

Comment on ‘Top Management Compensation and the Structure of the Board of Directors in Commercial Banks’

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As argued by Jensen (1993), the primary tasks of a firm’s board of directors are to advise, hire, fire and determine the level and form of managerial compensation. Managerial pay can be structured as part cash and in part be tied to a performance index, such as corporate earnings or the firm’s stock price. The latter effectively aligns the interest of managers with those of stockholders, which in turn reduces agency problems related to free cash flow, managerial time horizons and effort levels. At the same time, stock-based compensation increases managerial exposure to non-diversifiable risk, which may cause risk-averse managers to underinvest in risky projects. The trade-off between the benefits of managerial incentive alignment and the cost of underinvestment is largely an empirical issue, and the widespread observation that managerial compensation is primarily paid in cash¹ suggests that managerial risk aversion weighs heavily or that boards generally resort to substitute monitoring mechanisms.

The paper by Angbazo and Narayanan (1997) is part of a rapidly growing empirical literature attempting to identify important cross-sectional determinants of the form of executive compensation. Motivated in particular by the early work of Fama (1980) and Fama and Jensen (1983), this literature conjectures that executive pay is not only motivated by manager–shareholder incentive alignment and risk preferences, but also by the workings of the firm’s corporate governance structure. This literature recognizes that the board of directors is an imperfect agent for shareholders, as board members have their own private incentives and struggle with informational asymmetries vis-à-vis the top management, all of which affects the board’s monitoring effectiveness. As discussed below, this view suggests that factors such as board size, board longevity (tenure), the proportion of the board consisting of independent or outside directors, whether the CEO is also chairman of the board, the role of institutional investors as board members, etc., along with

¹ See, e.g., Jensen and Murphy (1990), Holthausen and Larcker (1993), and Hwang and Anderson (1993).

firm risk characteristics also play important roles in explaining the cross-sectional variation in executive compensation and direct board monitoring activity.

Angbazo and Narayanan study executive compensation, board structure and firm performance of a sample of 97 U.S. commercial banks in 1989. Interestingly, by restricting their sample to a single industry, the paper eliminates the usual concern that omitted industry factors tend to bias the coefficient estimates in cross-sectional regressions determining executive compensation. Also, by focusing on commercial banks, the paper provides unique insights into the compensation policies emerging in a regulated industry. Banking regulations tend to reduce both managerial and board discretion, thus one expects to find different compensation schemes and board structures in this industry. Indeed, Angbazo and Narayanan show that the average proportion of total executive compensation paid in the form of shares is only 10% (median 1%) compared to, e.g., 35% in the broader industry sample of Core, Holthausen and Larcker (1996).

My major concern with the Angbazo and Narayanan paper has to do with their choice of model specification. To illustrate, let m denote the board's 'overall monitoring effectiveness', and suppose that m is some function of the proportion of total executive compensation paid in stock e as well as of the board's own direct monitoring effort f , i.e.,

$$m = m(e, f). \quad (1)$$

The endogenous decision variables e and f are generally functions of each other: They may be *substitutes*, in which case higher stock-based compensation requires less direct monitoring in order to produce a given monitoring effectiveness, or *complements*, in which case direct monitoring increases the value of a given level of stock-based compensation (e.g. by reducing the cost of underinvestment). Moreover, e and f are generally functions of the vector $\mathbf{x}$ representing various characteristics of the board and the firm, i.e.

$$\begin{aligned} e &= e(f, \mathbf{x}) \\ f &= f(e, \mathbf{x}). \end{aligned} \quad (2)$$

In other words, in the Angbazo–Narayanan context, one needs a simultaneous-equation system for e and f in order to provide unbiased estimates of the sensitivity of any one decision variable to elements of the vector $\mathbf{x}$.² Angbazo and Narayanan instead follow the tradition in the literature and estimates $e = e(\mathbf{x})$, thus omitting f and effectively assuming $m = m(e)$. The magnitude of the resulting simultaneous-equation bias is unknown, and its direction depends on whether e and f are substitutes or complements.

It follows from the above discussion that both the reliability and interpretation of Angbazo and Narayanan's cross-sectional coefficient estimates depends on whether

² Since f is unobservable, one could alternatively resort to structural factor analysis, e.g. as in Titman and Wessel (1988) and Eckbo and Verma (1994).

one believes that $f > 0$, i.e. that direct monitoring is present and important. Indeed, the paper's own evidence supports the suspicion that $f > 0$: A distinct finding is that e is a function of characteristics of the board which is expected when the board also performs a direct monitoring function (in addition to simply determining e). Specifically, Angbazo and Narayanan find that e increases with the number of outside board memberships held by a firm's outside directors (henceforth 'outside board intensity') and decreases with the tenure of outside directors. In my view, the significance of board intensity and tenure variables in the equation for e indicates that f is missing from the cross-sectional regression equation.

To elaborate, recall that e and f are either complements or substitutes in the function for m and consider the following possibilities: Assuming complementarity, high outside board intensity reflects individual board members' high reputation for direct monitoring f (thus increasing e), while long board tenure indicates that the board grows less independent from management over time, which implies lower f and thus lower e . Alternatively, assuming e and f are substitutes, board intensity reduces f (and thus increases e) due to lack of time spent per board membership, while tenure increases f (and thus reduces e) due to acquisition of firm-specific knowledge by long-lasting directors. Of course, one cannot use the Angbazo-Narayanan estimates to sort out these scenarios since it requires adding an equation for f which in turn may alter both the sign and significance for the board intensity and tenure variable in the equation for e .

There is extant empirical evidence to support the notion that outside directors are relatively effective monitors. For example, Rosenstein and Wyatt (1990) document a positive stock price reaction to the appointment of outside board members, while Weisbach (1988) presents some evidence that boards dominated by outside directors are more likely to dismiss CEOs following a period of poor performance. At the same time, Hermalin and Weisbach (1991) and Yermack (1996) report that the proportion of the total board represented by outside directors has little impact on firm performance. Interestingly, the evidence presented by Angbazo and Narayanan suggests that outside board *intensity* and *tenure* are more fundamental variables than the number of outside directors per se.

The evidence of Angbazo and Narayanan also suggests that outside board intensity and tenure are negatively correlated. In other words, in the sample year of 1989, the outside board members with the highest number of outside directorships also had the shortest tenure at that point. This could be driven by a tendency for reputable outside board members to change their board membership relatively often (perhaps because you tend to 'lose friends' when exercising effective monitoring), or that shareholder demand for relatively reputable outside board members increased throughout the 1980s, a period with rapid changes in U.S. corporate governance structures. Again, this evidence may also change once one implements the simultaneous-equation system (2).

Finally, Angbazo and Narayanan report that e is positively correlated with the firm's cumulative stock returns over the subsequent two-to-six years. Let v denote

firm performance, and suppose that the fundamental relationship is $v = v(m)$. If e and f are substitutes, then a regression of v on e (omitting f) is not expected to produce a significant coefficient (lower e is offset by higher f to produce a given m and v). Thus, one interpretation of the Angbazo–Narayanan finding is that e and f are complementary. However, the data may lack power to reject the substitutability hypothesis as well: The paper measures stock price performance over the years 1989–1995, a period which early on saw a general economic downturn. *Ceteris paribus*, after a downturn, one is more likely to observe that low-risk banks (for which high stock-based compensation is more likely) have higher realized stock returns than high-risk banks. The perhaps most obvious solution to this inference problem is to perform the analysis over different time periods, a suggestion that I strongly encourage Angbazo and Narayanan to pursue.

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