

Dissertation Proposal

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Essays on the Structural Models of Executive Compensation

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This dissertation is composed of three chapters on the executive compensation in S&P1500 firms using the structural modeling approach.

Chapter 1 provides the literature and methodology background of this dissertation. This chapter reviews the existing studies on executive compensation and introduces the structural modeling approach which is used to identify and test principal-agent models. I use a structural model of principal-single-agent moral hazard as an illustrative example to discuss how the equality and inequality equilibrium restrictions implied by the model help me develop the empirical strategy of non-parametric identification and test. Then I discuss two extensions. First, I extend the empirical strategy into three moral hazard models of principal-two-agent. The three models differ in terms of whether the two agents monitor each other and how the principal treats the two agents who engage in mutual monitoring. Second, based on Gayle and Miller (2012), I discuss how the empirical strategy can be extended to a principal-single-agent model of both moral hazard and hidden information.

Chapter 2 is based on my job market paper entitled "Mutual Monitoring within Top Management Teams: A Structural Modeling Investigation". This chapter applies the first extension discussed in Chapter 1 to study whether executive compensation reflects that shareholders take advantage of top managers' mutual monitoring. Mutual monitoring as a solution to moral hazard has been extensively studied by theorists, but the empirical results are few and mixed. This paper non-parametrically identifies and tests three structural models of principal-two-agent moral hazard using the data of S&P1500 firms from 1993 to 2005. The Mutual Monitoring with Individual Utility Maximization Model is the most plausible one to rationalize the data of executive compensation and stock returns. The No Mutual Monitoring Model is also plausible but relies on the assumption that managers have heterogeneous risk preferences across firm characteristics. The Mutual Monitoring with Total Utility Maximization Model is rejected by the data. This paper indicates that shareholders seem to recognize and exploit complementary incentive mechanisms, such as mutual monitoring among self-interested top executives, to design compensation.

Chapter 3 is based on my joint paper with George-Levi Gayle and Robert A. Miller, which is entitled "The Consequences of the 2002 Governance Rules for CEOs' Compensation". This chapter applies the second extension discussed in Chapter 1 to study how a regime change in the regulatory environment may affect the efficiency of executive compensation. The governance rules enacted in 2002 aim to improve the corporate governance of U.S. firms, for example, by mitigating the agency problems between shareholders and CEOs. We adopt a generalized moral hazard framework and estimate the agency cost of moral hazard and that of hidden information. We contrast these two costs in the period from 1993 to 2002 with those in the period from 2003 to 2005. We seek to provide a more comprehensive quantitative evaluation on the potential costs and benefits of 2002 governance rules. We find that these rules seem to alleviate the hidden information problem universally in the economy, but it may mitigate the moral hazard problem in some firms only.