

George Mason enroll in a quantitative methods course where they learn basic economic principles, as well as statistics, accounting, finance, and econometric techniques. A fundamental part of the restructured curriculum was the development of specialized courses of study through which students could elect to acquire in-depth expertise in a particular legal sub-specialty (1991: 14). In just a few years under Manne's guidance, the number of applicants to George Mason had tripled. The law school was labelled as 'one of the up-and-coming law schools in the United States' (1991: 14), and it was recognized as one of the few law schools in the US interested in serious interdisciplinary scholarship.

In 1996 Manne resigned as dean of George Mason. In 1997 Mark Grady, a professor from UCLA whose legal scholarship had been in the field of torts, became Dean of George Mason Law School. Dean Manne's ties with the Law and Economics Center of George Mason have been severed. He remains a University Professor at George Mason University, but the future of the Law and Economics Center is unclear. It is noteworthy that the law and economics centres that Manne previously established at Emory University in Atlanta, Georgia, and the University of Miami (Florida) did not long survive after Manne ended his associations with those institutions, and neither of those institutions sponsors significant research in law and economics today.

JONATHAN R. MACEY

See also AUCTIONS AND TAKEOVERS; CHICAGO SCHOOL OF LAW AND ECONOMICS; INSIDER TRADING; LAW-AND-ECONOMICS IN ACTION; MARKET FOR CORPORATE CONTROL; SECURITIES REGULATION; TENDER OFFERS.

Subject classification: 4c(i); 7c.

STATUTES

- Celler-Kefauver Act (1950), 29 December, ch. 1184, 64 Stat. 1125.
Securities and Exchange Act (1934), 6 June, ch. 404, 48 Stat. 881.
Williams Act (1968), 29 June, Pub. L. 90-439, 82 Stat. 454.

CASES

- SEC v. Texas Gulf Sulfur Co.*, 401 F2d 833 (2d Cir. 1968).

SELECTED WORKS

1961. Current views on the 'modern corporation'. *University of Detroit Law Journal* 38: 559-88; reprinted in *Corporate Practice Commentator* (1962) 4: 1-40.
1964. Some theoretical aspects of vote sharing, *Columbia Law Review* 64: 1427-45.
1965. Mergers and the market for corporate control. *Journal of Political Economy* 73: 110-20.
1966a. *Insider Trading and the Stock Market*. New York: Free Press.
1966b. Tender offers and the free market. *Mergers and Acquisitions* 91: 90-115.
1967. Our two corporation systems: law and economics. *Virginia Law Review* 53: 259-84.
1968. Prohibition on Wall Street? *Barron's* 16 December: 5, 16-18.
1970. Insider trading and the law professors. *Vanderbilt Law Review* 23: 547-90.
1971. The parable of the parking lots. *The Public Interest* 23: 10-15.
1972 (with H.C. Wallich). *The Modern Corporation and Social Responsibility*. Washington, DC: American Enterprise Institute.

- 1974 (with E. Solomon). Economic aspects of required disclosure under federal securities law. In *Wall Street in Transition*, New York: New York University Press.
1986. The real Boesky-case issue. *New York Times*, 25 November: A27.
1988. The SEC v. the American shareholder: the Drexel Burnham case. *National Review*, 25 November: 26-9.
1991. In specialization, George Mason was first. *National Law Journal* 23: 14.
1993. An intellectual history of the School of Law, George Mason University. Monograph published by the Law and Economics Center of George Mason.

BIBLIOGRAPHY

- Berle, A.A., Jr. and Means, G.C. 1932. *The Modern Corporation and Private Property*. New York: Macmillan.
Crovitz, G. 1990. George Mason's entrepreneurial Dean preaches economics. *Wall Street Journal*, 4 April: A25.
Kaufman, A. 1994. Kohlberg Kravis Roberts & Co. and the restructuring of American capitalism. *Business History Review*, 22 March, 67: 52-97.
Marx, C. 1994. *Investor's Business Daily*, 20 January: 1-3.
Matthews, J. (quoting Henry Manne). 1993. Business tries to shape legal system, report says. *The Washington Post*, 19 May: F4.
Seligman, D. 1983. An economic defense of insider trading. *Time*, 5 September: 27.

marginal deterrence. See CRIMINAL ATTEMPTS; PUBLIC ENFORCEMENT OF LAW.

market for corporate control. If managers of firms do not indulge in activities that maximize the wealth of shareholders, most economists today would say that those managers should be given the proper incentives, replaced, or punished by the market for corporate control. The market for corporate control values the rights of owners to set the compensation level of top managers, structure their compensation contracts, and to hire and fire these managers. Accordingly, the market for corporate control is an important part of the managerial labour market wherein alternative teams compete for the rights to manage corporate resources (Jensen and Ruback 1983). This market operates both within and outside the firm. Rather than list all mechanisms within the market for corporate control and do injustice to all of them, we have detailed a few important internal and external control mechanisms.

INTERNAL CONTROL MECHANISMS. There are a number of internal control mechanisms that help in aligning managerial and shareholder interests. Among the most important are (1) equity ownership of top managers, (2) performance-related chief executive officer (CEO) compensation, (3) mechanisms for matching jobs and human capital, and (4) boards of directors.

(1) *Equity ownership of top managers.* Research on managerial compensation has logically focused on two areas of examination: (i) the equity ownership of all top managers and/or members of the board, and (ii) the entire compensation contract of the chief executive officer. We

begin with the relationship of firm value and the equity ownership of the top managers.

Berle and Means (1933) were the first to posit that when principals such as shareholders do not have the necessary information or skills to manage the firm, they rely on agents or managers who may hold little equity in the firm. Such an arrangement may lead some agents to shirk or undertake suboptimal investment projects to maximize their own benefits, rather than maximizing principals' wealth. More recently, researchers have argued that managers deviate from shareholder wealth-maximization by consuming perquisites when they do not have an ownership stake in the firm (Jensen and Meckling 1976). Accordingly, more managerial ownership aligns managerial interests with shareholder interests. Alternatively, in another information setting, managers may use ownership stakes to signal to markets that they have projects of a high quality (Leland and Pyle 1977). Hence more managerial ownership can be associated with a higher market value of the firm.

There is no reason to believe that a relationship between managerial stakes and firm performance is linear. For example, Stulz (1988) models the takeover process as a game between managers and an outside bidder vying for the voting rights of a number of small, competitive and passive shareholders. Increases in managerial ownership stakes force the outside bidder to pay higher premiums to gain control of the firm. When the managerial ownership stake is so large that a takeover is not profitable to the bidder, however, high managerial ownership levels reduce *ex ante* market value. Accordingly, increases in managerial ownership increase the premium that the bidder must offer, but decrease the probability that the bidder makes a bid. These two opposing forces imply that the firm's market value first increases and then decreases with each increase in the managerial ownership stake.

In an empirical line of inquiry, Mørck, Shleifer and Vishny (1988) estimate a piecewise-linear relationship between board ownership stakes and average Tobin's Q (where Q is the sum of market value of equity, debt, and preferred stock divided by the replacement value of assets). They find that Tobin's Q increases and then decreases with increases in managerial ownership, and suggest that the firm's market value is adversely affected at managerial ownership levels between 5% and 25%. In this range of ownership stakes, managers are entrenched and can indulge in non-value-maximizing activities without being disciplined by their shareholders. The authors find that for managerial ownership levels greater than 25%, the relationship between board ownership and Q once again turns positive. Nonlinearity in the relationship between managerial ownership and firm performance has been corroborated in a number of settings. McConnell and Servaes (1990), using a larger data set, find a quadratic relationship between managerial ownership and Tobin's Q . Further, they find the relationship to turn slightly negative when managerial ownership reaches approximately 40% to 50% of the firm. Hubbard and Palia (1995a) examine mergers, and find that the bidder's excess returns increase until ownership levels of 5% are reached and turn negative thereafter.

To summarize, cross-sectional studies have generally concluded that the relationship between firm value and insider ownership (i.e., ownership of top managers, and in some cases, ownership of the total board of directors), is nonmonotonic though there are differences across studies about the point at which the relationship becomes positive or negative. This finding may be at odds with the more general notion that firms are governed by a network of relationships, and that once one controls for observed firm characteristics and unobserved heterogeneity (via firm fixed effects), there is no effect of changes in managerial ownership on firm performance. Accordingly, firms are in equilibrium with respect to unobserved contracting characteristics and focusing on one such endogenous relationship is inappropriate (Demsetz and Lehn 1985; Himmelberg, Hubbard and Palia 1996).

(2) *Performance-related CEO compensation.* In principle, pay-performance sensitivity, and not just the level of pay, is important for optimal compensation policy. In one investigation, Jensen and Murphy (1990) suggest that a large part of the pay-performance sensitivity is from the value of stock owned by the CEO and from the value of unexercised options. Examining the sensitivity of different components of CEO pay to shareholder wealth, they find that each \$1,000 change in shareholder wealth corresponds to an average increase in this year's and next year's salary and bonus of only two cents. Dismissals do not appear to be an important part of managerial incentives, because the increases in dismissal probability due to poor performance and its associated penalties are extremely small. Jensen and Murphy estimate an upper bound for stock options and other compensation components of \$0.75 per \$1,000 change in shareholder wealth; the greatest sensitivity comes from the value of stock owned by the CEO, estimated to be \$2.50 for each change in firm value of \$1,000. Thus their combined estimate of the CEO pay-performance sensitivity is only \$3.25 per \$1,000 change in shareholder wealth. Such a small estimated sensitivity may be attributed to political forces that operate in the contracting process that implicitly or explicitly constrain the type of contracts that can be written between managers and shareholders. Jensen and Murphy suggest that forces operating in the political sector and within organizations appear to have a major impact on the CEO's compensation contract. The impact of these forces is both informal and indirect, and is therefore difficult to document. For example, they suggest that public disapproval of high rewards seems to have truncated the upper tail of the compensation contract for CEOs. This sentiment would indirectly be absorbed by the board of directors of the corporation and the compensation committee members that design the CEO's contract. Because, in addition, a CEO's wealth constraint would make very large penalties for poor performance impossible, one would expect to find a more compact distribution for the sensitivity of CEO compensation to performance.

In another view, variations in CEO compensation and pay-performance sensitivity reflect differences in investment opportunities and in the executive talent required to manage them. For example, Smith and Watts (1992)

examine sixteen industries, of which three are regulated, and find that industries with lower investment opportunities (measured as the ratio of market value of equity plus book value of assets minus book value of equity to book value of assets) have lower CEO compensation and less frequent use of both option and bonus plans. Smith and Watts attribute these findings to a contracting hypothesis. Firms with less promising investment opportunities have managerial actions that are more readily observable and therefore do not need a strong pay-performance relationship to align managerial and shareholder interests. In this case, the larger are growth options relative to firm value, the higher the pay-performance sensitivity. In addition, they find that regulated firms have lower levels of CEO pay because higher levels of compensation in firms with higher growth options are necessary for managers to make decisions; the skills associated with the selection of investment projects commands a higher equilibrium wage than those associated with the supervision of existing assets in place. Regulated firms appear to have a lower level of pay and a lower pay-performance relationship than unregulated manufacturing firms (Joskow, Rose and Shepard 1993), and Palia (1996) finds that most of the differences in the pay-performance sensitivities between utilities and unregulated firms arise from differences in options and stock ownership.

(3) *Finding the appropriate human capital.* While many empirical studies have examined the differences in pay levels and the pay-performance sensitivities (i.e., the provision of incentives), such studies largely ignored one function of the managerial labour market: to select executives and assign or match their talents to different jobs (i.e., select the appropriate human capital). In addition to providing performance incentives, one of the functions of the executive labour market is to identify competent and talented managers (Rosen 1992). Does the quality of managerial talent and the executive labour market have an impact on company performance? Some researchers have even concluded that the allocation of talent has significant effects on the growth rate of a country (Murphy, Shleifer and Vishny 1991). Individuals with significant increasing returns to ability (or 'superstars') choose occupations where much of the rent on their talent can be retained. Murphy, Shleifer and Vishny find evidence that countries with a higher proportion of engineering college majors grow faster, and countries with a higher proportion of law concentration majors grow more slowly.

In a study that examines the privatization of Russian shops, Barberis, Boycko, Shleifer and Tsukanova (1996) conclude that the presence of new owners and managers increases the likelihood of restructuring, whereas giving equity incentives to old managers does not promote restructuring. This suggests that recent research in the analysis of executive pay may have stressed incentives to the point of ignoring the potential for 'slotting' people into jobs. As a related point, there may be quality sorting in the managerial labour market in the presence of regulation (Peltzman 1993; Hubbard and Palia 1995b; Palia 1996).

(4) *Boards of directors.* If the board of directors of a company is a perfect external monitor, shareholders would

not need to use managerial compensation to align managerial and shareholder interests. Generally, the quality of the board has been proxied in two dimensions: size of the board, and the proportion of outsiders on the board (for a detailed list of studies, see Palia 1996). Some have suggested that small boards are more effective, because large boards are easier for the CEO to control, and have found evidence consistent with such a relationship. Research on the composition of the board of directors, as measured by the proportion of outside directors on the board, is ambiguous in its effect on firm-value. Some studies have found a positive impact of the proportion of directors from outside the firm on: firm-value, CEO turnover, takeovers, management buyouts, and poison-pill adoptions. By contrast, other studies have found either no significant relationship or a significant negative relationship of the composition of the board on firm-value.

EXTERNAL CONTROL MECHANISMS. There are a number of external control mechanisms that assist shareholders in taking care of their interests. They are (1) ownership by large shareholders, (2) takeovers, and (3) debt.

(1) *Ownership by large shareholders.* Recently, the proportion of total shares owned by pension funds and mutual funds has increased dramatically. It is possible that large shareholders gain a lot from monitoring (given the larger amount of shares they own), and the presence of a large shareholder is associated with a higher firm value (Shleifer and Vishny 1986). Such benefits of large shareholder control have been found to be valuable in a number of studies. Holderness and Sheehan (1988) estimate a positive stock price reaction to announcement of trades where a shareholder controls more than 50%, but less than 100%, of the firm. They also find that new directors and officers were appointed after such trades, suggesting active involvement of the large shareholder. Some studies have found that shares that are identical with respect to dividend receipts but with differential voting rights trade at different prices, with the higher voting share receiving a premium. For example, large blocks of equity appear to trade at a substantial premium to the post-trade price of smaller block of shares (Barclay and Holderness 1992).

(2) *Takeovers.* If other methods to control managerial discretion prove to be inadequate, mergers and acquisition markets can be used to alter corporate control. Jensen and Ruback (1983) and Jarrell, Brickley and Netter (1988) summarize papers that examine the gains to bidders and target firms. They find that target firms earn around 15% to 30% abnormal returns over the market, whereas the abnormal returns to the bidding firms have generally been found to be non-positive. These results suggest that takeovers increase the value of the combined firm.

Several theoretical studies have suggested that takeovers help in disciplining managers. Target firms are often poorly performing firms whose managers are removed after the takeover. Hubbard and Palia (1995b) examine a sample of banks and find an increasing CEO pay-performance sensitivity and a competitive corporate control market to be

positively correlated. Jensen (1986) suggests that takeovers help some firms to distribute their excess free cash flow to their shareholders which otherwise would have been kept as a managerial buffer or used in negative present value projects.

Other researchers have suggested that recent takeovers and divestitures in the 1980s have reversed the managerial non-shareholder-wealth-maximizing behaviour that was implemented in the 1960s. Their studies have examined whether the benefits or costs of firm-level diversification vary according to whether acquisitions are in related or diversifying lines of business. Lang and Stulz (1994) examine Tobin's Q in the late 1970s and through the 1980s, and find that diversified firms have lower-than-average Q values, all else being equal, while single-industry firms have a high Q . This diversification discount is robust to controlling for size, industry, and access to capital markets. Further, they find that the value of the diversified firm is less than the value of its divisions standing alone. Some studies have found that diversified firms were also more active buyers and sellers in the market for corporate control in the 1980s. They also find that firms generally became more focused in the 1980s and that diversified firms were no more able to exploit economies of scope than focused firms. When examining divestitures, for a sample of acquisitions, no significant differences were found in the returns earned *ex ante* among acquirer-related acquisitions and diversifying acquisitions. This result suggests surprisingly weak support for arguments that diversifying acquisitions decreased value *ex ante*. In addition, acquirers were found more likely to divest unrelated than related acquisitions.

Recently, research has examined why diversifying acquisitions actually took place in the 1960s. Some have examined the stock market reactions to acquisition announcements and found evidence that the abnormal returns for diversifying acquisitions can be attributed to 'synergies' between the acquiring and target firms. Hubbard and Palia (1996) examine the entire conglomerate merger wave in the 1960s. They analyse whether there are any significant differences between conglomerate firms and focused firms, and look for differences in the abnormal returns earned by these two categories of firms in making diversifying or related acquisitions. They find that the conglomerate firm that makes a related acquisition actually earns the highest returns. In contrast to the findings of research examining the announcement effect of takeovers, some studies have found that conglomerate firms traded at a discount to single-segment firms during the 1960s (Servaes 1996).

(3) *Debt*. The role of debt in disciplining managers in the presence of agency costs has been suggested by a number of authors (see Shleifer and Vishny 1996 for a review). For example, debt can force the manager to precommit to paying out free cash flow and may even help the manager to distribute free cash flow. Some authors have suggested that, under some circumstances, the debt overhang is an effective deterrent to new investment. Others have suggested that debt is a contract that gives the creditor the right to collateral in case of default. Fear of such

liquidation enables the creditors to receive their promised payment. Debt can also be valuable in the context of default, upon which creditors can restrict the firm from raising future funds in the capital markets. Managerial shirking can be avoided because of the negotiating ability of debt holders after default. In addition, stringent covenants are a credible threat that helps creditors ensure managerial obedience. To that extent, studies have found that debt restricts bad investments, especially for firms with poor prospects. While all these arguments suggest the benefits of debt, some recent papers have started to examine costs of high leverage in the presence of aggregate risk (Gertler and Hubbard 1993) and whether concentrated equity with voting rights can achieve Pareto improvement over a debt contract (Myers 1996). To summarize, research has generally shown that for a group of (generally poorly-performing) firms, debt is beneficial in its role of restricting managerial discretion and shirking.

NEW AVENUES OF RESEARCH. While most studies have focused attention on the benefits and costs of individual mechanisms for corporate control, one can think more broadly about competition among alternative means of supplying efficient corporate control (as in Stigler 1958). Toward that end, many researchers are examining the evolution of corporate control markets within countries and across countries (see the review in Shleifer and Vishny 1996). These international differences in the corporate control market and their evolution promise to be an important area for future empirical research.

R. GLENN HUBBARD AND DARIUS PALIA

See also AGENCY COSTS AND CORPORATE GOVERNANCE; AUCTIONS AND TAKEOVERS; BOARDS OF DIRECTORS; COMPETITION FOR STATE CORPORATE LAW; CORPORATE GOVERNANCE; CORPORATE LAW; MANNE, HENRY G.; INDEPENDENT DIRECTORS; LAW-AND-ECONOMICS IN ACTION; LEVERAGED BUYOUTS; OWNERSHIP AND CONTROL IN EUROPE; TENDER OFFERS.

Subject classification: 5g(iii).

BIBLIOGRAPHY

- Barberis, N., Boycko, M., Shleifer, A. and Tsukanova, N. 1996. How does privatization work? Evidence from the Russian shops. *Journal of Political Economy* 104: 764-90.
- Barclay, M. and Holderness, C. 1992. The law and large-block trades. *Journal of Law and Economics* 35: 265-94.
- Berle, A. and Means, G. 1933. *The Modern Corporation and Private Property*. New York: Macmillan.
- Demsetz, H. and Lehn, K. 1985. The structure of corporate ownership: causes and consequences. *Journal of Political Economy* 93: 1155-77.
- Gertler, M. and Hubbard, R.G. 1993. Corporate financial policy, taxation, and macroeconomic risk. *RAND Journal of Economics* 24: 286-303.
- Himmelberg, C., Hubbard, R.G. and Palia, D. 1996. Understanding determinants of managerial ownership and the link between ownership and performance. Working paper, Columbia University.
- Holderness, C. and Sheehan, D. 1988. The role of majority shareholders in publicly held corporations: an exploratory analysis. *Journal of Financial Economics* 20: 317-46.