CORPORATE GOVERNANCE: THEORIES, CHALLENGES AND PARADIGMS

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This paper provides orientation in understanding the topic of corporate governance to further research, analysis and reform. Limitations in the theories and practices of the dominant Anglo paradigm are identified. Various viewpoints used in analysing corporate governance are described with their cultural specificities. To transcend and subsume other approaches and various institutional contexts, information and control theory is shown to provide a way of grounding corporate governance, theories of the firm, and the analysis of organisations in general in the science of cybernetics. Some research and reform opportunities are considered.

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Corporate Governance: Theories, challenges and paradigms

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There are no agreed definitions or boundaries for defining or investigating corporate governance. "The lack of a broad defining paradigm has created a sense of intellectual vertigo in the increasingly intense debate over corporate governance reforms" (Pound 1993b). An objective of this paper is to provide orientation for understanding the topic to further research, analysis and reform.

This first section presents an inclusive definition of corporate governance used in this paper. Some limitations in Anglo scholarship are discussed in the second section with cultural specificities in theories and practices considered in section three. Limitations in the theory of the firm are considered in section four and compared with the extended boundaries introduced by using the paradigm of Transaction Byte Analysis (TBA). In section four two surveys of corporate governance are reviewed which consider: the finance, stewardship, stakeholder and political models of corporate governance. Section five introduces other ways of analysing corporate governance based on culture, power and cybernetics. Section six identifies seven areas offering research opportunities with concluding remarks following in the final section.

In this paper, the term corporate governance will be used to describe all the influences affecting the processes for appointing those who decide how operational control is exercised to produce goods and services and all external influences affecting operations or the controllers. Defined in this way corporate governance includes all types of firms whether or not they are formed under civil or common law, owned by the government, institutions or individuals, privately held or publicly traded. While this definition is much more inclusive than others considered by Turnbull (1997a: 181) it separates out management activities not involved in the processes for appointing the controllers.

The range of influences affecting the governance of publicly traded firms is indicated in Table 1. The Table includes public sector laws and regulators as well as various private sector influences.

{INSERT TABLE 1 ABOUT HERE}

Influences affecting the controllers of publicly traded firms

Much of the literature on corporate governance implicitly assumes that only publicly traded firms are the subjects of analysis, for example Blair (1995: 3). This would limit the topic to around 60,000 firms world-wide and involve only a fraction of all economic activity in even the most advanced market societies (FIBV 1993; Economist 1995:116; 1999: 120). As a result, some of the most influential corporate governance scholarship has limited application.

Restricting the study of corporate governance to publicly traded corporations could limit investigation into the most efficient institutional arrangements for undertaking productive activities. Privately held entities could provide the most efficacious form of enterprise notwithstanding the current ideologically commitment to privatization. This possibility is supported by Jensen's (1993:869) view of a "proven model of governance structure" based on the private ownership of Leverages Buy-Out Associations (LBO's), and the outstanding economic performance of the stakeholder co-operatives located around the town of Mondragón in Spain (Turnbull 1995d).

If firms include all social institutions engaged in the production and sale of goods and services, then both public and private sector organisations such as schools, hospitals, clubs and societies need to be included. With firms defined in this way, the scope of corporate governance includes nearly all the economic activity of a nation. It was by asking the question, "Why is not all production carried on by one big firm?" that Coase (1937) laid the intellectual foundations for developing a 'theory of the firm'.

Limitations in Anglo scholarship

The relevance of Anglo corporate governance scholarship is much more limited than to just those firms that are publicly traded. This is because another common unstated implicit assumption by Anglo scholars is that they are dealing with firms with a unitary board without an influential shareholder in the tradition of Berle & Means (1934). This stylised form of firm has limited the relevance of much empirical research because dominant shareholders act like a supervisory board and are not uncommon.

Dominant shareholders are the norm in Europe (Brecht & Roell 1999, ECGN 1997, Bianchi, Bianco & Enriques 1999) and Japan (Analytica 1992). They are also common in Anglo countries with extensive foreign investment as found in Australia, New Zealand and Canada and/or in developing economies which have many founding entrepreneurs and family groups in control. For example, Stapeleton (1998) reports that 45% of companies in the 'All Ordinaries Index' of the Australian Stock Exchange (ASX) are effectively controlled by a non-institutional shareholder owning more than a 20% of the shares. Non-institutional investors with between a 5% and 20% interest control another 33% of companies in the index. Even in the US, the presence of a dominant shareholder is not uncommon with the very largest corporations. Zey (1999) reports that around 20% of the Fortune 500 companies have a dominant non-institutional shareholder. This sample also includes companies like Microsoft and News Corporation controlled by their founding entrepreneurs.

A dominant shareholder of a publicly traded firm with a unitary board creates a two tiered control system such as may be required *within* a firm by civil law in Europe. Any system of control with two or more significantly differentiated power centres, *within or between* firms, or with an other entity like the founding entrepreneur, will be described in this paper as a "compound board".

Like a supervisory board in Europe, a dominant shareholder has the power to manage the many conflicts of self-interest which directors of a unitary board are exposed to as identified in Table 2. Supervisory boards and/or dominant shareholders not only introduce checks and balances in managing self-serving activities of directors but also introduce the decomposition of decision making labour to simplify directors duties and responsibilities, and so reduce their personal liabilities and work load.

{INSERT TABLE 2 ABOUT HERE}

Corrupting powers of a unitary board

Even greater decomposition of decision making labour is found in some European firms, which possess three of more control centres. The stakeholder controlled cooperatives of Mondragón in Spain have five control centres (Turnbull 1995d). They demonstrate how increasing the complexity of the information and control system of a firm can simplify decision making to allow ordinary people to produce extra-ordinary results.

Compound boards are also formed by venture capitalists and in joint venture arrangements, alliances, network firms; LBO's and they appear to be a condition precedent to sustain non-trivial employee owned firms (Bernstein 1980). However, many scholars do not look outside the boardroom (eg. Hilmer 1993) of a firm being investigated to ascertain whether the firm has other centres of control. The existences of such other centres can substantial change the role and functions of a unitary board.

The principal functions of a unitary board in a Berle & Means firm is to select, remunerate, direct, monitor, control and retire the CEO. While all directors of a unitary board may technically possess these responsibilities they may not in practice determine how their power is exercised when the CEO and/or his family are the dominant shareholder. Bill Gates of Microsoft and Rupert Murdoch of News Corporation provide examples. The practical responsibilities and powers of directors of such companies are quite different from those without a dominant shareholder.

However, many Anglo corporate governance scholars and practitioners not only commonly ignore the existence of two tiered or more complex control systems but consider them alien to their way of doing business! This denial of reality can be explained by the observation of Kuhn in considering research into what he described as “normal science”. Kuhn (1970: 24) observed that this type of research does not "call forth-new sorts of phenomena: indeed those that will not fit the box are often not seen at all".

This is illustrated by the many empirical studies on the structure of unitary boards where the existence, and so the role of a dominant shareholder has been neglected. The presence of a dominant shareholder is also commonly neglected in studies investigating the relationship of board variables to firm performance. One such example was the investigation by Gertner & Kaplan (1998) into “The Value Maximising Board”. They attributed the smaller size of LBO boards that had gone public again as a contributing factor for their superior performance. However, the presence of a dominant shareholder involving the residual buy-out investors was not considered. Kang (1998) provided evidence that a dominant shareholder can increase performance while Chidambaran. & John (1999), show that they can more constructively monitor executive remuneration.

Cultural specificities in theories and practice

Research into the theory and practice of corporate governance has been heavily focussed on English speaking countries and the US in particular. “Most of the available empirical evidence in the English language comes from the United States” (Shleifer and Vishny 1996: 6). Hollingsworth, Schmitter & Streeck (1994: 4) state: “In the 1950s and 1960s, hardly anyone disagreed with the assumption that the more traditional and, therefore, backward economies like Japan, Germany, or Europe as a whole would have to adopt American patterns of industrial organisation”. The lack of research in comparing different systems of corporate control was only recognised in the US in the 1990's. This neglect was explained by Gilson (1994: 132) who noted that “the American system seemed to represent the evolutionary pinnacle of corporate governance, so other systems were either less far along the Darwinist path, or evolutionary deadends, neither lagards nor Neanderthals made interesting objects of study”.

This view was exacerbated by the US being the most powerful economy in the world, the 'citadel of capitalism', and a widely recognised role model for other countries seeking to better themselves. The importance of a study by Porter (1992) is that it provided a counter view for US academics and policy makers. To make US firms competitive with those in

Japan and Germany Porter (1992: 16 & 17) recommended to US policy makers, institutional investors and corporations that they increase the involvement of employees, customers, suppliers and host community in their ownership and control structure. Because no business can exist without its employees, customers, suppliers and host community, they are described as "strategic stakeholders" (Turnbull 1997g,h).

The US has also dominated the development of the theory of the firm, which was based on the assumption, some might say paradigm, that "in the beginning there were markets" (Williamson 1975: 20) and that firms exist because markets fail, ie. "suppression of the price mechanism" (Coase 1937).

US scholars developed the theory of the firm during the height of the ideological contest between capitalism and communism. It would have been unpatriotic to entertain the possibility that markets were not the natural order of a free society. The failure of communism has reinforced the hegemony of market ideology with widespread political interest in privatisation based on the US model of a firm. The problems of using this model in the US are identified by Jensen (1993), in Russia by Blasi & Gasaway (1993) and in Australia by Turnbull (1993a,b; 1995a,c,f). The problems of the US model in either the US or former socialist economies are outlined by Shleifer & Vishny (1996) and from the conflicts of self-interest inherent in a unitary board as shown in Table 2. However, faith by political ideologues in replicating the dominant, but flawed US governance model, has so far been little inhibited by scholarly research, empirical evidence or the competitive success of other approaches such as identified by Porter (1992) and Turnbull (1995d).

Even in Anglo countries with a well-developed system of property rights, law and regulatory agencies, major failures in corporate control frequently occur. These failures commonly occur with clean audit reports, which has created an academic literature on the "audit expectation gap" (Guthrie 1992, Guthrie & Turnbull 1995, Walker 1991a, 1991b). As responses to major failures, committees of inquiry are established (Cadbury 1992, Bosch 1995) and codes of "best practice" recommended as a political palliative and attempt to patch up an inherently flawed system. However, all such codes for unitary boards are "misguided, misleading and so misnamed" (Turnbull, 1999c).

Palliatives provided by such codes involve the establishment of audit, remuneration and nomination committees. However, such arrangements cannot remove the conflicts of self-interest intrinsic to any unitary board. An additional palliative is the appointment of external directors with claims that they can be "independent" even when they must rely on information provided by management to monitor, direct, control, remunerate or retire management. With many unitary boards, the external directors hold their position at the grace and favour of management and do not have the will, power or capability to act independently. It becomes very much in the self-interest of management to have external directors who meet the test of being independent as such people will have minimum firm specific and perhaps little industry specific knowledge and authority to challenge management. Bhagat & Black (1997) provide evidence that independent directors can be counter-productive.

The dominance of Anglo theory and practice has resulted in governments blindly following the fundamentally flawed unitary control system for privatisation. It has also meant that Anglo dominated multinational institutions like the World Bank have exported a flawed system of corporate governance around the world. This has included including the former socialist economies converting to a market system where the system of property rights, law and regulatory bodies are poorly developed to compensate the corrupting features of an unitary board which has absolute power to manage its own conflicts of self-interest. Absolute power can corrupt both people and the performance of a business. This has become very evident in Russia (Economist 1999a).

After a fifteen-year study of boards, Demb & Neubauer (1992b: 1) concluded that "At this point in history, existing mechanism for governing corporations are no longer adequate. The scale, complexity, importance, and risks of corporate activity have over-run our institutions." Tricker states (1990: 74) "The need for rethinking the system design parameters of modern corporations is apparent". Both Tricker (1994: 266), and the OECD (1997, 2.6), see the formalisation of unitary board processes leading to the development of a two tiered board.

Hatherly (1994) argues the case for a "shareholder panel" to supervise directors in a manner consistent with the role of a "Corporate Senate" referred to by Turnbull (1992, 1993a,b); Renton (1994: 36); Guthrie & Turnbull (1995); Monks & Minow (1995: 317), and Tricker (1996: 75–6). Unlike the European two tiered boards, a Shareholder Panel or Senate does not elect the board. Their relationship is more in line with the “Censeurs” found in French financial institutions, and in government owned firms (Analytica 1992: 107). In discussing shareholder committees in the US, Pound (1992: 91) notes that "Currently, there is a resurgence of this activity". He points out that they "can act like a shadow cabinet in a parliamentary system, offering shareholders independent analysis and an alternative agenda".

To manage the inherent conflicts of a unitary board, Latham (1999) has proposed the development of specialist monitoring firms. Law Professor Lynne Dallas (1997) has developed the most insightful analysis and constructive proposal for overcoming conflicts of interests. She has proposed a dual board combined with a “board ombudsperson” grounded in her “power” model of corporate governance considered later and illustrated by Table 6.

Limitations and extension of the Theory of the firm

The assumption made by US scholars that in the beginning there were markets is not supported by the evidence of history as noted by Ben Porath 1978), North (1985: 558), Turnbull (1978b: 52; 1994d: 328) and others. In the beginning, economic transactions were governed by social relationships rather than by markets, hierarchy or even what Williamson (1990: x) refers to as 'hybrid modes of organisation' combining both markets and hierarchy. Sociologists, Hollingsworth & Lindberg, (1985: 221–2) state that there are “four distinctive forms of governance ... market, hierarchies, the clan or community and associations”. Each form relies on a different type of information and control channel as set out in a typology described by Turnbull (1978b: 6; 1994d: 328). Two of these additional forms of governance are outside the discipline of economics and so beyond the field of vision and analysis by economists.

It was also outside the field of vision of Coase (1937), trained in commerce, which led him to ask and answer the wrong question when laying the foundations for developing the theory of the firm. Instead of inquiring why economic transactions are organised through the "authority system" of a firm rather than through the market, he should have asked when are economic transactions organised by any combination of the four different ways in which transactions can be governed.

Each of these four institutional modes for governing human activities have "a separate logic of collective action and social order" as described by Streeck & Schmitter (1985: 11). The existence of four rather than two institutional modes of organising human co-operation means that existing theories of the firm are incomplete (Turnbull 1994a). This does not necessarily mean that existing theories of the firm are incorrect, only that they may have limited application, in a way analogous to Newtonian 'laws of motion' providing correct answers when the effects of relativity are not present. In other words, the theory of the firm becomes most relevant in cultures committed to competition with strong anti-trust laws and large scale impersonal publicly traded firms without related party transactions. This describes the US economy where it is assumed that firms have ownership separated from control as reported by Berle & Means (1934), and are not strongly bonded through cultural, clan, trade, industry, vocational or other associations, including strong interlocking directorships.

The US based theory of the firm becomes less relevant when economic transactions are mediated by cultural priorities; business related associations, trade, vocational, family, social and political networks. These are more prominent in continental Europe, Japan and other Asian countries (Hollingsworth & Lindberg 1985; Analytica 1992; Hollingsworth, Schmitter & Streeck 1994; Hollingsworth & Boyer 1997). However, “the social governance of markets” in the US is not insignificant, as detailed by Bruyn (1991). The operating advantages of a greater reliance on associations and networks in the governance of firms has been reported by Franks & Mayer (1993), Gilson & Roe (1993), Kester (1992), and Turnbull (1995d; 1999a). Blair (1995), Fukao (1995: 74,77,78), and Porter (1992: 16–17) all recommend that US firms involve their strategic stakeholders. In the tradition of Anglo research, Porter, Blair and Fukao did not identify that the greater involvement of stakeholders in the ownership and control structure of corporations in other cultures arose from the existence of a compound board. The introduction of stakeholders on a unitary board to create what Williamson (1985: 300) refers to as “interest group management” would introduce unacceptable conflicts of interest. However, the compound boards found in Japan and Europe can also produce counter productive conflicts of interest from the involvement of strategic stakeholders with their related party interests. Table 3 suggests how the property rights of investors can be protected from such conflicts while involving strategic stakeholders to meet Porters recommendations without compounding the conflicts.

{INSERT TABLE 3 ABOUT HERE}

Anglo corporate governance compared with competitive practices

While Street and Schmitter (1985: 1), Hollingsworth & Lindberg (1985: 221) and Turnbull (1994a: 325–8, 1999a) have outlined a possible theoretical framework for analysing governance systems between cultures, corporate governance scholars have not yet used their work. Hollingsworth, Schmitter & Streeck (1994: 5) state that "Contemporary mainstream economics postulates essentially two mechanisms of governance: *markets and corporate hierarchies.*" They go on to say: "In the limited institutional repertory envisaged by mainstream economics, corporate hierarchies are the preferred, and in fact the only 'economic', alternative to markets".

Failure by many economists to recognise that there are modes of governing transactions outside markets and hierarchy, and the hegemony of market ideology, has resulted in there being "no accepted theoretical framework for comparing systems of corporate governance within or between cultures" (Demb & Neubauer 1992a). Radner (1992) goes further to state "I know no theoretical research to date that compares the relative efficiency of hierarchical and non-hierarchical organisations within a common model". More generally, Jensen (1993: 873) observed that "we're facing the problem of developing a viable theory of organizations". This problem has been identified by a number of other leading workers in the field.

Coase (1991b: 72) saw the need for "a more comprehensive theory" and stated that "theory is outrunning our knowledge of the facts in the study of industrial organization and that more empirical work is required if we are to make progress" (1991a: 451). North (1985: 572) noted that there is an "additional dimension currently missing in the discipline of economics". Williamson (1990: xi) sees the need for "observing the phenomena at a higher level of resolution". Williamson (1991: 10) noted that "In Demsetz's judgment, however, recent work—of team theory (Alchian & Demsetz, 1972), agency theory (Jensen & Meckling, 1976) and transaction cost kinds—has not gone far enough". Demsetz (1991: 159) stated that "a more complete theory of the firm must give greater weight to information cost than is given either in Coase's theory or in theories based on shirking and opportunism which have not gone far enough".

However, these concerns can be overcome by using information rather than costs as the unit of analysis. In the Coasian analysis of why firms exist, costs represent a proxy for information, which is measured in bytes. The ability of individuals to transact bytes has "neurophysiological limits" as noted by Williamson (1975: 21) who went on to observe that "The physical limits take the form of rate and storage limits on the powers of individuals to receive, store, retrieve, and process information without error." Some of these limits are identified in Table 4, which indicates how Transaction Byte Analysis (TBA) can be grounded in the physical sciences.

TBA provides a way to subsume TCE and ground organisational analysis in the laws of cybernetics and other pure and applies sciences. The criteria for evaluating and designing organisations becomes one reducing the bytes transacted by individuals so that they can operate within their capabilities. That is, to economise bytes rather than costs. In this way costs can also be economised as they represent a proxy for bytes in the Coasian/Williamson paradigm. This paradigm is compared with the TBA in Table 5.

{INSERT TABLE 4 ABOUT HERE)

Human constraints in transacting bytes

{INSERT TABLE 5 ABOUT HERE)

Comparison between TCE and TBA boundaries of analysis

The lack of an accepted framework for comparing different systems of corporate governance has resulted in comparative corporate governance research being principally empirical. Notable contributions to this relatively recent field have come from scholars outside the US such as those of Analytica (1992), Demb & Neubauer (1992b), Franks & Mayer (1993), Isaksson & Skog (1994), Charkham (1994), Gönenç (1994), Tricker (1994), Wymeersch (1994), Garrett (1996), Turnbull (1975b; 1995a,b,c,d,f; 1997e,f; 1997a; 1999a) and members of the European Corporate Governance Network (ECGN) like Brecht & Roell (1999), Bianchi, Bianco, & Enriques, (1999) et.al. US contributions have focused on Japan or Germany such as those by Kester (1991; 1992), Porter (1992), Roe (1993), Gilson & Roe (1993) and Aoki (1993), with other countries considered by Black & Coffee (1993), Blasi & Gasaway (1993), Monks & Minow (1995), Fukao (1995) and Preston (1996).

Theories relevant to corporate governance

Hawley & Williams (1996) undertook a literature review of corporate governance in the US as a background paper for the Organization for Economic Cooperation and Development (OECD). They identified four models of corporate control: 1. The Simple Finance Model, 2. The Stewardship Model, 3. The Stakeholder Model, and 4. The Political Model. Three additional ways of analysing corporate governance are also considered in the next section based on respectively, culture, power and cybernetics. Another *Survey of Corporate Governance* by Shleifer & Vishny (1996) for the National Bureau of Economic Research was not restricted to the US, but its scope was limited to the finance model consistent with the specialised definition of corporate governance adopted by the authors. They defined corporate governance as "the ways in which the suppliers of finance to corporations assure themselves of getting a return on their investment" (Shleifer & Vishny 1996: 2). However, their analysis is burdened with the ambiguity inherent in key economic terms discussed by Turnbull (1997a: 182).

US scholars wrote the two surveys referred to above. Both surveys contain some unstated culturally determined boundary conditions and assume that the US context provides a universal reference. Shleifer & Vishny (1996: 6) explicitly state that "while we pay some attention to cooperatives, we do not focus on a broad variety of non-capitalist ownership patterns, such as worker ownership and non-profit organizations". Nor are these types of firms considered by Hawley & Williams who do not state their boundary conditions.

Tricker (1996: 31) states:

> Stewardship theory, stakeholder theory and agency theories are all essentially ethnocentric. Although the underlying ideological paradigms are seldom articulated, the essential ideas are derived from Western thought, with its perceptions and expectations of the respective roles of individual, enterprise and the state and of the relationships between them.

Neither Shleifer & Vishny nor Hawley & Williams define the type of 'capitalistic' firms subject to their survey, the basis, if any, that their securities are publicly traded and the characteristics of the securities, which exert some controlling, influence on the firm. In the tradition of US scholarly corporate governance research, the US legal/political/regulatory system and the division of power between directors and shareholders, as set out in corporate constitutions, is mostly implicitly accepted as the given 'state of the world'. There are, however, important variations between US States (Monks 1996; Gordon 1993), between Anglo cultures (Black & Coffee 1993) and between other cultures (Analytica 1992, Porter 1992, Fukao 1995, and Charkham 1994).

For example, publicly traded firms in Europe may have two or three tiered boards (Analytica, 1992). Between and within Europe and the US there are different ways of publicly trading the securities of a firm. Different stock exchanges have different rules governing the powers of directors in relation to their shareholders. These introduce different regulatory regimes to produce significant differences in the management discretions of the firm, eg. The requirement to have audit, remuneration and nomination committees; methods of electing or appointing directors; shareholder approval to pay directors, new share issues, establishing employee share plans, changing auditors, merging with another firm or changing the corporate charter or place of incorporation, etc. The voting rights of shares, the rights of shareholders to call meetings, the percentage of votes required to achieve changes in control, capitalisation or corporate charters may also vary according to each firm, stock exchange, place of incorporation or national laws and regulations.

The Hawley & Williams survey is implicitly limited to corporations, which have their shares publicly, traded and explicitly limited to US based firms. Not being limited to either US firms or the 'simple finance model' of Hawley & Williams, Shleifer & Vishny consider additional dimensions of the finance model. Consistent with their concern of how financiers 'assure themselves of getting a return on their investment' they also survey how corporate control is influenced by debt securities and bankers.

Implicit assumptions of both surveys seem to be that all publicly traded firms have 1. The rights of perpetual succession, 2. Limited liability, 3. Unitary boards, 4. Management hierarchies without related party transactions, strategic alliances or networks as found in non-anglo firms, and 5. Unambiguous boundaries.

To provide a perspective of the relative importance of publicly traded firms, it is interesting to note that around 75% of the 60,000 publicly traded corporations in the world are found in cultures which have adopted Anglo corporate concepts (FIBV 1993; Economist 1995: 116 & 1999b: 120). The only non-anglo countries with more than 1,000 publicly traded corporations (excluding investment funds) are Japan (2,953), Germany (1,297) and Brazil (1,129). France and Italy all have less than 1,000 listed companies. The Fédération Internationale des Bourses de Valeurs (FIBV) records four Anglo countries with more than 1,000 listed companies: the US (10,546), Canada (3,079), United Kingdom (2,412), and Australia (1,107). India has around 5,860 listed companies (Economist 1999b) not included in the FIBV statistics.

1. The simple finance model

"In the finance view, the central problem in corporate governance is to construct rules and incentives (that is, implicit or explicit 'contracts') to effectively align the behaviour of managers (agents) with the desires of principals (owners)", (Hawley & Williams 1996: 21). However, the 'rules' and 'incentives' considered, are generally only those within the existing US system of publicly traded firms with unitary boards.

The rules and incentives in the finance model refer to those established by the firm rather than to the legal/political/regulatory system and culture of the host economy or the nature of the owners. The finance view represents a sub-section of the political model of corporate governance. The political model interacts with the 'cultural', 'power' and 'cybernetic' models raised in the following section.

It is the nature of the owners, which exacerbates corporate control problems found in Anglo countries like the US, Canada, UK and Australia. In each of these countries, institutional investors may own the majority of the shares in most of the largest publicly traded firms unlike in continental Europe and Japan (Analytica 1992; ECGN 1997). Institutional investors, such as pension and mutual funds, collectively owned more than 57% of the top US 1,000 firms in 1994 (Hawley & Williams 1996: 8). The problem with institutional ownership is that their investment managers are fiduciary agents of the beneficial owners and so the situation is created of agents representing agents. Hence the term 'Fiduciary Capitalism' or what Peter Drucker (1976) more provocatively described as 'Pension Fund Socialism'.

The problem of agents being responsible to agents is that it compounds the agency costs identified by Jensen & Meckling (1976). A basic assumption is that managers will act opportunistically to further their own interests before shareholders. Jensen and Meckling showed how investors in publicly traded corporations incur costs in monitoring and bonding managers in best serving shareholders. They defined agency costs as being the sum of the cost of monitoring management (the agent); bonding the agent to the principal (stockholder/ ‘residual claimant’; and residual losses. Their analysis also showed: why firms use a mixture of debt and equity; why it is rational for managers not to maximise the value of a firm; why it is still possible to raise equity; why accounting reports are provided voluntarily and auditors employed by the company; and why monitoring by security analysts can be productive even if they do not increase portfolio returns to investors.

A basic conclusion of agency theory is that the value of a firm cannot be maximised because managers possess discretions, which allow them to expropriate value to themselves as identified in Table 2.. In an ideal world, managers would sign a complete contract that specifies exactly what they could do under all states of the world and how profits would be allocated. “The problem is that most future contingencies are too hard to describe and foresee, and as a result, complete contracts are technologically unfeasible” (Shleifer & Vishny 1996).

As a result, managers obtain the right to make decisions, which are not defined or anticipated in the contract under which debt or equity finance is contributed (Grossman & Hart 1986; Hart & Moore 1990). This raises the “principal's problem” (Ross 1973) and “agency problem” (Fama & Jensen 1983a,b). How can publicly traded firms with such incomplete contracts with their managers be effective in efficiently raising funds?

The “agency problem” is particularly acute in Anglo cultures with dispersed ownership where corporations do not have a supervisory board or what Monks (1994) describes as a “relationship investor”. When all shareholders own small minority interests to create diverse ownership it is not rational for any investor to spend time and incur costs to supervise management as this provides a 'free ride' for other investors. In any event, small shareholders may lack the power and influence to extract information, which could reveal expropriation or mismanagement.

In many Anglo countries, the law may limit the ability of shareholders to become associated together to form a voting block to influence or change management unless they make a public offer to all shareholders. Insider trading laws may also inhibit or prohibit shareholders from obtaining the necessary information to monitor and supervise management. Monks (1996), an Assistant Secretary of Labour in the Reagan Administration describes how US corporate managers have influenced law making to protect themselves from shareholder interventions.

2. The stewardship model

In the stewardship model, 'managers are good stewards of the corporations and diligently work to attain high levels of corporate profit and shareholders returns' (Donaldson & Davis 1994). Both Lex Donaldson and Davis teach in business schools. Their arguments support the investment of business schools and their students in the development of management skills and knowledge. It also reinforces the social and professional kudos of being a manager.

Donaldson & Davis note that "Managers are principally motivated by achievement and responsibility needs" and "given the needs of managers for responsible, self-directed work, organizations may be better served to free managers from subservience to non-executive director dominated boards". According to Donaldson & Davis, "most researchers into boards have had as their prior belief the notion that independent boards are good" and "so eventually produce the expected findings". There are influential and powerful sources who recommend the need for independent non-executive directors such as the Council of Institutional Investors in the US, Cadbury (1992) in the UK, Australian Institutional investors (AIMA 1995), existing professional directors, and all those would like to become non-executive directors.

However, supporting stewardship theory are the individuals who contribute their own money and other resources to non-profit organisations to become a director. In analysing the welfare distributed to stakeholders through introducing a division of powers, Persson, Roland & Tabellini (1996) had provisions in their equations to include the welfare contributed by controllers.

In commenting on stewardship theory, Hawley & Williams (1996: 29) state that "The logical extension is either towards an executive-dominated board or towards no board at all". Donaldson & Davis point out "the non-executive board of directors is, by its design, an ineffective control device" and cite evidence to support the view that "the whole rationale for having a board becomes suspect". Brewer (1996) reported that "One of Canada's best-known business leaders suggested last month that boards of directors should be abolished and replaced by a formal committee of advisers". This view arose from the businessman in question being sued as a director of an insurance company for over a billion dollars from actions taken by management.

Boards can become redundant when there is a dominant active shareholder, especially when the major shareholder is a family or government. One could speculate that some boards are established from cultural habit, blind faith in their efficacy, or to make government or family firms look 'more business like'.

However, research by Pfeffer (1972) has shown that the value of external directors is not so much how they influence managers but how they influence constituencies of the firm. He found that the more regulated an industry then the more outsiders were present on the board to reassure the regulators, bankers, and other interest groups.

Tricker (1996: 29) points out "underpinning company law is the requirement that directors show a fiduciary duty towards the shareholders of the company". Inherent in the idea of directors having a fiduciary duty is that they can be trusted and will act as stewards over the resources of the company. Thus in Anglo law, directors duties are based on stewardship theory. This duty is higher than that of an agent as the person must act as if he or she was the principal rather than a representative.

Many writers, and especially the proponents of stewardship and agency theory, see each theory contradicting the other. Donaldson & Davis raise the possibility that there is some deficiency in the methodologies of the numerous studies they cite which provide support for both theories. Some possibilities are that the studies did not separate out the affect of firms being in a regulated industry as analysed by Pfeffer (1972) or possessing a dominant shareholder acting as a supervisory board or 'relationship investor' as discussed earlier.

Ghosal & Moran (1996: 14) raise the possibility that the assumption of opportunism on which agency theory is based, "can become a self-fulfilling prophecy whereby opportunistic behaviour will increase with the sanctions and incentives imposed to curtail it, thus creating the need for even stronger and more elaborate sanctions and incentives". Likewise, stewardship theory could also become a self-fulling. This would appear to be the situation in firms around Mondragón, which have no independent directors. All board members are either executives or stakeholders (Turnbull 1995d). However, each firm and each group of firms in the Mondragón system is controlled by three or more boards/councils or control centres which introduces a division of power with checks and balances to manage conflicts.

The inclination of individuals to act as stewards or self-seeking agents may be contingent upon the institutional context. If this is the case, then both theories can be valid as indicated by the empirical evidence. Stewardship theory, like agency theory, would then be seen as sub-set of political and other broader models of corporate governance. Psychological analysis supports both theories. Wearing (1973), a professor of psychology states that: "differences between individuals are significant and important". The need for money and approval, etc. is "determined and limited by the necessity of maintaining the organism in a state of dynamic equilibrium". People stand "in an interactive cybernetic relationship to his/her community and environment, and is changed as a result of any interaction" and individuals are "sometimes competitive, sometimes collaborative: usually both".

The inclination of individuals to act as selfless stewards may be culturally contingent. The 'company man' in Japan may place his employer before family. The voluntary resignation of executives is not uncommon when a firm is disgraced and instances of suicide are still reported.

3. The stakeholder model

In defining 'Stakeholder Theory' Clarkson (1994) states: "'The firm' is a system of stake holders operating within the larger system of the host society that provides the necessary legal and market infrastructure for the firm's activities. The purpose of the firm is to create wealth or value for its stakeholders by converting their stakes into goods and services". Blair (1995: 322) supports this view and stated:

> ... the goal of directors and management should be maximizing total wealth creation by the firm. The key to achieving this is to enhance the voice of and provide ownership-like incentives to those participants in the firm who contribute or control critical, specialized inputs (firm specific human capital) and to align the interests of these critical stakeholders with the interests of outside, passive shareholders.

Consistent with this view to provide "voice"'and "ownership-like incentives" to "critical stakeholders", Porter (1992: 16–7) recommended to US policy makers that they should "encourage long-term employee ownership" and "encourage board representation by significant customers, suppliers, financial advisers, employees, and community representatives". Porter (1992: 17) also recommended that corporations "seek long-term owners and give them a direct voice in governance" (ie. relationship investors) and to "nominate significant owners, customers, suppliers, employees, and community representatives to the board of directors".

All these recommendations would help establish the sort of business alliances, trade related networks and strategic associations which Hollingsworth & Lindberg (1985) noted had not evolved as much in the US as they had in continental Europe and Japan. In other words, Porter is suggesting that competitiveness can be improved by using all four institutional modes for governing transactions rather than just markets and hierarchy. This supports the need to expand the theory of the firm as outlined by Turnbull (1994a) as indicated in Table 5.

However, the recommendations of Porter to have various stakeholder constituencies appoint representatives to a unitary board would be counter-productive for the reasons identified by Williamson (1985: 300), Guthrie & Turnbull (1995) and Turnbull (1994c; 1995e). Williamson (1985: 308) states: "Membership of the board, if it occurs at all, should be restricted to informational participation". Such information participation is provided for in Table 3, which is achieved in Japan through a Keiretsu Council and in continental Europe through works councils and supervisory boards. These examples provide the model for establishing "stakeholder councils" as described by Guthrie & Turnbull (1995) and Turnbull (1994d; 1997c,e, f) as outlined in Table 3.

Hill & Jones (1992) have built on the work of Jensen & Meckling (1976) to recognise both the implicit and explicit contractual relationships in a firm to develop "Stakeholder–Agency Theory". The interdependence between a firm and its strategic stakeholders is recognised by the American Law Institute (1992). The Institute states: "The modern corporation by its nature creates interdependences with a variety of groups with whom the corporation has a legitimate concern, such as employee, customers, suppliers, and members of the communities in which the corporation operates".

Both stakeholder voice and ownership, as suggested by Porter and Blair, could be provided by "re-inventing" the concept of a firm as proposed by Turnbull (1973, 1975a, 1991a, 1994d, 1997f). This proposal is based on tax incentives providing higher short-term profits to investors in exchange for them gradually relinquishing their property rights in favour of strategic stakeholders. Control of the firm is likewise shared between investors and stakeholders through a compound board to remove conflicts of interest and so agency costs in a manner similar to that found in continental Europe and especially in Mondragón.

4. The political model

The political model recognises that the allocation of corporate power, privileges and profits between owners, managers and other stakeholders is determined by how governments favour their various constituencies. The ability of corporate stakeholders to influence allocations between themselves at the micro level is subject to the macro framework, which is interactively subjected to the influence of the corporate sector.

According to Hawley & Williams (1996: 29): "the political model of corporate governance has had immense influence on corporate governance developments in the last five to seven years". However, Hawley & Williams focus their discussion only on the micro aspects of how shareholders can influence firms. Firms have also been influential in moulding the US political/legal/regulatory system over the last few centuries. According to Justice Felix Frankfurter of the US Supreme Court, the history of US constitutional law is "the history of the impact of the modern corporation upon the American scene", quoted in Miller (1968: 1).

Roe (1994) provides an elaboration of the historical evolution of the political model and like Black (1990) and others, argues that the finance model's nearly exclusive reliance on the market for corporate control, was primarily the result of the political traditions of federalism/decentralisation dating back to the American Revolution. However, these traditions have been subject to substantial changes.

After the Revolution, there was concern that newly won political freedoms could be lost through foreigners gaining control of corporations (Grossman & Adams 1993: 6). As a result, all corporate charters were limited to a life of 50 years or less up until after the Civil War. Nor did these charters provide limited liability for the owners. Most states adopted a ten-year sunset clause for bank charters and sometimes they were as short as three years. "Early state legislators wrote charter laws and actual charters to limit corporate authority, and to ensure that when a corporation caused harm, they could revoke the charter" (p.1).

However, “During the late 19th century, corporations subverted state governments” (p.1) and according to Friedman (1973: 456), corporations “bought and sold governments”.

In 1886 the US Supreme Court ruled that a private corporation was a natural person under the US constitution, sheltered by the Bill of Rights and the 14th Amendment. “Led by New Jersey and Delaware, legislators watered down or removed citizen authority clauses. They limited the liability of corporate owners and managers, then started handing out charters that literally lasted forever” (Grossman & Adams 1993: 21). “Political power began flowing to absentee owners intent upon dominating people and nature” (p.15). Grossman & Adams (1993: 26) went on to say “No Corporation should exist forever”.

As a reaction to the corporate power extant at the end of the 19th century, a number US States introduced cumulative voting to allow minority interests to elect directors (Gordon 1993). Gordon describes how this initiative was subverted by competition between states to attract corporate registrations or what Nader, Green & Seligman (1976: 44) describes as “chartermongering”. Monks (1996) describes this as “the race to the bottom” and explains how contemporary corporations are influencing the determination of accounting and legal doctrines and promoting a management friendly political/legal/regulatory environment. Monks (1996) states that “The hegemony of the BRT (Business Round Table) is not a sustainable basis for corporate governance in America”.

During the beginning of the 20th century, at the federal level, laws were introduced in the US to limit bank ownership of corporations and related party transactions between corporations. This forced both the pattern of ownership and control of US firms and the pattern of trading relationships to diverge from that found in continental Europe and Japan. Kester (1992) describes the latter patterns as "contractual governance" as analysed by Coase and Williamson while limiting the term corporate governance to the problem of co-ordination and control as analysed by Jensen & Meckling (1976) and Berle & Means (1932).

Hawley & Williams (1996: 29) focused on the micro level of the political model as articulated by Gundfest (1990) and Pound. Pound (1993b) defined the "political model of governance" as an approach, "... in which active investors seek to change corporate policy by developing voting support from dispersed shareholders, rather than by simply purchasing voting power or control...". Pound (1992: 83) states: "this new form of governance based on politics rather than finance will provide a means of oversight that is both far more effective and far less expensive than the takeovers of the 1980's".

Gundfest (1993) points out that "an understanding of the political marketplace is essential to appreciate the role that capital-market mechanisms can... play in corporate governance". For example, Gordon & Pound (1991) showed that corporations with fewer anti-takeover provisions in their constitutions out performed those with anti-takeover measures in place.

While the political form of governance is new to many US scholars, the importance of "political procedures" (Jensen & Meckling 1979: 481) have been recognised in worker-governed firms by Bernstein (1980), Turnbull (1978a: 100), and many others, including stakeholder-controlled firms (Turnbull 1995d).

While recognising the cultural and contextual contingencies of the US system, the current political model focuses on contemporary issues such as the US proclivity for market liquidity over institutional control (Coffee 1991). The political model is also concerned with the related issue of trading off investor voice to investment exit, and institutional agents monitoring corporate agent, ie. *Watching the Watchers* (Monks & Minow 1996). All these issues are influenced by government laws and regulations and so subject of public policy debate for changes and reform. Black & Coffee (1993) state that:

> According to a new 'political' theory of corporate governance, financial institutions in the U.S. are not naturally apathetic, but rather have been regulated into submission by legal rules that—sometimes intentionally, sometimes inadvertently—hobble American institutions and raise the costs of participation in corporate governance.

Bhide (1994) develops details of this position. Hawley & Williams (1996: 32) state:

> The political model of corporate governance (whether Pound's or Gundfest's version) places severe limits on the traditional economic analysis of the corporate governance problem, and locates the performance-governance issue squarely in a broader political context. Political does not mean necessarily imply a government role, merely that it is non-market.

In other words, the analysis of economists needs to be truncated and integrated into the insights of Ben-Porath (1978) and Hollingsworth & Lindberg (1985) to understand how both economic transactions and their coordinating institutions are governed. An aspect also neglected by economists is that national income can be distributed without work or welfare by spreading corporate ownership directly to individuals rather than through institutional intermediaries (Kelso & Adler 1958; Kelso & Hetter 1967, 1986; Turnbull 1975a, 1988, 1991b, 1994b).

5. Emerging political issues

On the suggestion of Louis Kelso, Senator Russell Long began introducing tax and other incentives into the US Congress from 1974 onwards to promote universal share ownership. Largely as a result of these incentives, "of the approximately 7,000 companies listed on American stock exchanges, about 1,000 firms are at least 10% employee held" (Tseo, 1996: 66). Blasi (1988) documents the growing spread and size of employee ownership in both private and publicly traded companies in the US. Ironically, the extent of employee ownership in publicly traded firms in Russia is higher (Blasi & Gasaway 1993). "In 1988, more than 90% of all firms listed on Japanese stock markets had an ESOP" (Jones & Kato 1993). The Confederation of British Industry (CBI 1990: 7) found that "60 fund managers could determine the ownership of British companies" and concluded, "concentration of power in any democracy is to be discouraged".

Without universal individual ownership, problems arise from "universal owners" as pointed out by Monks (1996). A 'universal owner' is an institution, which effectively owns a small proportion of the entire economy. The raises the problem of the same owners participating in the governance of competing firms. It also raises the possibility that universal owners may seek to maximise profits in their corporations through transferring the costs of maintaining the environment, education and health care to the taxpayers whom they also represent.

Universal ownership avoids the problems of universal owners. There is also much evidence that ownership by individual stakeholders can improve performance (Turnbull 1997g,h). Corporate governance scholars such as Blair (1995), Monks (1996), Porter (1992), and Denham & Porter (1995) support employee ownership, in particular. Porter (1992) recommended that all strategic stakeholders participate in ownership and control. Turnbull (1973, 1975a, 1991a, 1994d, 1997g,h) describes alternative mechanisms to those proposed by Kelso for achieving this objective to promote what Porter refers to as 'expanded ownership'. Turnbull (1993a,b; 1994c; 1997e,g,h) describes how Porter's proposals could be implemented to provide operating advantages and a basis for improving corporate self-governance.

Other ways of analysing corporate governance

There are other models of corporate governance based on culture, power and cybernetics. A synthesis of all models may be required if we are to efficiently develop, construct, test and implement new approaches.

1. Culture

Hollingsworth, Schmitter & Streeck (1994: 6) provide an example of a cultural perspective:

> ...transactions are conducted on the basis of mutual trust and confidence sustained by stable, preferential, particularistic, mutually obligated, and legally non–enforceable relationships. They may be kept together either by value consensus or resource dependency—that is, through 'culture' and 'community' - or through dominant units imposing dependence on others.

This statement was made in the context of transactions being governed by networks at the "mesolevel (eg. The intermediate location between the micro-level of the firm and the macro-level of the whole economy)" rather than of the firm (p.9). However, it is also relevant within firms, and in this way it would subsume elements of the stewardship model.

Porta, Lopez-de-Silanes, Shleifer, & Vishny, (1997) found that the type of dominant religion in a culture can affect trust and hence the ability of strangers in large organizations to co-operate. In particular, they found that trust in large organisations *increases* as the proportion of the population involved in hierarchical religions, like Catholicism, *decreases*.

While Japan showed an above average degree of trust is was not as high as Nordic countries and China. Some scholars have speculated that the Japanese commitment to employee participation and the forming of strategic alliances between firms arises from their embedded belief in the inter-dependency of their many Gods. It might be interesting to research if Christian economists and managers, or other types of monotheists have an embedded belief in hierarchies rather than alliances and networks.

Williamson (1975: 38) noted the shortcomings of economic analysis in neglecting "the exchange process itself as an object of value". He identified the concept of 'atmosphere' to "raise such systems issues: supplying a satisfying exchange relation is made part of the economic problem, broadly construed". However, this insight is not mentioned or used in Williamson (1985) or in many of his later writings.

The need to consider the cultural context or 'atmosphere' of transactions within and between firms has been analysed by Maruyama (1991). Mondragón illustrates the importance of culture as it provides "an environment where there is no perceived threat of opportunism, even from opportunists!" to use the words of Ghoshal and Moran (1996: 26) in another context. "Mondragón makes it clear that market or planning decisions are value decisions" (Morrison 1991: 98). This is seen as an advantage by economists, Bradley & Gelb (1983: 30), from the World Bank. They favourably compare Mondragón with the "enriched employment relationship extending far beyond the cash nexus" of Japanese firms and X-inefficiency (Leibenstein, 1987) found with "Western" practices.

The importance of culture is evident from the view in Mondragón that social adaptability is the most critical condition in converting a firm owned by an entrepreneur to a co-operative (Whyte & Whyte (1988: 86). "Mondragón is unlikely to undertake a conversion if the prospects of resocializing managers and workers appear poor." In this regard, the Catholic influence in Mondragón is at odds with the findings of Porta et al. (1997). Morrison (1991: 111) quotes the founder of Mondragón, Father Arizmendi as saying: "A company cannot and must not lose any of its efficiency just because human values are considered more important than purely economic or material resources within the company; on the contrary such a consideration should help efficiency and quality".

Contrary to the concerns of Ghoshal & Moran, Williamson (1979: 104) accepted that trust could transcend opportunism when he stated:

> Additional transactions-specific savings can accrue at the interface between supplier and buyer as contracts are successively adapted to unfolding events, and as periodic contract-renewal agreements are reached. Familiarity here permits communication economies to be realised: specialised language develops as experience accumulates and nuances are signalled and received in a sensitive way. Both institutional and personal trust relations evolve.

The reference to "communication economies" supports the use of TBA and the need to integrate culture into the research calculus of firm structure and performance as undertaken by Berger (1976) in evaluating economic development.

2. The power perspective of corporate governance,

The explicit use of power seems to be neglected topic. Without the power to act there is little use in providing either directors or shareholders with the information to act. However, corporate governance reformers and policy makers who focus on issues of transparency and accountability commonly overlook this. For any stakeholder to protect their own interest, or that of any others, they need four simultaneous conditions: (i) the information to act, (ii) the will to act, (iii) the power to act, and (iv) the capability to act.

A legal scholar, Lynne Dallas (1988: 29) has developed an explicit power theory of the firm as outlined in Table 6. Dallas points out that "under the efficiency model, the firm is conceived as a "nexus of contracts" and so disappears as an actor, making questions as to 'corporate' responsibility meaningless" (Dallas 1988: 28), refer to line 1 of the Table. Also, describing managers, as "agents" is inappropriate as legally directors are "principles" who are the "dominant coalition members" as noted in line 2 of the Table. In line 3 of the Table, firm objectives are to increase the power and autonomy of the managers. This of course depends upon achieving some minimum level of profits as required by the efficiency model.

{INSERT TABLE 6 ABOUT HERE}

Efficiency and power models of the firm

Whereas economists assume that the structure and behaviour of firms is determined by market forces, the power theory of the firm sees their structure and behaviour determined by management seeking greater power and security by introducing “poison pill” “shark repellent”, etc, to repel market competition for their position of power. The efficiency model of a firm considers that directors are contracted by shareholders to act as monitors for the shareholders to select, direct and control managers as set out in line 6 of the Table. The power model sees directors being co-opted by managers, because of the superior information, to coop them to make them a “tool” of an internal power coalition.

The power of shareholders to act is part of the political model of corporate governance. Hawley & Williams (1996:57-60) identify various inhibitions on the power of shareholders to act arising from security laws, agenda setting by management at general meetings, proxy procedures, voting arrangements and the corporate by-laws.

The power of directors to control management is dependent upon there being a sufficient number of directors who also have the knowledge and will to act to form a board majority. Even if independent directors have the knowledge to act, they may not have the will and power to act because they are loyal or obligated to management and/or hold their board position at the grace and favour of management. Directors are unlikely to act against management unless they are supported by shareholders. However, many institutional shareholders lack the will to act. This was found to be a major problem for US firms in a report into their competitiveness by Regan (1993). Hawley & Williams (1996: 65) noted that management controlled "the information that does reach the board. The result can be a board knowing too little, too late and, even if it is willing to act to confront a growing problem or crisis, it is often unable to do so".

An appropriate separation of powers to create checks and balances provides a way to increase the welfare of stakeholders according to Persson, Roland & Tabillini (1996). Persson, Roland & Tabillini make the point that negative welfare may result if the division of power is not "appropriate". Suggestions for an appropriate division of power has been made by Bernstein (1980), Dallas (1998) and Turnbull (1978a: 100; 1992; 1993b; 1994c, 1998a) and as indicated by Table 3.

The basis for suggesting that Table 3 illustrates an appropriate division of power is that it provides governors of productive activities with the information, will, power and capability to act. Information to act, independent of management, is provided by the stakeholder councils who have access to inside, expert committed sources. The will to act is provided by electing directors through proportional or "cumulative voting" (Bhagat & Brickley 1984: Gordon 1993) to provide at least some of them representing minority interests with the "will to act" (Regan 1993). Members of what Australian Senator Murray (1998) describes as a "Corporate Governance Board" (CGB) have the will to act because they are elected on the basis of one vote per shareholder instead of one vote per share. The corporate charter provides the CGB the power to act by being able to veto any of activities in which the directors have a conflict of interest such as those listed in Table 2. The CGB gives minority of directors the capability to act even if the company is controlled by a parent company. However, a CGB does not "abrogates the property rights of investors" (Pejovich 1990: 69–71) because the directors can always seek to reverse a CGB veto by obtaining the approval of shareholders voting on the basis of one vote per share. However, the sunlight introduced by disclosing both sides of different viewpoints would inhibit the more extravagant exploitation of minority interests.

All suggestions for reform of corporate governance processes need to consider the power of agents to act, or be subject to a veto, when there is a compound board. Pound (1993a) makes the points: "always have an opposition view" and "there must be an opposition party and the prospect of insurgency". However, Pound does not consider the principle of a division of power in his political model of corporate governance, even though he participated as co-chair of the shareholders' committee established at USX (Formerly US Steel) for this purpose (Pound 1992). While the power model of the firm may be but a part of the political model, it should never be neglected because without the power to take corrective action, no action can take place.

For any action to be appropriate, the actors also need information which is accurate, timely, sufficient and yet manageable. While Pound (1993a) talks about "feedback" it is from institutional investors who do not, cannot, and should not, have specific inside expert information. This leads us to consider the cybernetic approach to corporate governance.

3. Cybernetic analysis

Cybernetic is the science of information and control and so provides a rigorous basis for grounding the study of corporate governance. As control is dependent upon power, a cybernetic investigation uses the power model of a firm.

Cybernetics is based on the mathematics of information theory where the basic unit of analysis is described as a 'bit'. A bit can be thought of as a letter in a language with eight bits creating what can be considered to be word, described as 'byte'. The ability of computers to store, process or transmit information is measured in thousands or millions of bytes described respectively as kilobytes and megabytes.

Like computers, humans have physical limitations on their ability to receive, store, process and transmit information as indicated in some respects by Table 4. Williamson (1979: 99) recognised that "the efficient processing of information is an important and related concept" to transaction costs and stated in note 4, "but for the limited ability of human agents to receive, store, retrieve, and process data, interesting economic problems vanish". Wearing (1973) observed that an individual has "limited information processing capacity so prefers slow rates of change, ie. Nearly stable systems," and "reduces, condenses, summarises (and thus necessarily loses) information, in addition, an 'imperfect' communications network in the environment also restricts and attenuates the flow of information".

Another reason for economising information is to reduce the problem of 'bounded rationality' which refers to human behaviour that is "*intendedly* rational but only *limitedly* so" (Simon, 1961: xxiv). According to Williamson (1975: 21), "Bounded rationality involves neurophysiological limits on the one hand (refer to Table 4) and language limits on the other". Williamson (1975: 45–6) notes that "a change in organisational structure may be indicated" when individuals are exposed to information overload. This provides a fundamental design criteria for TBA, not present in TCE.

To undertake tasks, which exceed the capacity of one computer, two or more computers can be connected together in the same way humans solve more demanding tasks by working in teams, groups, alliances and networks. Cybernetics considerations cannot be ignored in understanding or designing teams, divisions, the need for one or more boards and their structure, or the architecture of external alliances with stakeholders.

The cybernetic perspective provides a basis for evaluating the integrity of corporate governance information and control systems from a number of aspects. Von Neumann & Morgenstern (1953) showed how errors in processing information with unreliable components can be reduced as much as required by employing sufficient plurality in the number of computational components which in the context of corporate governance could be individuals or boards. Shannon, another founder of information theory, investigated the integrity of information channels. Shannon (1949) showed that reliable information could be obtained from unreliable channels if they are used in parallel. In other words, boards need to obtain information from strategic stakeholders as well as from management to avoid bias, distortion or errors as discussed by Turnbull (1993a; 1997d,e,h; 1998a). Downs

1967: 116–118), Williamson (1975: 122), and Demb & Neubauer (1992b) have reported the errors and distortions in management hierarchies.

Another important insight of cybernetics is the 'law of requisite variety' which states that to manage any variables an organisation must have matching responses. In other words, complexity can only be managed through complexity (Ashby 1968: 202). Complex organisations, and/or those operating in a complex dynamic environment require complex control systems. This can be achieved through the use of a compound board and/or a network of firms (Craven, Piercy & Shipp, 1996) and/or by involving strategic stakeholders in the governance of a firm as proposed by Blair (1995), Fukao (1995), Porter (1992) and Turnbull (1994d;1995a,b,e;1997d,e,g,h; 1998a).

The cybernetic concept of 'feedback' is a condition precedent for self-regulation or self-governance (Ashby 1968: 53). If a firm is not to adversely affect its stakeholders through its “actions or inactions” (Donaldson & Preston 1995) it will require governance processes which allow its stakeholders to participate in establishing performance standards. Such arrangements are commonly established in quality assurance programs. However, for stakeholders to have the will to act, they need a power base independent of management to protect them from being treated as whistle blowers.

Independently elected Stakeholder Councils would represent the “opposition party” sought by Pound (1993a). As strategic stakeholders would possess inside, expert information, they provide a way to inform management and their monitors, of any operational shortcomings as sought by Pound. The design of such arrangements would require the use of both the power and cybernetic perspective of corporate governance. Guthrie & Turnbull (1995) and Turnbull (1997d,e,h; 1998a) and Table 3 provide an example of this approach.

Research opportunities

1. Limited life.

The governance implications of limited life corporate shares and limited life firms are a neglected area. The periodic review of managers by owners is an intrinsic feature of firms, which have limited life charters as commonly exist in joint ventures and in limited liability partnerships. In the US, limited liability partnerships are formed for six years. They are commonly used for Research & Development syndication, property development joint ventures, theatrical and other types of media financing. Longer term limited life enterprises are frequently formed with international joint ventures, especially those in former socialist economies.

The need to periodically establish a successor organisation allows all contractual arrangements to be re-negotiated. In this way management is made accountable in a similar fashion to those subject to a take-over of a publicly traded enterprise. Dispersed ownership in this situation increases rather than decreases the bargaining power of owners in the same way it does for creditors as investigated by Gertner & Scharfstein (1991) and Bolton & Scharfstein (1996). If the owners do not have confidence in management they need not reinvest their money. This forces managers to provide both adequate information and cash distributions to retain investor confidence.

Limited life equities and firms were the rule rather than the exception up until the middle of the last century, except in England where a few hundred firms obtained charters with the rights of perpetual succession (Turnbull 1997c; 1998b). Limited life firms have particular value when the business is not large enough to have its shares publicly traded. The need to periodically re-recapitalise the firm provides liquidity and so an exit opportunity for investors. It also provides a programmed exit for firms with declining business as sought by Jensen (1993: 847). There appears to be little research into this topic.

2. Worker ownership and control

Researchers from Anglo cultures have not only neglected the study of corporate governance found in other cultures but also the governance of firms in their own cultures which do not have publicly traded securities. These include worker-controlled firms. While employee controlled firms may not contribute significant value to modern economies, closed or private corporations add more value to their host economy than publicly traded firms do.

As noted earlier, employees are becoming the largest voting block in many US publicly traded corporations. The same situation is developing in Australia (Turnbull 1997b). While firms which are 100% employee owned and controlled may have small practical significance, the influence of employee ownership is steadily increasing and it raise two important issues for developing a theory of organisations.

Firstly, the four temporary and eight permanent assumptions of agency theory (Jensen & Meckling 1976) lose relevance. All 'agents' are also 'principals', so there is little or no separation of ownership and control.

Secondly, no worker-controlled firm in an international survey undertaken by Bernstein (1980) had a unitary board, even if this was the dominant form in its host culture. According to Jensen & Meckling (1979), “We do not have a theory that will tell us how supervisory boards will behave”. Research is required to discover if the increased conflicts of interests created in a unitary board with employee ownership provides the reason why such firms do not survive. Research is also required to investigate the relevance of the power, cybernetic or other perspective in explaining the operations of firms which are employee owned or influenced.

3. *Compound boards*

The existence of two or more boards is not only of interest to employee owned firms but in understanding corporate governance in continental Europe where two or three boards may be required by law. Members of the European Union may adopt similar laws, so this topic has immediate practical interest.

Many publicly traded Asian firms are family controlled (Tricker 1994) and so are governed by a compound board as are firms controlled by venture capital funds and Leveraged Buy Out (LBO) Associations. Evidence 'that LBOs are efficient organizations' is cited by Shleifer & Vishny (1996: 45) while Jensen (1993: 869) states:

> 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 pre-eminent examples of active investors in recent US 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).

The theoretical significance of compound boards is currently being overlooked in an analogous way as Multi-divisional (M) form firms were overlooked by scholars for over 30 years until analysed by Chandler (1962: 382–3). Compound boards permit decomposition in information processing and decision making in a similar way to firms which change from a Unitary (U) form structure to M form.

While a number of empirical surveys document the existence and operations of two or more tiered boards (Analytica 1992; Charkham 1994; Fukao 1995; Francis 1997), little analytical attention has been given to them except by Bernstein (1980); Tricker (1980); Hatherly

(1994); Guthrie & Turnbull (1995), Turnbull (1993a,b; 1994c,d; 1995a,b,c,d,e; 1998a; 199a) and Bancaire (1996). Jensen (1993: 863) states "The reasons for the failure of the [unitary] board are not completely understood".

While Williamson (1985: 302) and Pejovich (1990: 69–71) note the existence of co-determination in Germany, only Pejovich provides some cursory analysis. He asserts that co-determination must increase rather than decrease the cost of funds because the participation of labour in the control of corporations "abrogates the property rights of investors". This is the issue taken up by Sternberg (1996).

However, the assertion of Pejovich is inconsistent with the analysis by Persson, Roland & Tabellini (1996) who pioneered the first formal theoretical framework for analysing the separation of powers in the context of political institutions. The need for the separation of powers in corporate boards has also been noted by Tricker (1980; 1994:6, 45-6, 75, 78, 156, 247-8) and Hatherly (1994). The writer has proven the ability of two tiered boards to reduce the cost of equity in two start up enterprises. In the second venture, a "Corporate Senate" was established as a shareholder watchdog committee as reported by Guthrie & Turnbull (1995), Monks & Minow (1995: 317), Renton (1994: 36) and Tricker (1996: 75–6) and Turnbull (1993b; 1998a). Much more empirical research is required into these issues.

4. Information theory

Stafford Beer (1959; 1966a; 1966b; 1979; 1981; 1985) has been a prolific writer as the founder of management cybernetics and a proponent of using cybernetics in economic management. However, Beer advised the author in 1996 that to his knowledge, information theory had not been applied to evaluate corporate governance or the operations of compound boards. The utilisation of information theory in the theory of the firm arises because transaction costs are largely, if not entirely, made up of information.

Firms exist because of the cost of "discovering what the relevant prices are" (Coase 1937). By economising information, costs are economised. However, while costs are a social construct, information must always be represented in some way, which can be physically detected and measured. As a physical manifestation, all information processing, storage, and transmission is subject to the laws of physics. Transaction costs, and economics in general, are not so constrained as they are based on the social construct of cost. The distinction between fixed and variable costs of any transaction can be very subjective. In addition, costs are based on the social constructs of money and value which are not now defined in terms of physical units.

The use of physical units such as bits or bytes in the analysis of organisations provide a way for developing a science of organisation, which is based on the laws of nature rather than social constructs subject to cultural and other interpretations. Bits or bytes provide a way "for observing the phenomena at a higher level of resolution" as sought by Williamson (1990: xi). Williamson (1991: 12) later went on to say:

> There is growing agreement, moreover, with the need to engage data of a much more micro-analytic kind than was hitherto thought to be necessary. Indeed, there is reason to believe that the elusive 'science of organization' to which Chester Barnard made reference fifty years ago (1938: 290) may take shape during the 1990s.

As the cost of organising economic transactions is based on the volume of information required, then transaction costs are economised by economising information. The need to consider “information richness” in organisational design has already been considered by organisational theorists such as Daft & Lengel (1984). The capacity of communication channels needs to match the information richness required to govern productive activities. Markets are efficient because price is not information rich and very narrow communications channels can be used. However, markets fail because price signals are not sufficiently information rich to communicate the qualitative aspects governing a transaction.

From a cybernetic perspective, TCE becomes a special case of TBA when costs are relevant. Costs have little relevance in boardroom transactions. Transactions costs are minimised when the information required to activate or reject a transaction are minimised. Minimising bits rather than costs allows many of the findings of TCE to be extended to transactions and institutional arrangements where cost may not be relevant or less important, such as in quality assurance programs, non-profit organisations and social institutions in general. In this way, TBA can be used to integrate the viewpoints of other theories and disciplines to provide a common framework, which was noted was missing by Radner (1992), Demb and Neubauer (1992a). TBA provides a basis for analysing compound boards as sought by Jensen & Meckling (1979: 503) and demonstrated by Turnbull (1999a) but much more work needs to be undertaken.

5. Networks

There is a substantial literature on the design of organisations, but it is based on the assumption that they are ultimately centrally controlled. There exists the need to understand decentralised organisations, which are accountable to a number of separate constituencies. For example, Galbraith (1973), Egelhoff, (1982, 1988), Daft and Lengel, (1984) focussed on the idea that organisational structures develop to fit information processing needs. This approach needs to be extended to entertain decentralised organisations and networks of firms.

As a network or association of firms may itself be considered a firm (Mathews 1996b: 116), or "as organizational wholes" (Richter 1994: 24), there is a need to consider the architecture of networks in the same way theorists have analysed the structure of firms. When a compound board is created within a firm it represents a network of information processing and control centres. Networks can then exist both on an intra-firm basis and on an inter-firm basis. Both exist together in Mondragón and both types of networks need investigating to understand how they may best be used.

The ownership and control structure of firms has been extensively analysed by such scholars as Grossman & Hart (1982; 1986), Hart & Moore (1990), Hart (1993; 1995) and Williamson (1975; 1985). But in the traditions of US research, their work assumed organisations were centrally controlled through a unitary board. Investment risks of related parties could be significantly modified by ownership and control structures, which utilised compound boards to share and manage risk. There is a need to re-visit existing work from the network perspective of Craven, Piercy & Shipp (1996).

6. Holonic structures

Holons represent an organisational structure identified by Smuts (1926). They have intriguing characteristics, which suggest that they could make a contribution in understanding the most efficient way of governing complex productive activities. This suggests they deserve investigation in regards to firms, networks of firms, communities, and the governance of society at higher levels.

Simon (1962) describes what Smuts called holons, as “sub-assemblies“ or “stable intermediate forms” to create “nearly decomposable systems, in which the interactions among the sub-systems are weak, but not negligible”. Examples of weak holons are divisions in a “M-form“ firm, “autonomous manufacturing cells” (Mathews 1996a), and firms as a “hierarchy of teams” (Conti & Warner 1996). Mondragón firms, groups, and system, illustrate both a strong holonic structure and a hierarchy of holons described by Koestler (1967) as a “holarchy”. They are a strong form, because the component firms and groups ("sub-assemblies") can exist independently of the whole ('hol'), ie. "able to maintain a separate existence" to represent a "viable system" (Beer 1985: 1).

Williamson (1985: 281) uses an "information processing interpretation" to explain the operating advantages of the M type of architecture. The same advantages arise in holons because "the reduction in data transmission, and in data complexity, achieved by the holonic architecture, is prodigious," (Mathews 1996a: 30). Both this insight and that of Williamson (1975: 21) concerning the "neurological limits" of individuals provide a basis for understanding how compound boards, networks of firms or organisations, and alliances, can provide operating advantages.

There are many examples in computer programming where the efficient management of complexity is achieved through holonic architecture as cited by Mathews (1996a) and described as "ultra-structure" by Long & Denning (1995). Williamson (1985:383) noted that "the problem of organization is precisely one of decomposing the entire enterprise in efficient information processing aspects". Holonic architecture provides a way to introduce efficient decomposition to allow ordinary people to achieve extraordinary results as demonstrated by Mondragón by Turnbull (1995d).

Coase (1937) noted that firms exist because markets fail to efficiently communicate information. Ashby (1960) pointed out that, "prices represent second order information" dependent on first order qualitative description of what is being transacted. Prices may also represent inefficient communications because they may lack credibility as analysed by

Akerlof (1970). These considerations explain the advantages of using non-market methods for governing transactions as identified by Hollingsworth & Lindberg (1985). The introduction of holonic organisations may provide a way to increase the efficiency of governing productive activities by reducing transaction costs and costs arising from 'bounded rationality'. Inceasing the informational efficiency of organisations would reduce the role and so need for markets.

7. Self-regulation and self-governance

The theory and practice of self-regulation and self-governance has been used since governors were used in the 19th century to control the speed of steam engines. However, little of this knowledge appears to have been researched, let alone applied to social institutions or to the role of government. The Vice President of the US suggested that the reason for this gap in the application of knowledge of the 'information age' is that only nine of the 535 members of Congress have any professional education in technology (Gore 1996). Another reason could be that social scientists are not sufficiently familiar with the theory and practice of self-regulation to understand why it cannot work with the dominant form of institutions in advanced economies. This dominant form is based on centralised information and control without checks and balances, self-correcting feedback information and control channels to allow self-governance.

Ignorance in the theory and practice of self-regulation is so widespread among social commentators and scientists that they assert that it cannot work for institutions in a market economy. Ironically, many of the same people support a market system because they believe that it is self-regulating. Design guidelines for establishing a "self-managing self-correcting power structure", without markets, for Aboriginal firms are suggested by Turnbull (1978a: 100).

The need for government bureaucracies to intercede as corporate regulators arises because those adversely affected by a firm may not have the information, will, power and capability to correct the problem. Stakeholder participation in governance provides a way of reducing this deficiency. If the interests of the participating stakeholders are not sufficiently wide to reflect the concerns of the host society, some government interventions will still be required. However, stakeholder participation may also be required in government bureaucracies to allow policies to be mediated to suit local conditions and performance standards established and evaluated by those affected (Turnbull 1994d, 1995b).

There are arguments and evidence to suggest that self-regulation and self-governance provide operating advantages for social institutions generally and competitive advantages for firms (Turnbull 1997d,e; 1999a,b). This is a topic, which requires much more investigation and research.

Concluding remarks

Sociologists have identified four distinctive institutional processes for governing productive activities. Economic theories of the firm based on only markets and hierarchy provide a limited basis for understanding corporate governance. However, by re-interpreting theories of the firm, based on minimising transaction *information* rather than transaction *costs*, many insights developed by economists can be applied to governance processes.

TBA has the advantage of providing a common unit of analysis to (i) integrate the various disciplines involved with corporate governance, (ii) ground corporate governance in the knowledge of pure and applied sciences, and (iii) allow the mathematical rigour of information theory to provide a basis for establishing a science of organisation. Corporate governance might then develop as a part of a more general theory of social construction. This should offer practical benefits for improving the design of social institutions in the private or public sector, be they for profit or for welfare.

To this end, corporate governance scholars would need to accept the possibility of people behaving both as opportunistic self-serving agents and selfless stewards. No one theory or model of society is likely to be sufficient for understanding, evaluating or designing governance structures. There are many pieces to the puzzle, which this paper has tried to encompass. If there is a lesson to consider, it is that reliance on just one perspective is unlikely to be rewarding in practical terms for improving corporate governance systems. An interdisciplinary holistic approach is required.

The complexity of the universe is created through holonic structures, which create the means for living things to manage complexity. The survival of civilisation may be dependent upon society adopting the governances systems of nature. The ability of holonic structures to introduce a prodigious reduction in information processing indicates that they could present a way to govern society with far less reliance on the second order information communicated by markets.

Prices are dependent on first order information, which describes the qualitative aspects of the goods and services being exchanged. Markets are also dependent upon knowledge of the terms and conditions of the exchange and the trustworthiness of the parties involved in the exchange. Coase (1937) explained firms exist because markets fail to efficiently provide the necessary information to minimise costs. TBA provides a corollary that a market exists only to the extent that social institutions do not adopt the most effective mix and structure of alternate governance mechanisms. Might it be that markets exist because organisations fail to utilise holonic structures?

TBA identifies design criteria for improving governance systems at both the micro and macro level of society as well a identifying design limits. These criteria are based on the insights of cybernetics such as:

(i) minimising computational errors through using parallel decision making as identified by Von Neumann and Morgenstern (1953), ie establishing a compound board to provide "distributed intelligence",

(ii) minimising errors in communications through establishing parallel information networks (Shannon 1948), and by

(iii) applying the Principle of Subsidiary Function (Schumacher 1975: 203) so no decisions are taken at a higher level which can be carried out at a lower level by using a compound board to provide "distributed intelligence" to minimise the need for communication,

(iv) managing complexity by establishing as many control centres, through a compound board, as there are variables in accordance of Ashby's law of 'Requisite Variety',

(v) minimising 'bounded rationality' by decomposing decision making labour and "the enterprise in efficient information processing respects" (Williamson, 1985: 283) by using a compound board and/or networks to provide 'distributed intelligence',

(vi) establishing trust and efficient communications and control by minimising power differentials through using a compound board to provide a division of power with checks and balances (Perssons, Roland & Tabellini 1996),

(vii) achieving "prodigious" reduction in data transmission and data complexity, described by Mathews (1996a: 30), through establishing almost self-governing intra and inter firm information and control networks describes as "holons" (Smuts 1926), "sub-assemblies (Simon 1962) or "chaords" (Hock 1994: 1) to further objectives (i) to (vi) listed above.

Through the above principles, TBA provides a basis for grounding corporate governance, and the design of organisations generally, in scientific laws. It allows cybernetics to be utilised in a social context for improving regulation, self-regulation and governance in either the private or public sector. This offers the prospect of identifying opportunities for partially privatising state regulation to reduce the size, scope, burden and cost of government to improve the quality of democracy. It also provides design criteria for developing self-governing social institutions and systems as indicated by Turnbull (1978a: 100; 1997d,e). In this way the study of corporate governance could provide a basis for building a self-governing sustainable global society that "nature can live with" (Marston 1992).

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TABLE 1.

Influences affecting the controllers of publicly traded firms

Private sector influences	Public sector laws/regulators
Customers	Trade practices
Competitors	Anti-monopoly
Shareholders	Corporations and Securities
Corporate charter	Common law
Employees	Labour & Equal Opportunity
Unions	Arbitration courts, etc.
Suppliers	Fair trading
Bankers & financiers	Credit & bankruptcy
Auditors	Corporate
Stock Exchange rules	Federal/State/Local tax
Market for shares	Health & safety
Media	Environmental
Professional associations	Quality
Trade associations	Building
Directors & Advisers	Community

Table 2

CORRUPTING POWERS OF A UNITARY BOARD

Directors have the power to further and protect their self-interests by:

1. Transfer value from the firm to themselves through:
(a) Determining their own remuneration and payments to associates
(b) Directing business to interests associated with themselves.

2. Reduce shareholder value through:
(a) Issuing shares or options to one or more directors at discounted value
(b) Selling of assets of the firm to one or more director or their associates at a discount
(c) The firm acquiring assets from directors or their associates at an inflated value
(d) The firm trading with related parties, who can appoint the directors, on favoured terms
(e) Not allowing the firm to compete with related parties who can appoint them

3. Obtain other private benefits such as:
(a) Use resources of the firm for their own pecuniary and non-pecuniary gain
(b) Use their status and influence for pecuniary and non-pecuniary advantages.

4. Control independent advisers by:
(a) Awarding them work
(b) Negotiating their fees
(c) Determining their terms of reference to support director's interests.

5. Control or influence the auditor by:
(a) Advising shareholders on the appointment or dismissal of the auditor;
(b) Negotiating their fees:
(c) Giving them more profitable non-audit business.

6. Determine reported profit by:
(a) Selecting basis for valuing or writing off trading and fixed assets
(b) Determining the life of assets and so the cost of depreciation;
(c) Selecting basis for recognising revenues and costs in long term contracts
(d) Selecting accounting policies within accepted accounting standards
(e) Control of auditors and valuers.

7. Determine how director performance is reported by:
(a) Reporting on their own activities and deny or frustrate other reports;
(b) Controlling the auditor and other "independent" advisers
(c) Controlling the conduct of shareholder meetings.

8. Maintain their board position by:
(a) Reporting on their own performance
(b) Filling casual board vacancies with people who support their own position
(c) Nominating new directors who support them at shareholder meetings
(d) Controlling the nomination and election procedures and processes
(e) Controlling the conduct of shareholder meetings
(f) Using uncommitted proxies to vote on resolutions to protect and further their interests

Table 3

Anglo corporate governance compared with competitive practices

1	ACTIVITY	ANGLO PRACTICE	COMPETITIVE PRACTICE
2	Select, direct, control, re-munerate, & retire management	Board	Board with advice and consent of Corporate Governance Board (CGB)
3	Nominate directors	Board	Shareholders with advise of CGB
4	Appoint directors	Board	Shareholders
5	Remunerate management & directors	Board	CGB using performance indicators established by Stakeholder councils
6	Retire directors	Board	CGB with advise from Stakeholders
7	Appoint Auditor	Board	Shareholders & CGB
8	Control Auditor	Board	CGB
9	Determine accounting practices	Board	CGB
10	Evaluate business	Board	Board with advise from Stakeholders
11	Monitor management	Board	Board with advise from Stakeholders
12	Appoint specialist advisers	Board	CGB with advise from board
13	Control specialist advisers	Board	CGB
14	Remunerate CGB members	Not Applic.	Shareholders–% of dividends
15	Remunerate stakeholder reps.	Not Applic.	No remuneration

A Corporate Governance Board (CGB) is the name adopted by Senator Murray (1998) to describe a form of "watchdog board" found in Europe and introduced into Australia as a "Corporate Senate" by Turnbull (1992; 1993b, 1994c, 1998a).

Directors elected by cumulative voting (Bhagat & Brickley 1984, Gordon 1993) to provide some directors with 'the will to act' by securing their board position even if there is a parent company.

Members of the Corporate Governance Board (CGB) elected on the basis of one vote per shareholders instead of one vote per share to make members independent of any dominant shareholders.

CGB can report to shareholders independently of the board but only have power to veto board decision when a conflict of interest is present such as identified in Table 2.

Table 4

Human constraints in transacting bytes
(K= Kilobytes, M=Megabytes)

INPUT CHANNELS	Smell	Taste	Touch	Sound	Sight	CONSTRAINTS IN HUMANS TO TRANSACT BYTES CREATED BY:
Channel capacity in bytes/sec	<10	<15	<15	100K	1,000M	
NATURE OF TRANS-ACTING BYTES IN HUMANS	1	RECEPTION through organs				Physiology
	2	STORAGE through nervous system				Physiology
	3	PERCEPTION/UNDERSTANDING through the activation and strengthening of neural networks which correlate current patterns with previous ones				Physiology plus experience, training and motivation
	4	INSIGHTS/KNOWLEDGE through sequential processing in neo-cortex				As above plus size and architecture of neo-cortex and psychological status
	5	EXTERNAL RESPONSES transmitted by movement and vocal chords				Proximity/ distance, environmental conditions, culture, literacy, & numeracy
OUTPUT CHANNELS	Touch	Signs	Writ -ing	Sound	Speech	
Channel capacity in bytes/sec	<15	<15	<15	<100K	<100K	

Information is received 10,000 times greater than the rate at which it can be transmitted.

Source of channel capacity: Cochrane 1997

Table 5

Comparison between TCE and TBA boundaries of analysis

	Framework of analysis	**Coase/Williamson, et. al. (TCE)**	**TBA based on the information & control architecture (cybernetics)**
1	Type of social institution	For-profit firms not labour managed	Any social organisation, including any type of firm
2	Subject of analysis	Transactions and their costs	People and the quanta (bytes) of information they process
3	Relationship of people	Master/servant or competitive	Any. eg. family, co-operative, competitive, associative, etc.
4	People behaviour	Self-interest	Any. eg. Altruistic, self-interest, etc.
5	Objectives	Economising costs	Anything. (For firms, economising the transaction of bytes by individuals while compensating for errors with plurality of transactions)
6	Modes of governance	Markets & hierarchies and hybrids of both	Clans & communities, associations, hierarchies, & markets
7	Communication & control through:	Markets & hierarchies	Senses, semiotics, language & numbers

Table 6

Efficiency and power models of the firm
Source: Dallas (1988: 29)

	MODEL→ Item↓	EFFICIENCY(a)	POWER (b)
1	Firm	Nexus of contracts/reactive to environment	Power coalitions/proactive with respect to environment
2	Management	Agent	Dominant coalition member
3	Firm objectives	Profit maximisation; cost minimisation	Multiple inconsistent goals; increasing autonomy and discretion
4	Determinants of structure and behaviour	Competition in markets	Various sources of power
5	Management/share-holder relationship	Contract	Co-optation
6	Board of directors	"Monitoring" device	"Tool" of internal coalition

Notes:

(a) Dallas (1988: 22) describes the "efficiency model" as considering the firm as a "nexus of contracts" with directors and managers being "agents" of the shareholders, and perhaps-other constituencies, to maximise profits or minimise "transaction costs".

(b) The "power model" is describe by Dallas (1988: 39–44) as recognising the legal reality that directors are principles with only fiduciary duties to shareholders and that firms "act to decrease the uncertainty of its environment by increasing its power over, and autonomy from, its environment" (Dallas 1988: 30). These objectives being pursued at the expense of profit, although subject to a profit restraint.