

**Corporate Boards of Directors:
A Dual-Purpose (Efficiency) Perspective**

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There is broad agreement that complex phenomena, of which the board of directors in the modern corporation is one, are usefully examined through several focused lenses. The lens of contract/governance, which is an efficiency perspective, is the one that I employ.

By way of signaling the provisional and exploratory nature of the argument, I describe this paper as a “perspective.” Confronted with the disparities between the theory of the board that I advance at the outset and the board in practice, I ask two questions: What explains these disparities? What are the ramifications of bringing the board in practice into conformity with the board in theory? Answers to these questions lead into an expanded interpretation of the board of directors. In addition to the traditional purpose (monitoring), a hitherto neglected purpose (delegation) is now introduced. If and as this dual-purpose perspective is judged to be instructive (by itself and as it bears on other concepts of the board of monitoring, stakeholder, and activist kinds), the challenge is to work it up in a modest, slow, molecular, definitive way.

Section 1 discusses efficiency – both in general and with reference to the lens of contract/governance. This lens is then applied to corporate finance transactions in Section 2 and a preliminary interpretation of the board of directors is advanced. The board in practice is discussed in Section 3, after which the disparities between the board in theory and the board in practice and possible remedies thereto are examined in Section 4. An augmented, dual-purpose interpretation of the board is advanced in

Section 5, where the dual-board has the aforementioned purposes of monitoring and delegation. Concluding remarks follow.

1. An Efficiency Perspective

Why are there so many institutions? An obvious response is that different institutions arise in support of different societal purposes.

To be sure, this does not imply that there is no overlap between religious, educational, commercial, military, etc. institutions. The main purposes of these institutions nevertheless differ. I take efficiency to be the main purpose of economic organization. I furthermore contend that until a main case has been named and the ramifications worked out, the introduction of other purposes invites confusion. If and as needed, ancillary purposes are better introduced after the main case has been named and explicated.

Efficiency is often believed to be a narrow, technical, and (by some) mean-spirited concept. As used herein, efficiency is a broad and contractual concept that operates in the service of mutual gain. Frank Knight's remarks are pertinent (1941, p. 252, emphasis added):

Men in general, and within limits, wish to behave economically, to make their activities and their organization "efficient" rather than wasteful. This fact does deserve the utmost emphasis; and an adequate definition of the science of economics ... might well make it explicit that the main relevance of the discussion is found in its relation to social policy, assumed to be directed toward the end indicated, of increasing economic efficiency, of reducing waste.

As against the resource allocation paradigm (prices and output; supply and demand) which served as the ruling efficiency paradigm within economics during the 20th

century (Reeder, 1999), I appeal to a reformulation of the problem of economic organization that was advanced by John R. Commons: “the ultimate unit of activity ... must contain in itself the three principles on conflict, mutuality and order. This unit is a transaction” (Commons, 1932, p. 4). Not only does the lens of contract/governance take the transaction to be the basic unit of analysis, but governance is viewed as the means by which to infuse order, thereby to mitigate conflict and realize mutual gains. Efficiency purposes plainly reside therein. This is a recurring theme.

Pertinent in this connection is that adaptation (rather than efficient choice of factor proportions) is taken to be the main problem of economic organization, of which two kinds are distinguished: autonomous adaptations in the market that are elicited by changes in relative prices (Hayek, 1945) and coordinated adaptations of a “conscious, deliberate, purposeful kind” accomplished with the support of hierarchy (Barnard, 1938).² Conditional on the attributes of transactions, adaptations of both kinds are important – which is to say that markets and hierarchies are examined in a combined way (which differs from the old ideological divide between markets or hierarchies). To this, moreover, is added the hybrid mode, which is a compromise, in that hybrids display adaptive capacities of both kinds in intermediate degree.

The upshot is that each generic mode of governance (market, hybrid, hierarchy, public bureau, etc.) possesses distinctive strengths and weaknesses. The object is to deploy alternative modes of governance efficiently in relation to the needs of differing transactions. This is implemented through the discriminating alignment hypothesis, to wit: transactions, which differ in their attributes, are aligned with governance structures, which differ in their cost and competence, so as to effect a transaction cost economizing result.

As discussed below, simple transactions are serviced by simple contracts and complex transactions call forth more complex responses. Thus whereas the ideal

transaction in law and economics, where “faceless buyers and sellers meet ... for an instant to exchange standardized goods at equilibrium prices” (Ben-Porath, 1980, p. 4), is well serviced by simple market exchange, more complex transactions pose continuity needs for which mutual gains are realized by developing added governance supports, thereby to infuse order and relieve conflict. The provision of cost-effective credible commitments is a central theme of the governance approach to the study of economic organization. The simple contractual schema, as shown in Figure 1, is illustrative.

Thus assume that a firm has the need for a series of inputs (components, workers, machines, etc.) to support its operations. Suppose, moreover, that each input can be described as being of a general or special purpose kind, where general purpose implies easy redeployability to alternative uses or users and special purpose implies that the input can be redeployed to alternative uses and users only at a loss of productive value.

Let k be a measure of asset specificity (nonredeployability), where $k=0$ denotes generic inputs and $k>0$ denotes nonredeployable inputs. Plainly, the $k=0$ condition corresponds to the ideal transaction in law and economics where neither buyer nor seller has a lasting attachment for the other. Such transactions are located at Node A in the simple contractual schema.

Circumstances change dramatically as asset specificity becomes progressively more important. If a supplier is asked to provide a component with specialized features for which special purpose assets are required, if workers are asked to make human capital investments in skills that are highly firm-specific, if finance is needed for a project that cannot be redeployed except at a significant loss of value, then component suppliers, workers, and suppliers of finance are potentially exposed to contractual hazards. Inasmuch as individual suppliers or their agents are assumed to be broadly perceptive of the nature of the investments that they are being asked to make, such

hazards will be factored into the price. But there is more. Such hazards can ordinarily be reduced by crafting governance mechanisms that infuse confidence (e.g., by providing relevant information, auditing, and specialized dispute settlement mechanisms to which a supplier ascribes credibility) and deter termination (e.g., by providing penalties). As, however, the provision of interfirm credible commitments becomes especially costly, buyers will sometimes take such transactions out of the market and organize them internally (vertical integration).

Let s denote contractual safeguards, where $s=0$ is the absence of relief and $s>0$ implies the provision of contractual safeguards. Node B poses an unrelieved hazard for outsourcing $k>0$ transactions for which no safeguards have been provided ($s=0$). Node C, by contrast, provides the aforementioned credible commitments ($s>0$) for outsourced transactions. And Node D entails unified ownership, where the firm produces the good or service itself and governs through hierarchy. It is elementary that the price at Node C is less than at Node B.

2. The Board as Monitor: An Initial Interpretation

2.1 A comparative contractual analysis

Application of the simple contractual schema to corporate finance is facilitated by viewing debt and equity not merely as modes of finance but also as modes of governance. Expressed in transaction cost economics terms, the basic regularity is this: debt is well-suited to finance generic assets that can be redeployed to alternative uses and users with little loss of productive value whereas equity is reserved for financing specific assets for which continuity (in the same use and by the same user) is valued.³

Arrayed by increasing degree of asset specificity, suppose that a firm is seeking to finance the following: general-purpose, mobile equipment; a general-purpose office building located in a population center; a general-purpose plant located in a

manufacturing center; distribution facilities located somewhat more remotely; special-purpose equipment; market infrastructure and product development expenses; and the like. Also assume that the governance structure for debt requires the debtor to observe the following stylized rules: (1) stipulated interest payments will be made at regular intervals; (2) the business will continuously meet certain liquidity tests; (3) sinking funds will be set up and principal repaid at the loan-expiration date; and (4), in the event of default, the debt-holders will exercise pre-emptive claims against the assets in question. If everything goes well, interest and principal will be paid on schedule. But debt is unforgiving if things go poorly. Failure to make scheduled payments thus results in liquidation. The various debt-holders will then realize differential recovery in the degree to which the assets in question are redeployable.

Debt thus works well for projects for which $k=0$, to which rules-based governance applies. This corresponds to Node A in the simple contractual schema. As, however, the value of k increases, the value of liquidation claims declines and the terms of debt finance will be adjusted adversely (as at Node B). Confronted with the prospect that specialized investments will be financed on adverse terms, the firm might respond by sacrificing some of the specialized investment features in favor of greater redeployability. But this entails tradeoffs: production costs may increase or quality may decrease as a result. Might it be possible to avoid these by inventing a new governance structure of a Node C kind to which mutual gains (added continuity and adaptability in exchange for added safeguards) can be projected? In the degree to which this is feasible, the value-enhancing benefits of investments in specific assets could thereby be preserved.

Suppose that a financial instrument called equity is invented and assume that equity has the following governance properties: (1) it bears a residual-claimant status to the firm in both earnings and asset-liquidation respects; (2) it contracts for the duration of the life of the firm; and (3) a board of directors is created and awarded to equity that (a)

is elected by the pro-rata votes of those who hold tradable shares, (b) has the power to replace the management, (c) decides on management compensation, (d) has access to internal performance measures on a timely basis, (e) can authorize audits in depth for special follow-up purposes, (f) is apprised of important investment and operating proposals before they are implemented, and (g) in other respects bears what Eugene Fama and Michael Jensen refer to as a decision-review and monitoring relation to the firm's management (1983).

The board of directors thus serves as a credible commitment, the effect of which is to reduce the cost of capital for projects that involve limited redeployability. Not only do the added controls to which equity has access provide added assurance, but equity is more forgiving than debt. Efforts are therefore made to work things out and realize adaptive benefits that would otherwise be sacrificed when disturbances push the parties into a maladapted state of affairs.

Consider finally Node D in the simple contractual schema as it applies to finance. Node D can be interpreted as internal finance (from retained earnings). Because such finance is not subject to normal market tests, such finance should be reserved for projects that are especially difficult for outsiders to evaluate – of which research and development is an example.⁴

2.2 The board as monitor: double-feedback

W. Ross Ashby's model of double-feedback (1960) and Herbert Simon's examination of the architecture of complexity (1962, 1973) are broadly consonant with the proposition that adaptation is the central problem of economic organization. Ashby established that all adaptive systems that have a capacity to respond to a bimodal distribution of disturbances – some being disturbances in degree; others being disturbances in kind – will be characterized by double feedback. As shown in Figure 2, disturbances of both kinds originate in the environment (E). The feedback divide is this:

operating decisions are made and implemented in the primary feedback loop by the reacting part (R) with the benefit of extant decision rules whereas strategic decisions of a more consequential and longer run kind are processed through the secondary feedback loop, where the essential variables (V) and the step functions (S) are located.

In effect, the reacting part (R) works out of the presumption that successive state realizations are variations in degree to which the application of extant routines will yield an efficacious response. Indeed, the routines employed by the operating part remain unchanged so long as performance falls within the control limits on the essential variables (V) in the secondary feedback loop. If and as, however, performance falls outside of these control limits, the secondary feedback loop interprets this as a disturbance in kind for which new routines (changes in parameter values or new rules) are needed to restore performance to acceptable levels. These changes are introduced into the reacting part as step functions (S). So described, the primary feedback loop is implementing extant decision rules in real time in a mechanical way whereas the secondary feedback loop is activated by less frequent changes in kind (and possibly with reference to longer run (strategic) considerations). Evolutionary systems that are subject to such bimodal disturbances will, under natural selection, necessarily develop two readily distinguishable feedbacks (Ashby, 1960, p. 131).

Simon's discussion of the organizational division of decision-making labor in the firm is in the same spirit. From "the information processing point of view, division of labor means factoring the total system of decisions that need to be made into relatively independent subsystems, each one of which can be designed with only minimal concern for its interaction with the others" (Simon, 1973, p. 270). That is accomplished by grouping the operating parts into separable entities within which interactions are strong and between which they are weak and by making temporal distinctions of a strategic versus operating kind. Problems are thus factored in such a way that the higher-

frequency (or short-run) dynamics are associated with the operating parts while the lower-frequency (or long-run) dynamics are associated with the strategic system (Simon, 1962, p. 477).

So where does the board of directors fit within this double-feedback scheme of organization? One interpretation of the secondary feedback loop is to view the board as being located at the essential variables (V), where it performs decision-review and monitoring functions. If and as the essential variables are pushed outside of the control limits, the board signals the need for strategic adaptations to be made by the management, which is located at the step functions (S).

Thus whereas the reacting part (R) uses extant routines to respond to small and familiar disturbances in the environment (E) on a continuing basis, the secondary feedback loop deals with exceptions. Unless individual or successive disturbances push the essential variables (V) outside of their control limits, the board remains in a passive mode of nodding approval and the management advises the operating parts to continue business as usual. If and as disturbances push the essential variables outside their control limits, the board alerts the management to take corrective action. Parameter changes or new routines are introduced into the reacting part with the purpose of restoring the essential variables to acceptable levels. The board then remains in a vigilant mode and monitors the efficacy of the management initiated changes. If and as the essential variables are brought back within the control limits, the board returns to its standby mode of nodding approval.

Albeit provisional, this interpretation appears to implement the conception of the board of directors as performance monitor.

3. Boards in Practice

Examining corporate finance through the lens of contract yields the result that the main purpose served by the board of directors is to safeguard equity investments, thereby to reduce the cost of capital, which function is discharged by the board serving as monitor. This benign interpretation is an instructive place to begin. But how does this square with boards in practice? What are the disparities between this lens of contract interpretation and actual boards? Not only do we need to know how things work in practice,⁵ but we need to understand the tradeoffs and obstacles, natural and contrived, if feasible and effective reforms are to be devised.⁶

3.1 Myles Mace (1971)

Mace's book, Directors: Myth and Reality, has the purpose of challenging the myths and telling the reality: "As a participant on, and observer of, boards of directors for over 25 years, I have developed a healthy skepticism about the prevailing [mythical] concept of the board of directors. Specifically, it seemed important to ask what directors actually do in fulfillment of their responsibilities" (1971, p. 8; emphasis added).

His "final summary" of directors in large and medium sized firms where the CEO and board members own only a few shares of stock is this (Mace, 1971, pp. 205-206):

1. [CEOs] with de facto powers of control select the members of the boards.
2. [CEOs] determine what boards do and do not do.
3. Directors selected are usually heads of equally prestigious organizations with primary responsibilities of their own.
4. Heads of businesses and financial, legal, and educational organizations are extremely busy [people] with limited motivation and time to serve as directors of other organizations.
5. Most boards of directors serve as advisors and counselors to the [CEOs].
6. Most boards of directors serve as some sort of discipline for the organization – as a corporate conscience.

7. Most boards of directors are available to and do make decisions in the event of a crisis.
8. A few boards of directors establish company objectives, strategies, and broad policies. Most do not.
9. A few boards of directors ask discerning questions. Most do not.
10. A few boards evaluate and measure the performance of the president and select and de-select the president. Most do not.

Pertaining to item 3 on this list, Mace quotes from one executive as follows (1971, p. 90):

The board is part of the image of the company. The caliber and stature of the outside board members, both just as names and as people circulating in the business community, contributes to the image of the company.

When I look at a company, I look at who is on the board The type of people on a board does, in a series of informal and intangible ways, have a good deal to do with what the character of a company is. Is it a respectable and conservative company, or is it highly speculative? The investing public, you know, really care who is on the board.

Also, Mace observes that one of the functions played by the board with respect to discipline and corporate conscience (item 6) is that the CEO and his subordinates “know that periodically they must appear ... before a board of directors consisting of respected, able people of stature [who], no matter how friendly, cause the company organization to do a better job of thinking through their problems and of being prepared with solutions, explanations, or rationales” (1971, p. 180).

Such effects notwithstanding, Mace concludes that the role of the board as a corporate conscience is mixed (1971, p. 181):

Usually the symbols of corporate conscience are more apparent than real, and [CEOs] with complete powers of control make the compensation policies and decisions. The compensation committee, and the board which approves the recommendations of the compensation committee, are not in most cases decision-making bodies. These decisions are made by the [CEO] and in most situations the committee and board approval is perfunctory. The [CEO] has de factor powers of control, and in most cases he is the decision maker. The board does, I believe, tend to temper the inclinations of [CEOs] with de facto control, and it does contribute to the avoidance of excesses. Thus it serves the important role of a corporate conscience.

With reference to item 10, Mace identifies “two crisis situations where the role of the board of directors is more than advisory.” One is if the CEO were to die or become incapacitated; the second is if performance is “so unsatisfactory that a change must be made” (1971, p. 182) – which recalls Oswald Knauth’s view that “the degree of success that management must produce to remain in office is surprisingly small. Indeed, management must fail obviously and even ignominiously before the dispersed forces of criticism become mobilized for action” (1948, p. 45).

3.2 Michael Jensen (1993)

Jensen opens his section on “The Failure of Corporate Internal Control Systems” with the observation that “By nature, organizations abhor control systems, and ineffective governance is a major part of the problem with internal control mechanisms. They seldom respond in the absence of a crisis” (1993, p. 852). He thereafter makes a series of observations about boards in practice and recommends how boards should be reformed. I take up the latter in Section 4.

Jensen's main observations about boards in practice are these: (1) board culture typically emphasizes "politeness and courtesy at the expense of truth and frankness" (p. 863); (2) the board has a serious information deficit and lacks financial expertise (p. 864); (3) legal liability encourages risk averse behavior by boards (p. 864); (4) neither managers nor non-manager members of the board own substantial fractions of their firm's equity (p. 864); and (5) the board in a well-functioning organization will normally be inactive and exhibit little conflict. Jensen concludes that "bad systems or rules, not bad people, underlie the general failings of boards of directors" (p. 863) and that the board "becomes important primarily when the rest of the internal control system is failing" (p. 866).

3.3 Bengt Holmstrom and Steven Kaplan (2003)

Recent corporate governance scandals notwithstanding, Holmstrom and Kaplan contend that corporate governance underwent significant improvements during the 1980s and 1990s. Thus although they are dismayed that so many boards have approved anti-takeover measures, such as poison pills and staggered boards (2003, p. 15), and that some CEO compensation packages are outlandishly generous (p. 14), they have a generally favorable view of corporate governance changes that have taken place since the 1980s. Specifically, whereas it was common for corporate managements to "think of themselves as representing not the shareholders, but rather ... [as] 'balancing' the claims of all important corporate 'stakeholders'" before 1980 when "only 20% of the compensation of U.S. CEOs was tied to stock market performance" (p. 10), those conditions have changed. Hostile takeovers and restructuring provided a wake-up call for complacent and inefficient firms in the 1980s, which restructuring has continued during the 1990s at the initiative of incumbent managements (p. 12). Contributing factors to the more recent restructurings have been the significant degree to which the equity based compensation of CEOs has increased (to almost 50% of the total

compensation of CEO by 1994) and the increase in share ownership of large institutional investors from under 30% in 1980 to over 50% in 1996 (pp. 12, 14). Indicative of these changes, the Business Roundtable in 1997 changed its position on business objectives to read “the paramount duty of management and the board is to the shareholder and not to ... other stakeholders” (p. 13).⁷ A downside of the increased executive stock and option ownership is that “the incentive to manage and manipulate accounting numbers” has also increased (p. 13), to which the practice of post-dating options has recently been uncovered.

Overall, Holmstrom and Kaplan are of the view that corporate governance in the U.S. not only compares favorably with other countries but that it has been getting better. They counsel that it should not be judged on the basis of worst excesses – as at Enron, WorldCom, Tyco, Adelphia, Global Crossing, and others (p. 8).

3.4 A combined assessment

I am persuaded by the Holmstrom-Kaplan views that tails (corporate scandals) should not wag dogs. Judged comparatively, corporate governance in most large U.S. corporations is serviceable most of the time. That said, there is no denying that the corporate board in practice does not really qualify to be described as the keeper of the essential variables (V) in the double-feedback setup in Figure 2. Instead, the board in practice is approximated by the composite Mace-Jensen description of the board, in that (1) the CEO is in de facto control of the operation and composition of the board, (2) outside members of the board are at enormous information and expertise disadvantages to the management, (3) most boards most of the time are responding with nodding approval, (4) boards can and often do move into a more active mode when the corporation experiences adversity, and (5) albeit unmentioned, the very existence of the board affords an opportunity for shareholders to “vote the rascals out.”

The upshot is that the board in practice bears a more peripheral and dependent relation to the firm and its management. Rather than being directly involved in the secondary feedback loop, the board is relegated to a dependent and advisory relation to the firm, as shown by the triangle (B) in Figure 3. Should such a peripheral status be deemed unacceptable? If not, what to do?

4. Activating the Board

Assuming that the board as vigilant monitor is the appropriate way by which to effect a credible commitment (node C in Figure 1) relation between the firm and the supplies of equity finance, the obvious corrective measure would be to provide the board with the requisite capacity to qualify it as the keeper of the essential variables (V). This would move the board out of its peripheral status (triangle B in Figure 3) back onto the secondary feed back loop. Alternatively, the board could become actively involved in the strategic management of the firm by participating in step function adaptations to consequential disturbances (at S). (A third possibility, which I will ignore, is to activate the board at both S and V.) Consider each.

4.1 The board as vigilant monitor

As described, the board in practice is at a huge disadvantage to the top management of the corporation in information, expertise, agenda control, and board membership nomination respects. Thus whereas the management is involved with the corporation on a full-time basis and has the benefit of accounting, legal, financial, engineering, planning, and managerial staff expertise to track and interpret the past performance of the firm and develop projections for the future, the membership of the board is part-time and lacks firm-specific knowledge in all of these respects. By default, as it were, the responsibility for measuring and reporting upon the essential variables falls to the management. What the board and investment community receive is a

delayed digest of the essential variables, possibly as “adjusted” to reflect managerial purposes.

Conceivably, however, this condition could be rectified. Surely the suppliers of equity finance can direct the firm to provide the funds for the board to hire qualified staff for the board, thereby to close the gap in information and expertise respects. And surely the board can insist that the chair of the board be one of their own rather than the CEO. Once, moreover, the board has a backup staff to supply information and expertise, it can participate more knowledgeably in strategic decision making. Indeed, powers could also be devolved upon the shareholders to propose and vote binding resolutions.⁸ Inasmuch as such reforms would appear to entail modest costs and would go a long ways toward redressing the separation of ownership from control that has beset corporate governance over the past century, what are the obstacles?

One obstacle is that the management and the board may be content with things as they are. Rather than disturb the “easy life,” both prefer to continue with business as usual. Here as elsewhere, however, the unrealized gains posed by significant inefficiencies invite corrective action by others – in which event such complacency cannot stand. If successive managements refuse to budge, competition in the product market (possibly from new entrants) and competition in the capital market (possibly through takeover) will be activated.⁹

Perhaps, however, the reasons for not involving the board directly in the reading and interpretation of the essential the variables reside elsewhere. One consideration is that, competent though the staff hired by and reporting to the board may be, there is a difference between observing and participating¹⁰ – where the latter is more nuanced, whence differences will arise that will sometimes lead to conflict over the interpretation to be placed upon performance reports. Also and related, for the board to take and interpret readings at the essential variables would relieve the management of

responsibility for operating the firm. Performance failures for which the management could previously be held responsible could now be explained (in part) by communication failures between the board and the management. Not only are incentives impaired but what had previously been a mainly cooperative relation between the board and the management becomes more adversarial in the process.

In consideration of these and other complications, might it be more instructive to involve the board not at V (as a diligent monitor) but at S (as an active participant in the management of the firm)?

4.2 Direct involvement

Consider therefore having the board participate actively in the management at the step functions (S).

Interestingly, Jensen takes the position that leveraged buyouts and venture capital funds presage the future for effectively redesigning the board in the modern corporation (1993, p. 869):

LBO associations and venture capital funds provide a blueprint for managers and boards who wish to revamp their top-level control systems to make them more efficient. LBOs and venture capital funds are, of course, the preeminent examples of active investors in recent U.S. history, and they serve as excellent models that can be emulated in part or in total by virtually any corporation. The two have similar governance structures, and have been successful in resolving the governance problems of both slow growth or declining firms (LBO associations) and high growth entrepreneurial firms (venture capital funds).

LBOs and startups are both variants upon Rudolf Spreckels' remark that "When I see something badly done, or not done at all, I see an opportunity to make a fortune."

The LBO sees something badly done, mobilizes financing, pays the requisite premium to

gain control of the firm, replaces the incumbent management, and reshapes the firm and its financing. Thus debt is substituted for equity, thereby to restore a more efficient mix of debt and equity in relation to the firm's assets,¹¹ and unrelated or underperforming parts are sold or spun off. The big reward comes when the firm is taken public again.¹² In the interim, the new management and the banks, insurance companies, and investment bankers that package the deal are actively involved in the management and reshaping of the corporation. Once the firm goes public, the high-powered incentives and the urgency of real-time responsiveness give way to a steady state modern corporation where managers (rather than financial entrepreneurs) are at the helm, lower powered incentives are used, and the ownership is more diffuse. (If, in the fullness of time, many of the benefits of LBOs are undone by backsliding, the LBO process could be repeated.)

Start-up firms, especially of a high technology kind, may also be aimed at improvements on something badly done but more often arise out of perceived opportunities to provide something altogether new (Shane, 2001). These latter are high risk undertakings that combine venture capitalists with entrepreneurial, technical, and legal talent in a race to be first. High powered incentives apply and real-time involvement by all of the critical actors (as managers or directors) is practiced.¹³ If and as the start-up succeeds, the big rewards are realized when the firm goes public. Thereafter, the firm progressively takes on the characteristics of a business-as-usual enterprise, as more of the action is devolved upon the primary feedback loop and routines set in.¹⁴

LBOs and startups thus differ from mature corporations in consequential ways. The former are evanescent forms of organization for which real-time responsiveness is of the essence and concentrated ownership and high-powered incentives are well suited. If and as the project succeeds, the firm takes on the properties of a modern corporation.

Active involvement by key members of the board that are vital during the transition period are not only unneeded for an ongoing corporation but would have the effect of impairing the integrity of delegation. Indeed, as compared with the concept of the board as vigilant monitor (at V), the notion that the board can and should actively participate in the management of the firm (at S) is even more problematic.

5. The Dual-Board

If it is unrealistic and ill-advised for the board to take primary responsibility for reading and interpreting the essential variables and to involve itself actively in the management of the corporation (egregious breakdowns excepted), then, subject to considerations of downside drift, the concept of the board as peripheral (as shown in Figure 3) may actually have merit.

I return to the monitoring relation of the board in my discussion of downside drift. I begin, however, with a discussion of delegation, which I take to be a truly vital but widely neglected and/or confused function of the board. It is my position that the integrity of delegation is important and should be expressly included when evaluating the merits of corporate board reform proposals.

5.1 The integrity of delegation

The benefits of delegation include: (1) delegation is the means by which to assign problems to those with the better training, ability, and deeper knowledge of the particulars (to include tacit knowledge acquired through learning-by-doing); (2) delegation enhances incentives by linking compensation and promotions to performance (although excesses of incentive intensity are also a concern); and (3) respect for delegation serves as a check upon the propensity of controllers to engage in excesses of control. Also, delegation is (4) usefully practiced within the firm as well as between the owners of equity capital and the management of the firm. Consider each.

The first of these views the firm as a means by which to assemble specialized and complementary expertise by hiring managers and workers with the requisite ability, training, and experience and to deepen that experience over time in an interactive way. Managers and workers thereby acquire tacit knowledge of the job and of others with whom they work, both within the firm and with those outside suppliers for which a continuing association yields mutual gains.

Delegation is also a means by which to hold individuals (or interactive groups or divisions) accountable. This in turn means that their compensation, the resources that are allocated to their use, and their promotions can be made contingent on performance. To be sure, performance is a vector, is often interactive with the efforts of a “team,” and results become fully known only with delay. Accordingly, these incentives are muted. Over time, however, delegation is nevertheless a means by which to harness added incentive intensity.

Delegation also serves as a means by which to check overzealous control. The bureaucratic theories described by James March and Herbert Simon as “machine models of organization” are pertinent (1958, pp. 36-47).¹⁶ A chronic problem with well-intentioned controllers is that they often have a truncated understanding of the system for which added controls are recommended.¹⁷ In addition to the intended effects, added controls can also have unintended consequences, where the latter are often dysfunctional. Greater respect for the integrity of delegation will serve as a deterrent to overzealous regulation. As Martin Hellwig puts it, “Excessive interference would endanger the division of labor, which is the reason for ... [appointing managers] in the first place” (2000, p. 121).

Finally, respect for delegation is a matter of importance not only between equity investors and the firm but also for the design of hierarchy within the firm. Alfred Chandler’s (1962) description and interpretation of the benefits of moving from a unified

(U-form) structure, which relied on functional delegation (manufacturing, marketing, finance) with weak accountability,¹⁸ to a multi-divisional (M-form) structure, where separable operating divisions had greater autonomy and could be held more accountable for performance, is illustrative.¹⁹

To these four benefits of delegation I would add that management has another degree of freedom when confronted with zealous regulation. Because of the objective information and knowledge advantages that the full-time management enjoys in relation to the part-time board (even one that has its own staff for gathering and interpreting the data), the management can respond to board efforts to exercise control in a perfunctory way – by complying with the letter but withholding cooperation that is vital to effective implementation.

In addition, therefore, to the logic of the board as monitor, thereby to safeguard the interests of equity investors, boards should also be designed mindful of the benefits of delegation. Note, however, that whereas the logic of monitoring is reasonably obvious (and enjoys widespread support), the logic of the board as a mechanism to support the integrity of delegation (by limiting the degree of intrusiveness from the board and other constituencies) has the appearance of being protectionist apologetics. If the management is first and foremost the problem, little wonder that most proposals to reform boards recommend that stronger monitoring mechanisms be devised and make little or no provision for possible adverse effects on delegation. My position is that failure to respect the integrity of delegation will result in lower performance and an increase in the cost of equity capital. Accordingly, board design should consciously reflect both monitoring and delegation purposes (the efficient mix of which presumably varies over time and across corporations),²⁰ thereby to realize greater profitability.²¹ A serious problem is nonetheless posed if deference to delegation leads to tepid monitoring and is subject to downside drift.

5.2 Downside drift

I will take it that a modulated board has limited monitoring capabilities, is predisposed to work with the management in a supportive way, yet can exercise real power (to include replacing the CEO for unacceptable performance and acceding to takeover if the terms are judged to be favorable for the ownership if not the management). That sounds very much like many actual boards. End of story?

Not really. The problem is that deferential boards which lack a firm commitment to monitoring are also susceptible to capture. By reason of the advantages of the full time management in relation to a part time board, healthy tensions in the relation between equity interests and the management will commonly be resolved in favor of the latter.

Wherein do the worst downside drift consequences reside? I focus on two. One is where a (possibly well-intentioned) board is misled by a management that deceitfully massages and manipulates the data. The second goes to composition of the board effects.

Smoothing performance or, worse, “hitting the numbers” (thereby to reap incentive compensation benefits) are examples of the first kind.²² (The back-dating of options is another more recent example of manipulation, although this is often done with the actual or tacit approval of the board.)

Examples of the second kind involve composition of the board effects. An obvious composition of the board concern is with the ratio of officers to independent board members, but the qualifications and predilections of independent board members are also pertinent. Those with and without business experience and expertise are usefully distinguished.

Other things being equal, independent board members who possess financial or business expertise are better able to relate and have more to offer by way of sound

judgment and informed critique than do those who are lacking in these respects. The objectivity of such independent board members can nevertheless be compromised if they are part of what Bang Nguyen-Dang refers to as “corporate elite’s small world ... [of] cross-directorships” (2005, p. 6), an illustration of which is executive compensation at Verizon, where “Verizon’s compensation committee ... consists of ... [four] chief executives or former chief executives,” three of whom sit on other boards with the Verizon CEO (Morgenson, 2006, p. A16). This is by no means an isolated example (Bebchuk and Fried, 2004, Chap. 2), moreover. Outside executives who possess the requisite expertise but, because of overlapping interests are “in this together,” lack objectivity and compromise the board.²³

A second class of problematic board members consists of those who, though lacking in expertise, possess “gravitas.” Such board members can be expected to be more compliant (1) as the ratio of board payments to their other income is higher, and (2) their susceptibility to indirect rewards – such as “contributions” to the board member’s place of employment (as with eleemosynary institutions), or to favored charities, or out of the prospect of reciprocity (e.g., procurement) with the board member’s place of employment (Bebchuk and Fried, 2004, pp. 27-28) – is higher.²⁴

To be sure, it is altogether understandable that CEOs will seek to appoint internal and outside directors who are perceived to be “compatible” (Barnard, 1938, p. 224). The possibility that insecure or grasping CEOs will cross the line from constructive support to use obeisance as a selection criterion is where the problem resides.

Downside drift, in either or both of these respects, is especially troublesome if boards that have once been compromised (have become the compliant instruments of the management) are unlikely to be restored to a principled status. In that event, added downside checks upon the modulated board warrant consideration. Without purporting

to know that net benefits can reliably be projected, the following list is tentatively proposed:

1. Efforts should be undertaken to better assure the integrity of accounting procedures and reports;
2. Egregious lapses of integrity (back-dating of options; large undisclosed executive benefits) should become presumptive causes for termination;²⁶
3. The composition of the board should be scrutinized, with special attention to the nomination of executives and professionals with close ties to the CEO and to independents who lack expertise and are susceptible to accepting, even seeking, membership in anticipation of favors;
4. As a matter of good public policy, state regulatory commissions should adopt default rules that remove poison pills, staggered boards, and other obstacles to takeover;²⁷
5. The board should be co-chaired, one of the co-chairs being the CEO and the other an independent director.²⁸

Whatever, the list is merely suggestive and is by no means exhaustive. The basic points are these: downside drift is a continuing concern lest the integrity of monitoring be compromised; yet added regulatory measures should also be mindful of the costs – to include possible sacrifice to the integrity of delegation. One foreseeable consequence of excessive sacrifices to the latter is that some public corporations will be taken private as result.

6. Conclusions

Implicitly if not explicitly, the corporate governance literature of the past 85 years has been preoccupied with the following query: Is there “any justification for assuming that those in control of the modern corporation would choose to operate it in the interests of the owners” (Berle and Means, 1932, p. 12)? That is an important question, but it focuses too narrowly. The larger concerns are these: What are the main purposes with which corporate governance should be concerned? How well does corporate governance in practice discharge these purposes? Wherein do the prospective hazards reside? And what are the public policy ramifications?

This paper advances the argument that the overarching purpose of corporate governance is efficiency and that this is accomplished through two key functions: monitoring and delegation, where monitoring serves to safeguard the interests of the shareholders (but also serves the interests of other constituencies) and delegation is vital to adaptive efficacy. Posing the corporate governance question in Berle and Means terms calls attention to the hazards of delegation (which are real)²⁹ to the neglect of the benefits. By reason of this one-sided treatment of delegation, recommendations to activate the board in monitoring and management respects are easily taken to excess.

As discussed herein, efforts to activate the board in monitoring respects should be mindful that monitoring is intrinsically limited and can result in over-intrusiveness. The intrinsic limitation is that, added budget and staff allocations to the board notwithstanding, a part-time/outside board can never expect to achieve information parity with a full-time/inside management. But there is a further concern: a board that presumes or is expected to read and interpret the essential variables can easily jeopardize adaptive efficacy by reason of the interpretive or other conflicts that arise with the management and concomitant delays.

Going beyond monitoring to engage the outside members of the board actively in the management of the corporation is even more problematic. If and as delegation is

first and foremost a means by which to harness expertise, incentives, and deep knowledge in the service of adaptive efficacy, then the integrity of delegation deserves respect.³⁰

These considerations warrant that precaution be exercised in evaluating proposed corporate governance reforms, yet do not imply that corporate governance in the U.S. is beyond criticism. My recommendations are these: (1) the corporation should mainly be regarded as an efficiency instrument; (2) the relation of the board to the management involves a delicate balance of cooperation (most of the time) with constructive critique; and (3) the ramifications of corporate governance reforms are usefully examined in a two-sided way through the lens of contract/governance – with emphasis on the microanalytics.

Footnotes

- * This paper has benefited from suggestions of Henry Hansmann, Bengt Holmstrom, Joseph Mahoney, Roberta Romano, and Robert Seamans. Earlier versions were presented at the University of Paris X (May 2006), at the conference on Corporate Social Responsibility and Corporate Governance in Trento (July 2006), at Concordia University in Montreal (September 2006), and at the 2006 Annual Conference of the International Society of New Institutional Economics.
1. As will become quickly apparent, I focus almost entirely upon corporate governance in the U.S. It is nevertheless noteworthy, as Bengt Holmstrom and Steven Kaplan observe, that “other countries have begun to move toward the U.S. model” (2003, p. 16).
 2. Interestingly, Dilip Mookerjee describes the advantages of centralization over decentralization (for my purposes, hierarchies over markets) in terms of resource allocation benefits: externalities, public goods, and increasing returns – to which distributional equity is added (Mookerjee, 2006, p. 368). Note that the adaptive advantages of hierarchy to go unmentioned – which is not uncommon, indeed is customary.
 3. The remainder of this subsection is based on Williamson (1988, pp. 579-580). For a related paper that examines debt financing for different assets, see Andrei Shleifer and Robert Vishny (1992). Note that a governance interpretation of corporate finance provides yet another challenge to the Modigliani-Miller theorem that the cost of capital in a firm is independent of the type of finance. Also note that, in contrast to note 2, above, maladaptation figures prominently in the Shleifer-Vishny examination of non-redeployable assets.

4. Note that this runs contrary to “pecking order” theory of finance, which observes that “firms prefer internal finance” (Myers, 1985, p. 348). I do not dispute the practice but interpret it in behavioral terms: this is the “easiest” mode of finance.

5. As John McMillan observes (2002, p. 228; emphasis added):

To answer any question about the economy, you need some good theory to organize your thoughts and some facts to ensure that they are on target. You have to look and see how things actually work or do not work. That might seem so trite as not to be worth saying, but assertions about economic matters that are based more on preconceptions than on the specifics of the situation are still regrettably common.

6. What I have referred to as the remediableness criterion eschews the usual comparison of an actual condition with a hypothetical ideal – it being elementary that all extant modes of organization are inferior to a hypothetical ideal. The remediableness criterion counsels that an extant mode of organization for which no superior feasible mode can be described and implemented with expected net gains is presumed to be efficient (Williamson, 1995; 1996). For earlier discussions that prefigure remediableness, see Coase (1964) and Demsetz (1967). Also see Dixit (1996) for later discussion.

The remediableness criterion can be thought of as a response to the public policy proverb that “the best is the enemy of the good.” Insistence upon feasibility eliminates hypothetical ideals from consideration. But what of the implementation? Feasible alternatives that cannot be implemented also fail the remediableness test.

Whereas insistence on feasibility avoids digressions on hypothetical ideals, insistence on implementation will eliminate some superior feasible alternatives.

- This last is disconcerting, especially if the repeated display of superior feasible alternatives could attract cumulative support that wears down the obstacles to implementation. In that event, persistent display of superior feasible alternatives (currently implementable or not) will serve a beneficial purpose.
7. Jean Tirole summarizes (but does not expressly subscribe to) the following objections that have been made of the “stakeholder-society governance structure” (2006, pp. 59-60);
 - (1) “Giving control rights to non-investors may discourage financing in the first place,” since the safeguard for equity is compromised;
 - (2) “Deadlocks may result from the sharing of control;”
 - (3) Managerial accountability is compromised: “the socially responsible manager faces a wide variety of missions, most of which are by nature unmeasurable,” with the result that “managers [are] less accountable; and
 - (4) “It is not obvious that social goals are best achieved by directors and officers eager to pander to their own ... customers and policy makers.”
 8. Lucian Bebchuk has recently recommended that shareholders should be given the power “to initiate and vote to adopt changes in the company’s basic corporate governance arrangements ... [to] include the power to adopt provisions that would allow shareholders, down the road, to initiate and vote on proposals regarding specific corporate decisions” (2005, p. 836; emphasis added). It is his view that increasing shareholder power to intervene in this way will “improve corporate governance and enhance shareholder value” (2005, p. 836).
 9. To be sure, both are lagged responses. If, however, the inefficiencies in question are substantial, such inefficiencies invite their own demise.
 10. Note with respect to the acquisition of deep knowledge that this often requires active participation, in which event it does not suffice for the

board to hire its own specialized staff to report back in its capacity of a “sophisticated observer.” Thus although learning by observing is instructive, learning by doing is deeper and different. Chester Bernard’s remarks about the executive arts are relevant: “In the common sense, every day, practice of the arts, there is much that is not susceptible of verbal statement – it is a matter of know-how. It may be called behavioral knowledge ... [and] is nowhere more indispensable than in the executive arts” (1938, p. 291). Also, as Michael Polanyi observes with respect to technology, “the attempt to analyze scientifically the established industrial arts has everywhere led to similar results. Indeed even in the modern industries the indefinable knowledge is still an essential part of technology” (1962, p. 52). Polanyi also describes “language [as] an art, carried on by tacit judgments and the practice of unspecifiable skills” to which ongoing experience between speaker and listener is often vital (1962, p. 206).

11. Thus, suppose that over the course of time that the efficient debt to equity ratio undergoes a transformation. Specifically (Williamson, 1988, p. 585):

Suppose ... that a firm is originally financed along lines that are consistent with the debt and equity financing principles set out [in Section 3] above.

Suppose further that the firm is successful and grows through retained earnings. The initial debt-equity ratio thus progressively falls. And suppose finally that many of the assets in this now-expanded enterprise are of a kind that could have been financed by debt.

Added value, in such a firm, can be realized by substituting debt for equity. This argument applies, however, selectively. It only applies to firms where the efficient mix of debt and equity has gotten seriously out of

alignment. These will be firms that combine (1) a very high ratio of equity to debt with (2) a very high ratio of redeployable to nonredeployable assets.

Interestingly, many of the large leveraged buyouts in the 1980s displayed precisely these qualities.

12. Tirole also describes LBOs as a “transitory form of organization. LBO sponsors and limited partners want to be able to cash out, in the form of a return to public corporation status or negotiated sales” (2006, p. 48). He furthermore observes that the LBO specialist “KKR sticks to the companies for five to ten years before exiting” (2006, p. 48).
13. As Jensen observes, “the close relationship between the LBO partners or venture fund partners and the operating companies facilitates the infusion of expertise from the board during times of crisis. It is not unusual for a partner to join the management team, even as CEO, to help an organization through such emergencies” (1993, p. 870).
14. Henry Hansmann contrasts the use of special charter provisions by venture capital start-up firms that have a relatively short expected life with publicly traded firms that consistently defer to the default terms provided by corporate law (2006, p. 9). Special charter provisions in venture capital firms are intended to elicit high-powered incentives. Default terms are more well-suited to business-as-usual.
15. Andrei Shleifer and Robert Vishny raise some of the pertinent issues as follows (1997, p. 741):

In principle, one could imagine a contract in which the financiers give funds to the manager on the condition that they retain all the residual control rights. Any time something unexpected happens, they get to decide what to do. But this does not quite work, for the

simple reason that the financiers are not qualified or informed enough to decide what to do – the very reason they hired the manager in the first place.

Whereas Shleifer and Vishny leave it at that, I inquire into what would be needed to give the financiers the requisite information base and expertise by which to exercise control in a nuanced way. This does not presume that the board gets to “decide what to do,” but that it does have the independent information and capacity to engage the management in a detailed discussion of past and prospective performance on the merits.

16. Also see Michel Crozier (1963, pp. 178-198).

17. Holmstrom’s remarks on overregulation apply (2005, p. 711):

Analysts and outside observers, like sports spectators, are quick to leap to conclusions about what should be done when things start to go wrong. They usually want to see the CEO fired much before it happens. Boards are seen as too passive, but the appearance can be deceptive. It takes time and information to figure out what role external factors have played and what responsibility current management carries.

It is crucial to gather such information in time and not start when the crisis hits. Getting information requires a trusting relationship with management. If the board becomes overly inquisitive and starts questioning everything that the management does, it will quickly be shut out of the most critical information flow – the tacit information that comes forward when management trusts that the board understands how to relate to this information and how to use it. Management will keep information to itself if it fears excessive

board intervention. A smart board will let management have its freedom in exchange for the information that such trust engenders.

18. John Lee Pratt describes resource allocation in the U-form firm, where resources were determined by a committee of functional managers as follows: “When one of them had a project, why he would vote for his fellow members; if they would vote for his project, he would vote for theirs. It was a sort of horse-trading” (Pratt, quoted in Chandler, 1962, p. 154).
19. For a discussion and interpretation, see Williamson (1981).
20. The monitoring function takes on greater importance as the proportion of non-redeployable assets that are financed with equity capital increases, but the management of these same assets may also warrant greater delegation – so the effect could go either way. This is an important issue to be addressed in future research.
21. To be sure, the firm seeks profitability subject to “appropriate “public policy constraints on competition and externalities. This can pose lobbying issues, in that the firm seeks to influence the political process in ways that favor it at the expense of the public interest. These concerns are beyond the scope of this paper.
22. Measures of performance at the essential variables can be compromised by a failure to choose the relevant measures (by reason of omission of appropriate measures or inclusion of misleading measures) or a failure to report accurately and intelligibly on the readings that are taken. In principle, accountants and auditors who subscribe to and live up to high standards of professional ethics will relieve such concerns. But by the same token, the integrity of the performance measures will be compromised if these professionals toady to the management.

23. The compensation of Home Depot CEO Robert Nardelli has recently come under scrutiny in this connection. As Julie Creswell reports (2006, p. A1):

A growing source of resentment among some is Mr. Nardelli's pay package. The Home Depot board has awarded him \$245 million in his five years there. Yet during that time, the company's stock has slid 12 percent. ...

Why would a company award a chief executive that much money at a time when the company's shareholders are arguably faring far less well? Some of the former Home Depot managers think they know the reason, and compensation experts and share holder advocates agree: the clubbiness of the six-member committee of the company's board that recommends Mr. Nardelli's pay.

Two of those members have ties to Mr. Nardelli's former employer, General Electric. One used Mr. Nardelli's lawyer in negotiating his own salary. And three either sat on other boards with Home Depot's influential lead director, Kenneth G. Langone, or were former executives at companies with significant business relationships with Mr. Langone.

In addition, five of the six members of the compensation committee are active or former chief executives ... [who] have a harder time saying no to the salary demands of fellow chief executives.

24. Tirole's succinct summary of the Bebchuk and Fried (2004) critique of the appointment of directors by the CEO is as follows (2006, p. 32):

Directors dislike haggling with or being "disloyal" to the CEO, have little time to intervene, and further receive a number of favors from the CEO: the CEO can place them on the company's slate, increasing seriously

their chance of reelection, give them perks, business deals (perhaps after they have been nominated on the board, so that they are formally “independent”), extra compensation on top of the director fee, and charitable contributions to nonprofit organizations headed by directors, or reciprocate the lenient oversight in case of interlocking directorates....

Directors also happily acquiesce to takeover defenses.

25. The efficacy of some plausible reforms is not borne out by the data. For example, Roberta Romano’s empirical examination (2005b) of the auditing recommendations of Sarbanes-Oxley shows that there is no empirical basis for introducing these rules; and the study by A. Burak Guner, Ulrike Malmendier, and Geoffrey Tate (2005) on the influence of financial experts finds that “financial experts on boards do have a significant impact on board decisions, but not necessarily in the interest of shareholders.”
26. Ideally, this presumption will not need to be exercised because executives will self-police their lapses.
27. Hansmann’s treatment of the efficacy of default provisions in state corporate law is pertinent.
28. Jensen takes a stronger position with respect to this last. He recommends that an independent member of the board rather than the CEO should be the chair (1993, p.866). Plainly, removing the CEO from chair (or co-chair) status signals an intention to empower shareholders. And it might have precisely that effect -- possibly with a confrontational result that compromises the efficacy of delegation. Confrontational or not, most CEOs should not be expected to embrace such a change.

Jensen is alert to these concerns and “hasten[s] to add that I am not advocating continuous war in the boardroom. In fact, in well-

- functioning organizations the board will generally be relatively inactive and will exhibit little conflict” (1993, p. 866).
29. To be sure, delegation always poses the hazard that those to whom delegation is entrusted will operate the organization in ways that compromise the interests of the delegators (Michels, 1962). Albeit a legitimate concern, delegation to the management of the modern corporation operates first and foremost in the service of efficiency.
 30. The propensity for unduly intrusive oversight is suggested by the recent experience of Airbus, where “The resignation of Airbus Chief Executive Christian Streiff after just three months on the job underscores the steep hurdles facing the big European aircraft maker as it tries to overcome damaging delays in its largest jet program and overhaul a cumbersome structure beset by politics and bureaucracy” (Michaels, 2006, p. A1). Streiff resigned because of what he considered “insufficient delegation.” The board concluded that Streiff “wasn’t diplomatic enough to handle the politically sensitive task of restructuring Airbus – especially because it is likely to entail job cuts, closing plants and shifting high-profile manufacturing work from one country to another.”

References

- Ashby, W.R. 1960. Design for a Brain. New York: John Wiley & Sons.
- Barnard, C. 1938. The Functions of the Executive. Cambridge, MA: Harvard University Press.
- Barron, James N. and David M. Kreps. 1999. Strategic Human Resources – Frameworks for General Managers. New York: Wiley Press.
- Bebchuk, Lucian Arye and Jesse Fried. 2004. Pay without Performance : The Unfulfilled Promise of Executive Compensation. Cambridge, MA: Harvard University Press.
- Bebchuk, Lucian Arye. 2005. "The Case for Increasing Shareholder Power." Harvard Law Review. Vol. 118, No. 3, p. 833-917.
- Ben-Porath, Yoram. 1980. "The F Connection: Families, Friends, and Firms and the Organization of Exchange," Population and Development Review, 6 (March): 1-30.
- Berle, Adolph A., and Gardner C. Means, Jr. 1932. The Modern Corporation and Private Property. New York: Macmillan.
- Buchanan, J. 2001. "Game Theory, Mathematics, and Economics," Journal of Economic Methodology, 8 (1), 27-32.
- Chandler, Alfred D., Jr. 1962. Strategy and Structure. Cambridge, MA: MIT Press.
- Coase, Ronald. 1937. "The Nature of the Firm," Economica N.S., 4: 386-405.
- Coase, Ronald. 1964. "The Regulated Industries: Discussion," American Economic Review, 54 (May): 194-197.
- Commons, J. 1932. "The Problem of Correlating Law, Economics, and Ethics," Wisconsin Law Review, 8: 3-26.

Creswell, Julie. 2006. "With Links to Home Depot Board, Chief Saw Pay Soar as Stock Fell," New York Times, May 24, 2006, p. A1.

Crozier, M. 1963. The Bureaucratic Phenomenon. Chicago: University of Chicago Press.

Demsetz, Harold. 1967. "Toward a Theory of Property Rights," American Economic Review, 57 (May): 347-359.

Dixit, Avinash. 1996. The Making of Economic Policy: A Transaction Cost Politics Perspective. Cambridge, MA: MIT Press.

Fama, Eugene and Michael C. Jensen. 1983. "Separation of Ownership and Control," Journal of Law and Economics, 26 (June): 301-326.

Friedman, Milton. 1997, in Brian Snowdon and Howard Vane, "Modern Macroeconomics and its Evolution from a Monetarist Perspective", Journal of Economic Studies, 24 (4): 192-222.

Georgescu-Roegen, Nicholas. 1971. The Entropy Law and Economic Process. Cambridge, MA: Harvard University Press.

Guner, A. Burak and Ulrike Malmendier and Geoffrey Tate. 2005. "Financial Expertise of Directors," NBER Working Paper 11914. Cambridge, MA.

Hansmann, Henry. 2006. "Corporation and Contract," ECGI Law Working Paper No. 66/2006. Yale Law School, New Haven, CT.

Hayek, F. 1945. "The Use of Knowledge in Society." American Economic Review. 35 (September): 519-530.

- Hellwig, Martin. 2000. "On the Economics and Politics of Corporate Finance and Corporate Control," in Corporate Governance: Theoretical and Empirical Perspectives (ed. Xavier Vives). Cambridge University Press. Cambridge, UK: 95-136.
- Holmstrom, Bengt. 2005. "Pay Without Performance and the Managerial Power Hypothesis: A Comment," Journal of Corporation Law, Summer 2005.
- Holmstrom, Bengt and Steven Kaplan. 2003. "The State of U.S. Corporate Governance: What's Right and What's Wrong?" Journal of Applied Corporate Finance, Vol. 15, Spring 2003.
- Jensen, Michael. 1993. "The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems," The Journal of Finance, July.
- Knauth, Oswald. 1948. Managerial Enterprise: Its Growth and Methods of Operation. New York: W.W. Norton.
- Knight, Frank. 1941. "Review of Melville J. Herskovits' 'Economic Anthropology,'" Journal of Political Economy. 49 (April): 247-258.
- Kreps, David. 1999. "Markets and Hierarchies and (Mathematical) Economic Theory," in Glenn Carroll and David Teece, eds. Firms, Markets, and Hierarchies. NY: Oxford University Press.
- Llewellyn, Karl N. 1931. "What Price Contract? An Essay in Perspective," Yale Law Journal, 40: 704-751.
- Mace, Myles. 1971. Directors: Myth and Reality. Cambridge, MA: Harvard University Press.
- March, James and Herbert A. Simon. 1958. Organizations. New York: John Wiley & Sons.

- McMillan, John. 2002. Reinventing the Bazaar: A Natural History of Markets. New York: W. W. Norton.
- Michaels, Daniel. 2006. "Airbus CEO's Resignation Reflects Company's Deep Structural Woes," Wall Street Journal, October 10, 2006.
- Michels, Robert. 1962. Political Parties. Glencoe, IL: Free Press.
- Mookerjee, Dilip. 2006. "Decentralization, Hierarchies, and Incentives: A Mechanism Design Perspective," Journal of Economic Literature, 44 June: 367-390.
- Morgenson, Gretchen. 2006. "Advice on Boss's Pay May Not Be So Independent," New York Times, p. A16. April 10, 2006.
- Myers, Stuart. 1985. "Comment on Investment Patterns and Financial Leverage." In Benjamin Friedman (ed.), Corporate Capital Structures in the United States. Chicago: University of Chicago Press, 348-51.
- Newell, Alan. 1990. Unified Theories of Cognition. Cambridge, MA: Harvard University Press.
- Nguyen-Dang, Bang. 2005. "Investor Recognition Hypothesis, Firm Value, and Corporate Governance: Evidence from Media Coverage of CEOs". Working paper, HEC Paris School of Management.
- Polanyi, Michael. 1962. Personal Knowledge: Towards a Post-Critical Philosophy. New York: Harper & Row.
- Reder, Melvin. 1999. Economics: The Culture of a Controversial Science. Chicago: University of Chicago Press.
- Romano, Roberta. 2005a. "After the Revolution in Corporate Law", Journal of Legal Education, 55, September: 342-359.

Romano, Roberta. 2005b. "The Sarbanes-Oxley Act and the Making of Quack Corporate Governance". Yale Law Journal, June, p. 1521-1610.

Shane, Scott. 2001. "Technological Regimes and New Firm Formation." Management Science. 47: 1173-1190.

Shleifer, Andrei and Robert Vishny. 1992. "Liquidation Values and Debt Capacity: A Market Equilibrium Approach" Journal of Finance, September, 1992.

Shleifer, Andrei and Robert Vishny. 1997. "A Survey of Corporate Governance" Journal of Finance, June.

Simon, H. 1957. Models of Man. New York: John Wiley & Sons.

Simon, H. 1962. "The Architecture of Complexity," Proceedings of the American Philosophical Society, 106 (December): 467-482.

Simon, Herbert. 1973. "Applying Information Technology to Organization Design," Public Administrative Review, 33 (May-June): 268-78.

Simon, Herbert. 1992. Economics, Bounded Rationality, and the Cognitive Revolution. Brookfield, CT: Edward Elgar.

Solow, Robert. 2001. "A Native Informant Speaks." Journal of Economic Methodology, 8 (March): 111-112.

Summers, Clyde. 1969. "Collective Agreements and the Law of Contracts," Yale Law Journal, 78 (March); 537-575.

Tirole, Jean. 2006. The Theory of Corporate Finance. Princeton, NJ: Princeton University Press.

Williamson, Oliver. 1975. Markets and Hierarchies: Analysis and Antitrust Implications. New York: Free Press.

Williamson, Oliver. 1981. "The Modern Corporation: Origins, Evolution, Attributes," Journal of Economic Literature, 19 (December): 1537-1568.

Williamson, Oliver. 1985. The Economic Institutions of Capitalism. New York: Free Press.

Williamson, Oliver. 1988. "Corporate Finance and Corporate Governance," Journal of Finance, 43 (July): 567-591.

Williamson, Oliver. 1991. "Comparative Economic Organization: The Analysis of Discrete Structural Alternatives," Administrative Science Quarterly, 36 (June): 269-296.

Williamson, Oliver. 1995. "The Politics and Economics of Redistribution and Inefficiency," Greek Economic Review, 17 (No. 2): 115-136.

Williamson, Oliver. 1996. The Mechanisms of Governance. New York: Oxford University Press.

Williamson, Oliver. 2002. "The Theory of the Firm as Governance Structure: From Choice to Contract," Journal of Economic Perspectives, 16 (Summer): 171-195.

Williamson, Oliver. 2005. "The Economics of Governance," American Economic Review, 95 (May): 1-18.

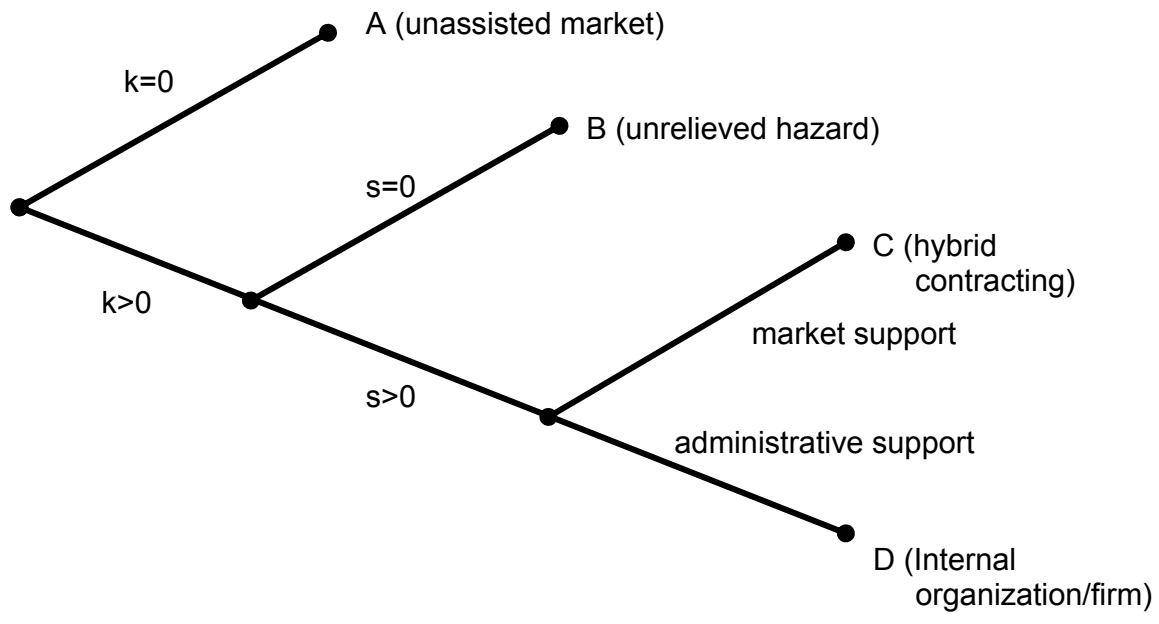


Figure 1.
Simple Contractual Schema

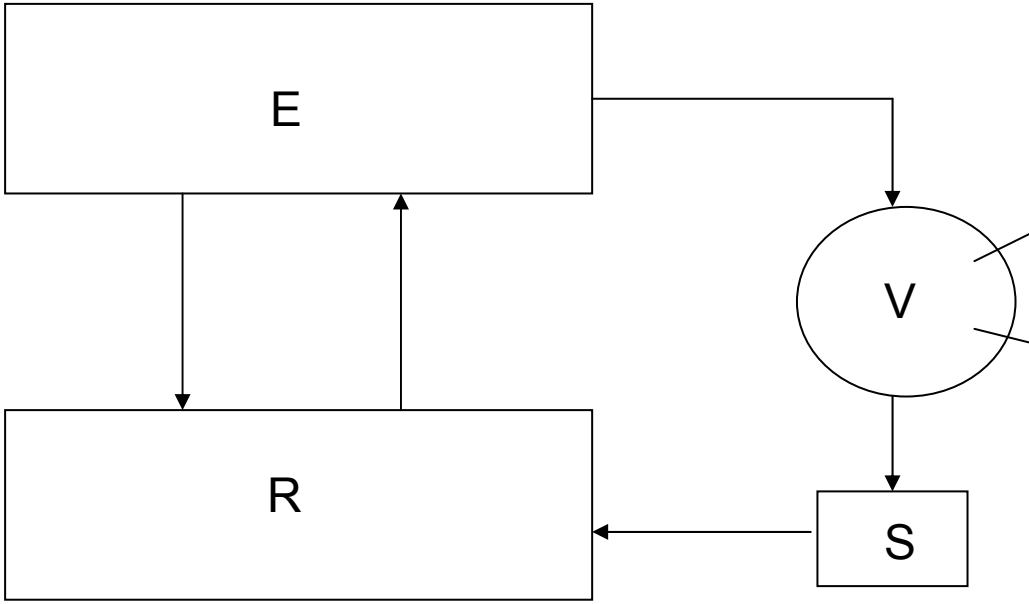


Figure 2.
Double Feedback

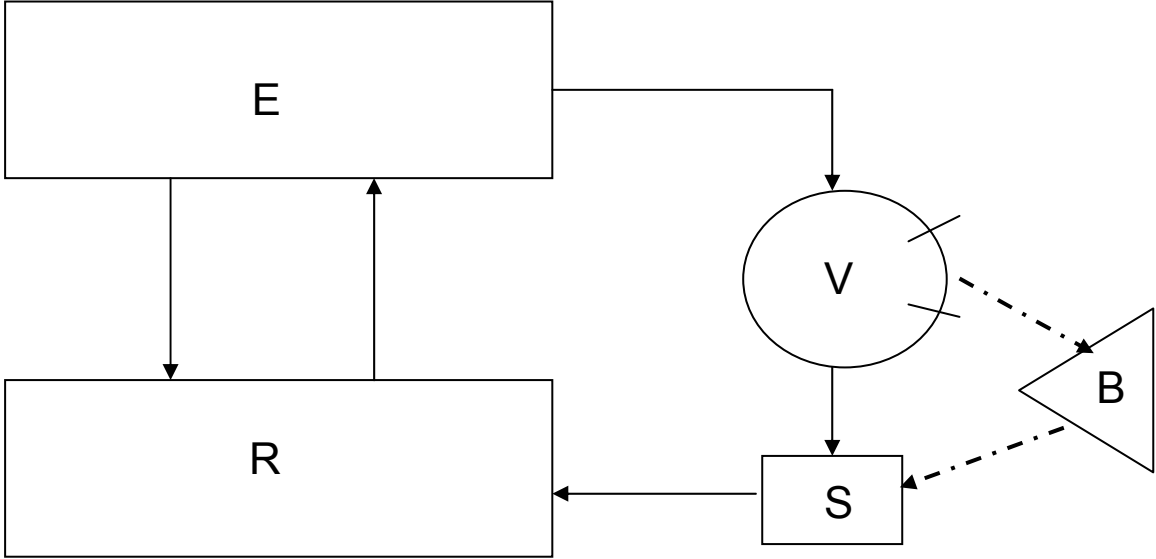


Figure 3.
The Double Feedback
Board in Practice