made the problem of accounting fraud of growing interests to economists. Interest is due to the role of "...incentive problems and informational issues associated with fraud..." (Mishra, 2005). Economists are also interested in the role of corrupt governments in less developed economies especially when a government's deceitful behavior leads to market outcomes which favor its own interests or profit maximizing goals rather than goals that benefit society as a whole (Bardhan, 1997, 2005; Mishra, 2005). This paper focuses on fraud which emerges out of market failure due to the lack of symmetrical information. The initial act of fraud however is of less importance here than the incidence of fraud that occurs up and above the equilibrium level, an additional quantity of fraud that arises when the perpetrator (the agent) of the crime has access to information that his co-conspirator (the principle) does not.

According to Edi Karni "an agent is said to have committed fraud when he misrepresents the information he has at his disposal so as to persuade another individual (principle) to choose a course of action he would not have chosen had he been properly informed" (Karni, 1989, p. 117). In terms of markets fraud occurs when the seller provides incomplete or incorrect information to the consumer "so as to induce purchases which would not be made if the consumer possessed full information about the qualities of his purchase" (Darby and Karni, 1973, p. 67). In the model provided below the agent is the perpetrator of the fraud and the principle is his accomplice the accountant. The agent misrepresents information so as to persuade the principle to provide more fraud

than he otherwise would do under monopolistic conditions. Thus the contract here is between two perpetrators of fraud as opposed to a seller and some innocent consumer of a commodity.

This paper provides insight into the question of why someone like Barry Ebers who has so much to lose if caught, would undertake accounting fraud at great risk in the first place.

The model presented below is similar to that of government corruption presented in Shleifer and Vishny (1993). The government official has a monopoly on the supply of permits to use a government facility as a bridge. The client or briber can either pay the official the cost of the license, as designated by the government plus an additional amount into the pocket of the official, or the briber can pay an amount less than the actual price to the official whereby the official hands over the license but doesn't record its issuance to the government. In the first case corruption occurs without theft as the official simply hands over to the government the full price pocketing his own payoff. In the second case, corruption occurs with theft as the official pockets the entire payoff and gives nothing to the government. In the model here the principle has a monopoly over the supply of accounting fraud while the consumer is the agent or perpetrator of the fraud. The equilibrium level of fraud under conditions of asymmetric information here involves theft.

This paper will proceed as follows. Section one will discuss fraud in the private sector and the different forms it can take. It will discuss how internal and external forces to the firm affect the quantity of fraud committed by a corporation. Section two presents a monopoly model of accounting fraud. First the equilibrium quantity of fraud is derived under conditions of symmetrical information and second under asymmetric information. The point is made

that the likelihood of fraud occurring, and the quantity of fraud received is greater under the latter. Section four concludes and presents policy solutions to reduce the prevalence of private fraud.

1. Causes of fraud in the private sector

This paper uses a monopoly model to explain the motivation behind powerful corporate decision makers such as Barry Ebbers of WorldCom, to engage in accounting fraud. While the model itself is relatively simple, issues of power and asymmetric information must be understood to get the most out of the model's conclusions.

From an analytical point the internal structure of private firms engaged in fraud can take one of two forms. First is corruption that involves the entire organization. The fraud might be perpetuated by several individuals but the benefits are widely shared throughout the firm. In these cases information regarding the existence of the impropriety is not so secret and outright theft of the firm is unlikely to occur (however that does not mean the firm will not incur a financial cost if caught or that some employees cannot be victims of theft). In the Enron scandal there was a deliberate attempt to manipulate the data to make the company appear more successful than it truly was (Healy and Palepu, 2003). The overstating of Enron's performance was known by several individuals within the company who derived benefit from the exaggerated earnings profile in the form of rising stock prices, salary bonuses or a feeling of general wellbeing associated with good company performance.

The second type of private sector corruption is that which occurs solely between two individuals and does not involve the organization as perpetrator of the fraud. In this case the risk of spreading information is high and the two perpetrators expend substantial effort keeping it secret. In the model here both the instigator and co-conspirator base their on supply and demand decisions in part on the marginal cost of keeping the fraud secret from others within the firm. In addition to the costs of keeping the fraud secret, the participants also coordinate their aspirations by weighing the private costs and benefits to themselves of the accounting fraud and in the case of the agent or perpetrator, his ability to deceive his co-conspirator about his true cost of the fraud.

Gerty and Lehn (1997) look at how the costs and benefits of accounting fraud are influenced by external (market determined) and internal (endogenous responses to the market forces) forces, which in turn causes changes in the amount of fraud undertaken. They suggest a major external force that influences the choice to commit fraud is the "inherent difficulty the market has for valuing some assets. As a general

proposition, the prevalence of fraud is expected to be higher in markets where it is costly to verify the quality of the transacted good" (Gerty and Lehn, 1997, p. 590). Thus they establish an inverse relationship between the probability of detecting accounting fraud and the costs of valuing a firm's assets. Another external factor is the "effect of conscientious independent auditing" (Ibid, 1997; p. 590). Demski (2003) supports this view and suggests that the savings and loans crises in the United States from the mid-1970s through the 1980s and the Enron accounting fraud schemes in the 1990s arose largely due to regulatory change, notably the repeal of the Glass-Steagall Act of 1933 which reduced ability of organizations to manage conflict of interests (Ibid, 2003).

Another external force that would influence the decision to commit accounting fraud would be the increasing complexity of business organizations. They suggests this results in a growing emphasis on shareholder value and "an explosion in the use of option-based compensation" (Homstom and Kaplan, 2001 in Ibid, 2003, p. 54). Gerty and Lehn, however, conclude that managerial compensation schemes do not have statically significant impacts on the likelihood of fraud occurring.

External forces that might reduce the likelihood of fraud are potentially at odds with anti fraud tendencies in the newly emerging market economies such as China and former Soviet economies of Eastern Europe. These countries are dismantling stringent regulations on business and are involved in selling off government run businesses. While many developing market economies have only recently adopted international standards for accounting the opportunities for fraud have grown. In the case of China falsification of corporate books and records is common: "Chinese accounting standards are still evolving, and corporate record keeping is lax at best" (Norton and Huang, 2001). This trend increases the potential for corporate fraud and makes it more difficult to minimize conflict of interests between stakeholders. Growing incidents of fraud are especially acute in countries where existing anti fraud laws and regulations are underdeveloped and ineffective at keeping fraud in check.

Internal factors that can affect the likelihood of fraud include the structure of internal monitoring and compensation systems (Ibid, 1997). While the authors conclude that internal forces have little impact on the likelihood that fraud will occur they did find a slight significant relationship between the concentration of equity ownership by the largest shareholder on the board and a lower probability for fraud to occur. The model below expands on and elaborates on the notion

of internal forces as it applies to private costs and benefits as they accrue to the perpetrator of fraud and his accomplice. For example the Chief Executive Officer might have a private motive to misrepresent the true performance of the company in order to enhance his reputation or for personal satisfaction. A private benefit especially in the case of the co-conspirator might be monetary compensation or a raise or promotion as a reward for undertaking the fraud. Hence, in terms of the model here internal forces have influence when the perpetrators weight the personal costs and benefits of the fraud.

The literature views issues of corporate governance as internal forces which can either exacerbate or alleviate fraud. In this paper we see the firm more as an external force in terms of providing an environment for the fraud to take place. In the more macro environment of institutional deregulation the firm as an institutional conduit provides a window of opportunity for fraud to occur in the first place, while remaining unaware of the improprieties committed. The possibility does exist for the firm to benefit from spillover effects such stock price appreciation and or greater access to loan finance however any motivation for the fraud to occur stems solely from the private benefit and costs accruing to the two perpetrators.

2. The model

The model presented here involves theft of the firm on the part of the perpetrator of the fraud. This fraud deals specifically with two employees of the firm. While the firm might also receive spillover benefits however the primary motivation is some type of private benefit that will accrue to the perpetrators.

The primary question that the model addresses is why would the agent who has so much to lose if caught, be so willing to engage in accounting fraud on such a large scale?

The model could fit within a simple principle – agent framework: “An agency relationship arises when two individuals enter a non-market (contractual) relationship where one individual (commonly termed as the principle) relies on another individual (commonly termed as the agent) to carry out certain actions on his behalf” (Mishra, 2005, p. 5). Commonly, the agent has an ability to withhold information from the principle hence has the ability to “affect the principles payoff in a significant way” (Ibid, 2005, p. 5). As stated above the agent is the instigator of the fraud and the principle is his accomplice, the accountant.

The agent is hired by the firm to oversee the performance of the principle and other employees who work beneath him; the agent could be the chief financial officer or chief executive officer of the firm.

The agent attempts to purchase fraud from the principle and uses the authority granted him by the firm to reward the principle for helping carry out the fraud. The relationship between the firm and agent presents conflict of interests: “a conflict of interest arises when an executive, an officeholder or even an organization encounters a situation where official action or influence has the potential to benefit private interests” (Ibid, 2003, p. 1). In the model fraud occurs where conflict of interests exists. The agent uses his powers of compensation and hiring and firing over employees and his ability to keep information from the principle in order to get a higher level of fraud than he otherwise would. In this manner the firm as an external force plays a major role in setting up conditions for conflict of interest or providing a window of opportunity.

The firm hires employees to produce the product, to run the day to day operations of the business and to maintain financial accounting. The accountant or principle is responsible for keeping track of company finances. The principle has great leeway to present financial data for internal and external review in the manner he deems appropriate with limited scrutiny from outside auditors or directors. Again another window of opportunity provided by the firm as it responds to deregulation within the industry. However he is subject to substantial scrutiny by the agent. The agent is hired by the firm to oversee the conduct of all employees but here we are concerned only with his oversight role of the accountant. The firm grants the agent great leeway in conducting oversight of the accountant including the power to hire, fire, promote and demote employees. The agent’s status is reflected in his high level salary and high rank on the corporate ladder. The decision on the part of the firm to hand over all oversight to a third party is consistent with changes in the corporate governance structure making the firm less effective at managing conflict of interests.

The agent or corporate executive is the instigator of fraud. However his accomplice, the accountant is also greedy and bereft of ethical concerns. The motives of both are purely private in nature, (not unlike Barry Ebbers of World Com) and do not concern directing benefits to the company (BBC News, 2006). Their relationship is familiar and friendly and the principle is loyal to the supervisor. Their relationship provides an opportunity for the agent to request from the principle complicity in the scandal. The agent feels confident to ask him to fudge the numbers without fear of reprisal and is confident that his request will be considered. The agent asks the accountant to manipulate the financial records of the company with the aim to project enhanced earnings profile.

Private benefits, the source of motivation, to the agent could take several forms. First, the private benefit might be monetary, either in the form of cash, a salary increase or bonus or valuation of stock option portfolio. Second, the private benefit might be for non-monetary professional perks such as the use of the company jet, housing subsidy or promotion. Third, a private benefit might arise from a person's desire to increase their status within the company, family or community at large and to increase their business reputation to enhance monetary interests in the future. At any one time a person could be motivated by a combination of these three. For instance, the agent could have an interest in increasing his monetary worth and enhancing his reputation within the company, family and community. Based on this dual motivation the agent might be inclined to engage in accounting fraud to enhance in a positive manner the true performance of the company. An artificially enhanced performance report of the firm could increase the value of stock options and reflect well on the reputation of the supervisor.

If the accounting fraud is successful (that is no one is caught) it might be that the company as a whole could incur a benefit at least in the short run. This might be a due to inflated stock prices, greater access to bank loans and greater enthusiasm and work interest among employees. However, while benefits might accrue to the firm the fraud is motivated by the private benefit that accrues to the supervisor. The principle or accountant is a willing partner who is motivated by the private benefit of the fraud. It is assumed that the accountant has a monopoly in the provision of the accounting fraud and that there is no other to whom the agent could turn to provide the fraud.

The accountant receives a private benefit that is purely monetary. He can negotiate with the agent for some combination of a cash bonus – paid out of the agent's pocket, a raise, a promotion, company stock options (a more common source of employee compensation over the last 20 years) and/or use of company benefits such as jets, restaurant accounts, vacation discounts, etc. Thus when it comes to negotiating a payoff package the agent has the ability to pay out of his own pocket and/or to use his status in the company to grant a promotion, give a raise or hand over company stock options or let the accountant take advantage of company perks normally reserved for executives. It's important to note that the means of compensation available to the agent is a direct outcome of institutional and organizational change taking place within financial markets. Changes in general especially throughout the last twenty years work to decrease company regulation, involve greater internal auditing powers to individuals

within firms, and put less emphasis on external auditors. In addition, especially in the United States where a greater competition among businesses and accounting firms took place which had an overall impact of reducing the ability of companies to monitor conflicts of interests between their employees and between employees and the company interests (Demski, 2003). Deregulation thus leads to the increase in opportunities for certain individuals to exploit conflict of interests for own personal gain. Financial market deregulation has also occurred thought much of the developed world and especially in Eastern Europe where financial market institutions are often more developed than those to be found in African countries.

The agent and accountant must also consider the marginal cost of each unit of fraud, a cost that is incorporated by both the agent and principle in their decision making process. It is assumed that the agent faces a higher cost of fraud than the accountant in the case that they are caught. The cost of fraud to the agent is the loss of a very high level of compensation, power within the company, reputation and a life of luxury. His wealth which mirrors his success also gives rise to a feeling of social importance and reputation within the community (the agent is motivated to undertake fraud in part by a desire for an enhanced reputation). Therefore, another marginal cost is the loss of his good reputation. Overall, if caught the agent risks losing his job and salary, his luxurious lifestyle and his good reputation. The accountant, however, has less to lose. He will likely to lose his job and his salary and his upper middle income lifestyle. However, being of relatively low profile relative to the supervisor, he does not risk losing his reputation within the firm and community, though he does risk losing it in his family. Finally, both the agent and the principle risk jail time as well. It is because the agent can lose his good reputation and luxurious lifestyle (in addition to what the accountant will suffer if caught) that he has more to lose than the accountant.

The difference between the agent's marginal benefit and the agent's marginal cost is the net marginal benefit curve (NMB). The agent's NMB curve is the demand curve faced by the monopolists. The demand curve is downward sloping because as the quantity of fraud increases the likelihood of getting caught increases hence the cost of keeping the fraud a secret goes up. See Figure 1. The NMB curve of the agent is the demand curve faced by the principle monopolist.

The marginal cost curve (MC) in Figure 1 reflects the marginal cost to the accountant of maintaining secrecy of each hour of fraud committed. Keeping

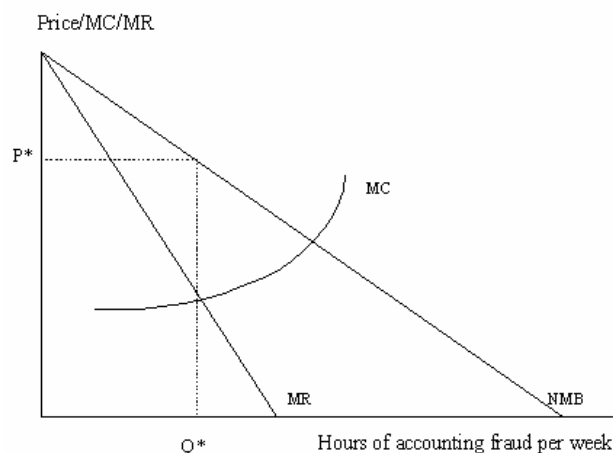
the fraud secret is very important because the benefits of the fraud are private and are not shared by other members of the firm (any benefits that accrue to the firm only do so as spill over effects). The risk of getting caught increases at an increasing rate as the quantity of accounting fraud increases which means that the cost of maintaining secrecy rises on the margin the greater the number of hours spent on the fraud. This rising MC differs from the government corruption model in Shleifer and Vishny (1993) where they assume marginal cost remain constant at every level of fraud. The marginal revenue curve (MR) depicted in Figure 1 is a standard monopolist's MR curve; it represents the additional private benefit that the accountant will receive for additional hours of accounting fraud committed. The MR declines as output expands because the agent is only willing to accept a higher quantity of fraud at a reduced cost.

The price, MC and MR are depicted on the vertical axis while the quantity of fraud or hours spent per week by the accountant "fudging the numbers" is on the horizontal axis. The contract between the agent and monopolist accountant determines the number of hours the accountant spends each week on the fraud. It is assumed that the agent prefers a quantity consistent with what would be provided under conditions of perfect competition, that where $P = NMB$. However, faced with a monopolist the agent makes the best out of the situation.

The equilibrium quantity and price of accounting fraud will be derived under two different sets of assumptions. In the first case information is perfect between the agent and principle, in the second, information is asymmetric. First, it is assumed that the accountant knows the true value of the agent's net marginal benefit of accounting fraud. NMB in Figure 1 is the actual NMB curve. Second, the assumption is changed such that the agent has the ability to keep hidden from the accountant the true NMB of accounting fraud. The model demonstrates that the contract derived under asymmetric information is the only one that provides sufficient motivation to the agent to engage in fraud.

2.1. The model under symmetric information.

When the agent solicits the fraud from the accountant and an agreement is reached, the accountant will behave as a regular monopolist. The accountant will maximize profits and set $MR = MC$ and provide the quantity Q^* labeled in Figure 1. He will charge a price P^* where $P^* = NMB$ to the agent at Q^* . The equilibrium price, P^* , will be paid by the agent if he agrees to the contract. Payment will take the form of some combination of cash, a raise and/or promotion, stock options plus valuation if it occurs.



Note: The accountant behaves as a pure monopolist in his supply of hours of accounting fraud. His demand curve is the net marginal benefit curve of the supervisor, NMB. His marginal cost curve, MC, reflects the cost on the margin he would incur if caught engaging in fraud. He supplies an output of fraud at Q^* where the additional revenue he gets for providing an additional unit of fraud, MR, equals the additional cost of providing the fraud, MC. $MC = MR$.

Fig. 1. Monopoly market for accounting fraud without asymmetric information

The accountant's motivation for engaging in fraud is clear. He receives a monopolist price ($P^* > MC$) which he achieves by supplying a level of output lower than what would be supplied under perfect competition (hence he faces a lower MC at Q^*). However from the agent's point of view the motivation to accept the contract is less clear. If the agent accepts the terms of the offer, he will receive a lower quantity of fraud than under conditions of perfect competition and pay a higher price ($P > MC$). So why does the agent accept the terms of the contract especially since the agent has more to lose if caught engaging in fraud than the accountant? If this was the case in reality it seems accounting fraud would be a relatively rare phenomenon. However, especially after the deregulation of business financial and accounting procedures, the actual numbers of corporate fraud have increased (Ibid, 2003) and have caused extensive social losses in the billions of dollars! In addition, there are many examples where fraud is perpetuated over several years and which involve great risk and great monetary losses.

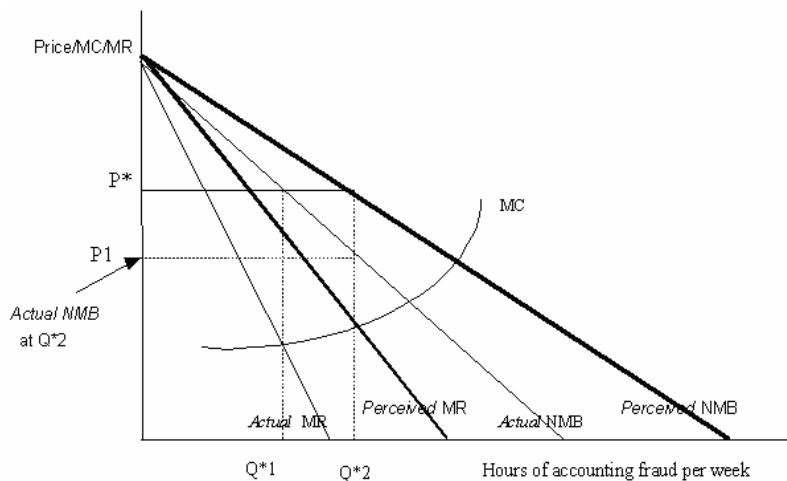
2.2. The model under asymmetric information.

With asymmetric information it is assumed that the agent is able to hide his true NMB for each hour of fraud committed by the accountant per week. Now the accountant faces a *perceived* NMB curve and a *perceived* MR curve. Figure 2 adds the *perceived* NMB and MR curves to the NMB and MR curves shown in Figure 1; the NMB and MR curves from Figure 1 are now called the *actual* NMB and the *actual* MR. Recall the assumption above that the

agent has more to lose if caught and persecuted for fraud than the accountant because he does not only risks losing his job, his high standard of living, and his reputation within the family, he risks more jail time than the accountant and he risks losing his reputation within the wider community. This information is kept secret from the accountant. The agent is able to hide his actual NMB for each hour of fraud because his high status in the firm and the power afforded to him to carry out his duties.

The *perceived* NMB is greater than the *actual* NMB for each hour of fraud per week because the agent

wants the accountant to believe that he gets more benefit from each hour of fraud than he actually does. The logic behind this manipulation of the truth is that the agent wants to encourage the accountant to provide a higher quantity of fraud something that is easier to do if the accountant believes that the overall cost if caught is low. In other words the agent thinks that the accountant would provide more fraud if he believes the crime is less “criminal” than it actually is and less of a “big deal.” This sense of the severity of the fraud is conveyed by the agent when he acts like he gets a higher NMB from each hour of fraud.



Note: With asymmetric information the agent hides the true net marginal benefit of receiving fraud. He lets the accountant believe that his NMB is greater than it actually is. In the figure the accountant believes the perceived NMB is his demand curve, and will provide Q^*2 hours of fraud, where perceived MR = MC. But the actual NMB at Q^*2 is actually lower and is equal to a price of $P1$. The agent keeps his actual NMB from the accountant by agreeing to pay a price of P^* ; he can pay a price of P^* in access of $P1$ because the agent can compensate the accountant with a raise or promotion, a compensation which he effectively steals from the firm. If the accountant knew the actual NMB to the agent he would reduce the quantity of output offered from Q^*2 to Q^*1 which would make the agent less well off.

Fig. 2. Monopoly market for accounting fraud with asymmetric information

The accountant, believing the *perceived* NMB curve is the *actual* NMB curve, sets the *perceived* MR = MC and charges P^* (= perceived NMB) for Q^*2 units of fraud. The agent then confirms the accountants (miss) belief by accepting the terms of the contract P^* and Q^*2 . By accepting the contract and paying P^* for Q^*2 quantity of fraud the accountant believes the *perceived* NMB shown in Figure 2 is the agent's *actual* NMB. In this manner, by hiding his true NMB from the accountant the agent gets a larger quantity of fraud than he would have if the accountant knew his actual NMB and MR. In Figure 2 the accountant would have supplied $Q1^*$ (where actual MR = MC), a quantity less than $Q2^*$.

Although the agent gets a higher quantity of fraud by hiding his actual NMB from the accountant, the question still remains as to why the agent is still willing to pay for a quantity less than that associated with $P = MC$? Furthermore, unlike the case under symmetric information where even though the agent

got less than the desired quantity of fraud, he still only paid $P^* = \text{NMB}$ of the fraud, now he must pay P^* which is greater than the actual NMB of Q^*2 of fraud. Thus, while lying about his true NMB of fraud the agent receives a greater quantity of fraud, it now cost him more to pay off the fraud given that $P^* > \text{actual NMB}$ at Q^*2 . Why would the agent be willing to accept a more expensive contract just to get a higher quantity of fraud? After all he could be satisfied with Q^* in Figure 1 where he at least is not paying a price greater than his NMB, which could be seen as a more attractive proposal.

In short the answer to these questions is that the agent when he agrees to pay P^* for Q^*2 output, is not really paying P^* – he is really only paying $P1$ (shown in Figure 2), the price equal to the *actual* NMB of Q^*2 ! Thus while he still receives less than his preferred output of fraud, he will still pay a price equal to his *actual* NMB. The agent derives greater benefit under the asymmetric information contract

because he gets a greater level of output than he does under the symmetric information contract.

Recall above the discussion on form of payment to the accountant. The price paid by the agent includes some combination of the following: a cash bonus – paid out of the agent’s pocket, a raise, a promotion, stock options and use of company benefits such as jets, restaurant accounts, etc. In Figure 2, the difference between P^* and P_1 at Q^* , illustrates the pay-off amount that the agent does not really pay. The agent only pays P_1 which is equal to his actual NMB at Q^* . This amount would be an out of pocket cash bonus to the accountant and would reflect a personal monetary loss on the part of the supervisor. However, the payoff amount from P_1 to P^* is not paid by the agent but is actually “paid” by the company! The company, however, is not informed of this contribution as the agent and the accountant have kept the entire contract secret from other individuals within the firm.

What this means is that the supervisor, using his position and power granted him, engages in fraud with theft. In effect, the agent is stealing from the company. He signs the accountant up for a raise and or promotion but the accountant does not actual deserve the raise in terms of higher productivity or promotion other than the fact that he engages in accounting fraud. While the benefits of accountant’s actions benefit only the agent (excluding any positive spillover effects to the company) the agent uses his power to make the company pay for the crime. The cost to the agent of granting a raise is simply the time it takes him to sign a new employee contract form!

The rise in the use of stock options as has happened in the United States after the repeal of the Glass-Steagals, Act, provides the agent with another means of stealing from the company. All that is required from the agent is that he put in a request for more stock options to be produced (if there is not an available pool) than hand them out to the accountant under the pretense that the accountant somehow deserved them. Deregulation makes it easier for the agent to carry out the fraud in secret and to pay for it by stealing from the firm. The bottom line is that the economic motivation for the agent to engage in accounting fraud is because it is inexpensive for him to do so. His position of power in the company and the lack of monitoring of his behavior give a window of opportunity for him to steal from the firm in order to pay for accounting fraud.

Conclusion

This paper addresses the motivation behind corporate fraud in the current environment of deregulation. The model suggests that the agent is easily able

to cheat the system and hire the accountant but not pay out of his own pocket. Or at least not pay the entire cost out of pocket.

The agent is able to get the accountant to engage in fraud on his behalf because the agent has the power to hide his true net marginal benefit from the accountant, which is actually lower for each unit of fraud. This has the effect of increasing the quantity of fraud performed by the accountant per week. The agent is willing to pay the price of the fraud because he only pays out of his pocket a price equal to the actual NMB and not the perceived NMB that the accountant believes he receives. He can do this because his power in the firm gives him discretion over firm resources such as salary decisions and promotions. His status and the firm's reduced ability to monitor conflicts of interest (due to deregulation) provide a window of opportunity; he steals when he uses the resources of the firm to provide an unwarranted promotion, or salary increase and by handing over company stock options as a form of compensation to the accountant.

To address the problem of accounting fraud it’s necessary to look at how sources of individual motivation such as greed and power interact with changes in rules of law and market deregulation. The model demonstrates that there is a risk associated with letting supervisors and higher level executives, function with greater leeway and individual discretion. Financial systems undergoing deregulation could reduce the opportunity for accounting fraud by engaging in the following activities. First, to reduce moral hazard by reducing powers of discretion given to supervisors and top executives. The lack of monitoring on executive behavior leads to a greater risk that individual fraud will occur and that the firm will be cheated in some way or another. In terms of the model this means reducing the ability of supervisors to give raises and promotion as an inexpensive form of compensation at least without substantial oversight. Second, to ensure that the top accountant is not permitted to monitor its own accounting office within the company but is subject to review from external auditors. This way the accountant will not be in a position to offer fraud for sale, virtually undetected from others within the organization. Third, to open channels of communication within the firm about the problem of fraud and especially the costs of getting caught. In terms of the model the accountant will eventually learn that the cost of the fraud to the agent is actually higher than what seems the case. For instance, in the United States Barry Embers of World Com, sentence of 25 years in jail will likely make greedy accomplices think twice about providing fraud in exchange for money or promotions. In Figure 2 this will rotate the perceived NMB curve inward and will ultimately reduce the quantity of fraud hours offered by the accountant.

References

1. BBC News online, "Enron trial decision under fire" July 2006.
2. Bardhan, Pranab, "The Economist's Approach to the Problem of Corruption", *World Development*, Vol. 34, No. 2, 2005.
3. Bardhan, Pranab, "Corruption and Development: A Review of the Issues", *Journal of Economic Literature*, Vol. 35, 1997.
4. Colander, David. 2005. What Economists Teach and What Economists Do. *Journal of Economic Education* (Summer 2005): 249-261.
5. Darby, Michael and Edi Karni, "Free Competition and the Optimal Amount of Fraud", *Journal of Law and Economics*, Vol. 16, No. 1, 1973.
6. Demski, Joel, "Corporate Conflicts of Interest", *Journal of Economic Perspectives*, Vol. 17, No. 2, 2003.
7. Gerety, Mason and Kenneth Lehn, "The Causes and Consequences of Accounting Fraud", *Managerial and Decision Economics*, 18, 1997.
8. Healy, Paul and Krishna Palepu, "The Fall of Enron", *Journal of Economic Perspectives*, Vol. 17, No. 2, 2003.
9. Karni, Edi, "Fraud" in Eatwell, John et al., the New Palgrave: Allocation, Information and Markets, Macmillan Press Limited, 1989.
10. Mishra, Ajit, Ed., *The Economics of Corruption*, New Delhi, India: Oxford University Press, 2005.
11. Norton, Patrick and Lane Huang, "Management Fraud in China", in *Topics in Chinese Law*, March, 2001.
12. Shleifer, Andrei and Robert W. Vishny, "Corruption", *Quarterly Journal of Economics*, August, 1993.