ประสิทธิภาพของระบบธรรมาภิบาลบริษัทของประเทศสหรัฐอเมริกา ในการสร้างดุลยภาพเชิงเศรษฐศาสตร์: การวิเคราะห์ด้วยทฤษฎีเกม
Does the American Corporate Governance Model Contribute to Economic Optimality? A Game-Theoric Analysis

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แบบจำลองธรรมาภิบาลบริษัทของประเทศสหรัฐอเมริกามักได้รับการสรรเสริญและถูกยกเป็นตัวอย่างสำหรับประเทศอื่นสำหรับการเลียนแบบ เมื่อไม่นานมานี้ได้ปรากฏทฤษฎีธรรมาภิบาลบริษัทที่อาศัยแนวความคิดดุลยภาพของอำนาจเป็นหัวใจสำคัญ โดยทฤษฎีนี้ได้ผ่านการทดสอบและยืนยันความสอดคล้องกับผลการวิจัยอื่นๆบ่งบอกความน่าเชื่อถือ ทำให้มีความเหมาะสมนำแนวทฤษฎีดังกล่าวเพื่อสร้างเป็นแบบจำลองของปฏิสัมพันธ์ระหว่างผู้บริหารและคณะกรรมการบริษัทตามแนวทางของทฤษฎีเกมและใช้ทดสอบกับข้อมูลด้านธรรมาภิบาลบริษัทของบริษัทสหรัฐฯ ที่ได้มีการศึกษามาก่อนหน้านี้ ผลการทดสอบชี้ว่าระบบธรรมาภิบาลบริษัทของสหรัฐฯแสดงดุลยภาพที่ต่ำ

Abstract

The American model of corporate governance has been much praised and all other countries are urged to take it as the example to follow. Recent corporate governance theory that rests on the balance of power has been conceptualized and gained stronger theoretical ground. The theory, tested against and informed by available empirical studies, is used in concert with the game-theoretic approach, to construct a model of CEO and board interaction. This model is used to determine the critical property of Pareto optimality in American corporate governance. The finding tends to substantiate only the sub-optimality of the model.

Key words: corporate governance, balance of power, game theory

1. Introduction

Right after the Asian financial crisis, Alan Greenspan (1998), the then Chairman of U.S Federal Reserve Bank, Larry Summers (1998), the then Under-Secretary of Treasury, and International Monetary Fund (IMF) (1997) proposed a "Structural theory" of economic crisis in the Asian countries. They argued that the crisis may have been triggered by poor corporate governance, the poor state of competition, and the close relationship betweens, government business and banks, which were deemed as indicating crony capitalism. Based on this accusation, the IMF economists recommended changes in fundamental institutions of the crisis affected countries and the adoption of the U.S. model based on maximization of shareholder value. Singh and Zammit's study (2006) tried to indirectly invalidate this argument by pinpointing to the lack of superior performance of the U.S. model. The arguments from both sides lead us to a question: does the American model own the critical property to be considered as the foremost corporate governance system? My analysis in this paper represents one of the early attempts to show that the U.S. model does not help firms to achieve optimal economic performance.

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The balance of power in corporate governance landscape has been much mentioned by practitioners (OECD, 1999; Veasey, 2001: 2183; Lurie and Frenkel, 2003: 282) and earlier taken for granted by scholars (Jensen and Smith, 1983: 143; Finkelstein, 1992; Deakin and Hughes, 1997: 1; Williams, Fadil, and Armstrong, 2005: 479) without theoretical support. There have been some efforts to theorize the balance of power as a corporate governance determinant (Charreaux, 2004; Aguilera et al., 2007). However their conceptualizations remain too broad and vague to justify considering them as theories. Their accomplishment remains limited. The Trimiti corporate governance theory, which relies on the internal balance of power has been formulated and tested with satisfactory results (Chaithanakij, 2006a, 2006b). With the theoretical foundation of the balance-of-power, I create a game theoric model in this paper for further analysis. In this model, power is defined as the ability to get things done in spite of resistance and the ability to influence people through personal appeal and magnetism (which is termed charisma) (Krackhardt, 1990).

The mystery of corporate governance begins to reveal its theoretical roots when European economic history is scrutinized (Greif , 1994; 1996). European economic history is actually rich in historical economic governance systems that can lend theoretical ground for corporate governance. The Maghribi Traders' Coalition in the 11th century (Greif, 1994) and medieval guild associations in the 12th century (Kaufer, 1996) for example, illustrate how economic governance systems emerged and evolved. In particular Greif (1996) explains how informal contract enforcement complemented or even substituted for legal enforcements in support of economic transactions intra and inter organizations. The core concept of economic governance is found to lie in the balance of power among parties for the informal contract being respected. This finding is compatible with the studies of modern organizational economics which find the right balance of formal authority allocation and the effective control (Aghion and Tirole, 1997). An internal balance of power is indispensable for controlling opportunistic behaviors of parties in a firm (Wells, 1998; Rajan and Zingales, 1998) since the firm's employment contract has been categorized as an incomplete contract (Williamson, 1985: 306; Bratton and McCahery, 2001: 775; Rajan and Zingales, 2000: 32), much like an informal contract.

The definition of corporate governance in this paper is based on Trimiti theory (Chaithanakij, 2006a), which was adapted from Zingales (1998), and defined as "the balance of authoritative capability and control power under cultural consensus that shape the bargaining over the resource allocation and quasi-rents generated by the firm." The rest of this paper is organized as follows. Section 2 gives the reasons why corporate governance is determined by the internal balance of power, in contrast to the belief that it relies on the strengths of the market and legal institutions. Based on the theory of the firm, the game theoric model of corporate governance is created in Section 3. Evidences of corporate governance of U.S. firms are then presented and evaluated against the model in Section 4 to see how they fit into the model. The discussions and conclusion come in Section 5.

2. The internal balance of power as the determinant of corporate governance

There are a few arguments claiming that legal and market institutions are the determinants of corporate governance (La Porta et al., 1998; Jensen and Ruback, 1983) because they help in preventing conspiracy among actors inside the firm (Thiele, 2007). While there are evidences showing the effects of those institutions on corporate governance, there are several other evidences to disprove that those external institutions are sufficient determinants. Some firms in emerging economies appear to have some power to preclude expropriation of minority shareholders even if legal protection is inadequate (Mitton, 2002; Klapper and Love, 2003; Chaithanakij, 2006b). Meanwhile, several firms in the U.S. and U.K which are always considered as having strong legal institutions may have poor corporate governance (Krawiec, 2003; Anderson, and Reeb, 2004; Arcot and Bruno, 2005; Lasfer, 2006; Tirole, 2006: 16-20). Jensen and Meckling (1982) claim that three external markets— market of products, manager and

corporate control—help bring down agency cost, hence ensuring better corporate governance. However, there is too much mixed evidence on the effects of external markets as enhancers of firm efficiency to substantiate such claims (Agrawal and Jaffe, 2002; Gillan, 2006). The market competition helps remove the cosy cash cushion enjoyed by monopolists and has beneficial effects on managerial incentives, but it may also create perverse effects. Competition will thus never substitute for a proper governance structure (Tirole, 2006: 29)

Meanwhile, many arguments of law scholars strongly support the claim that corporate governance is the result of voluntary acts of internal actors (Cadbury, 1992; Veasey, 2001; Coffee, 2001; Rock and Wachter, 2001). Many provisions in country–level investor protection laws may not be binding because firms have flexibility in their corporate charters and bylaws to either choose to "opt-out" and decline specific provisions or adopt any provisions not listed in their legal code (Easterbrook and Fischel, 1991; Black and Gilson, 1998). The corporate charters usually specify the procedures for selecting directors and officers, their power and the range of decisions that they may make without consulting the stockholders in very broad terms (Milgrom and Roberts, 1992). There are some empirical evidences suggesting that private enforcement tools are often more effective than public tools. However, some public enforcement is necessary, and private enforcement mechanisms often require public laws to function (Berglöf and Claessens, 2006). In the case of the U.S., it is the legal system that poses a risk of personal liability to each individual officer and director for their actions (Colvin, 1995: 1, Smith, 2002: 455) associated with lawsuits, besides other self-governing mechanisms including norms (Veasey, 2001: 2180). Boards become a market solution for organizational design problem, an endogenously determined institution that helps to ameliorate the agency problem (Hermalin and Weisbach, 2003: 9). Helland and Sykuta (2005) found that firms that were defendants in security litigation had a higher proportion of insiders than a matched group of firms that were not sued, even when controlling for firm value and industry. Carcello et al., (2006) find that both accounting and financial expertise of audit committee under the board reduce earning management for firms with weak alternate corporate governance mechanisms. However there is no association between financial expertise with real earnings management that involve the manipulated business transactions.

3. The concept under game theoric framework

Presenting their work as a study on theory of the firm, Aghion and Tirole (1997) have shown that the firm has to balance the delegation of formal authority and control. Following this, Rajan and Zingales (1998) have proved to us that firms having one owner and one employee have to balance the access to the firm's specificity and the rent distribution. Modeling financing choices using ownership cannot provide optimal incentives since ownership affects incentives asymmetrically, and ownership can have an adverse effect in the form of over-investment. In contrast, modeling financing choices using access and ownership can provide the first best incentives, since unlike ownership, access affects incentives symmetrically. Therefore access and ownership complement each other in providing incentives to the financier and the innovator (Subramanian, 2006). This argument is supported by a previous empirical study which shows that firm performance, rewards, and the delegation of decisions are complementary components in the corporate governance system (Demers, Shackell, and Widener, 2002). I extend the framework of Rajan and Zingales (1998) to create the subjective game model (Krep, 1990) focusing on the interaction between the CEO and board of director in modern companies.

The model characterizes the balance of power between the management and the board of directors in employing firms' resources and their distribution of rent. The model is simplified to include only two parties, the CEO and the board of directors1, of which each has only two strategies and a foreseen pay-off matrix but it does recognize the cultural influences on the firm to fulfill its purpose, which appears to be shareholder value maximization in the U.S., and stakeholder satisfaction in Germany (Baums and Scott, 2003). Only the board is included in

the analysis because the board is the only monitoring body that has the legal authority to exercise the control right (Tirole, 2006: 27). The control right of boards can be exercised through their activities of active and passive monitoring. Active monitoring refers to the forward oriented activities to manage risks, prevent unconstructive activities by management, and encourage management to engage in activities that fulfill the firm's objectives. In contrast, passive monitoring represents the backward-oriented measurement of firm performance intended to determine the success and failure of the agents—the CEO and board—in fulfilling their duties, and subsequent actions in line with the circumstances2.

The ideal corporate governance system must allow the board to take the role of active monitoring: the threshold of failure is established to warn the board of possible failure ahead, to take proper action to prevent the firm following the uncorrectable cause to a total failure. The ideal model is illustrated under game theoric framework in Figure 1.

In this model, the CEO has two strategies, each of which represents different objectives, either to mainly serve the firms' purpose, x_1 or personal benefit, x_2 respectively. Board members, who are assumed to be unanimous in choosing strategies for simplicity, also have two strategies, y_1 of 'concur with CEO' and y_2 of 'not concur with CEO'. The pay-off values of *a, c, f,* and *g* denote the amount of rent taken by the CEO and *b, d, g,* and *i* taken by the board in different circumstances of strategic interaction between the two parties. The four pairs of strategies and pay-offs are the main components of the game theoric model of U.S. corporate governance. From the figure, the equilibrium of the game can reached if and only if the pair of strategies (x_1, y_1) are the optimal choices, from which the CEO and the board reap the highest value of pay-offs with amounts of a and b respectively (or $a > c, f, g$ and $b > d, g, i$) thus contributing to effective ongoing corporate governance.

Figure 1
Pay-off matrix of interactive strategies between CEO and board

		Board's action	
		Strategy y_1: concur with CEO	Strategy y_2: does not concur with CEO
CEO's action	Strategy x_1: conform to the firm's purpose	*b* *a*	*d* *c*
	Strategy x_2: Does not conform to the firm's purpose	*g* *f*	*i* *h*

Remark: this pay-off matrix has been created by the author, in compatibility with the argument of Aghion and Tirole (1997) and Rajan and Zingales (1998), to show the strategies available to the CEO (x_1, x_2) and board (y_1, y_2) and the respective pay-offs for CEO (*a, c, f, g*) and board (*b, d, g, i*) well foreseen by both parties. Corporate governance is said to exist if and only if the CEO stays with x_1 strategy whereas the board stays with y_1 strategy. Both are motivated to choose the pair of strategies, x_1 and y_1, when their respective pay-offs (*a, b*) are optimal, making the game in equilibrium. The pay-offs have to be either compatible with firm performance or consistent with the market rate, or both.

4. Corporate governance in the U.S.

4.1 The U.S. model of corporate governance

4.1a The centralization of the authoritative system

The model of American corporate governance is not identical to that of the United Kingdom, the European continent, or other countries around the world. The United States is an

extreme example of the model in which, basically, the CEO runs the company. The American society looks to the CEO for the vision, the leadership, and the ultimate management of the company (Henn and Alexander, 1983: 180-256; Khurana, 2002; Gunderson, 2003: 582). American business circles have a culture of favoring the management. The American legal system assigns significant deference to managerial discretion, while French and German law traditionally assigns significant influence to the shareholder meeting, in order to balance the managerial influence (Zetzsche, 2007: 50). It explains many managerial practices unique to U.S. firms.

The incumbent power structure, particularly in the U.S. firms, is supported by CEO duality and is favorable to CEO, relative to the board (Finkelstein, 1992; Finkelstein and D'Aveni, 1994; Dalton, Daily, Ellstrand, and Johnson, 1998; Goyal and Park, 2002; Banning, 2004). The CEO is also the board chair in about 76 percent of U.S. listed firms (Core, Holthausen, and Larcker, 1999: 383) little changedfrom 80% in 1980s (Lorsch and McIver, 1989). When firms have to make decisions on the default laws, the corporate default laws that favor management are considerably less likely to be changed by companies than default laws favoring investors (Listokin, 2006). The recent study of Le, Walters, and Kroll (2006) indicates that the independent outside directors have only indirect influence on the U.S. firms' R&D. Most major strategic decisions affecting the fate of companies are apparently left with CEOs. It is not surprising that no empirical relationship between board composition and firm performance, and board independence and CEO pay structure are found in several studies (Mehran, 1995; Bhagat and Black, 2002; Hermalin and Weisbach, 2003; Anderson and Bizjak, 2003). Under these norms and given the apparently overwhelming power of the CEO, most directors choose to side with the CEO rather than maintain their roles as the guardians of the shareholders' interests (Bebchuk and Fried, 2004). Based on these evidences, it is apparent that American norms give the CEO a relatively free hand to manage the firm, reap generous compensation, and take all the falls when the situation turns bad.

4.1b The practice of short-termism

The U.S. legal system has affirmed the importance of maximizing shareholder value (Baums and Scott, 2003), compatible with the trajectory of U.S. economy in recent decades, which can be characterized in term of a process of financialization (Krippner, 2005). Assets have been increasingly transformed into currency for exchange. The majority of financial executives view earnings indices, especially earning per share, as the key criteria for outsiders, even more than the cash flows of the firm. Because of the severe market reaction to missing an earnings target, firms are willing to sacrifice economic value to meet a short-run earnings target and maintain a smooth earnings record. Mangers make voluntary disclosures to the extent necessary to reduce informational risks associated with their stocks, trying to provide only modest evidences, enough to justify their business directions and decisions. They avoid setting a disclosure precedent that would be difficult to maintain (Graham, Harvey, and Rajgopal, 2004). Limited disclosure helps management to hide poor performance. It protects executives against dismissals or takeovers or, more generally, reduces investor interference in the managerial process (Tirole, 2006: 20). Only 11% of U.S. firms were reported to have a long-term plan (Clieaf and Kelly, 2005). Keeping their long-term plan low profile gives the management more room in maneuvering their investment decisions, including ones focusing on the less economically preferable short-term performance. In a certain business sector, the managers that fail to exploit regulatory loopholes to increase the operating margin are vulnerable to replacement (Dafny and Dranove, 2006). Short-termism appears to be the predominant objective of U.S. firms (Heiser, 2000: 71; Bratton, 2005: 7)

4.1c The motivational system

Compatible with their cultural consensus that takes the firm to be a wealth-creating instrument, American shareholders do expect the highest possible return and nothing less in exchange for generous compensation. Early empirical studies confirm the association of CEO

turnover and firm performance. These studies find that good performance3 is positively associated with CEO compensation, whereas poor performance increases the likelihood of termination or CEO turnover (Coughlan and Schmidt, 1985; Murphy, 1999, Warner et al., 1988). The overwhelming share of the increase in CEO compensation during the last two decades came not as salary but as incentive pay, whether in the form of stock options or cash bonuses triggered by performance metrics (Bratton, 2005). Though some evidences may suggest that lower governance standards of firms, greater individual investor participation, and greater stock liquidity are related to higher direct and indirect executive pay (Jiraporn, Kim and Davidson, 2006; Frieder and Subrahmanyam, 2006), the overall firm size generally explains many patterns in CEO pay. The size model tends to be robust across firms, over time and between countries suggesting that the executive compensation of the U.S. firm generally conforms to the market of executive talent (Gabaix, and Landie, 2006).

Standard economic theory predicts that corporate boards will filter out exogenous industry and market shocks to firm performance when deciding on CEO retention. But a recent empirical study posits that the CEO of a U.S. firm is more likely to be dismissed from her job after bad industry and bad market conditions (Jenter and Kanaan, 2006). Kaplan and Minton (2006) have found that during 1998 and 2005 internal turnover, which is driven by the board of directors, and its effect on performance is more strongly related to three components of firm performance – performance relative to industry, industry performance relative to the overall market, and the performance of the overall stock market regardless of the firm's governance and operating performance.

However these explicit incentives are only a part of the story. The more influential motivation of the CEO is the concern about her future. The threat of being fired by the board of directors or removed by the market for corporate control through a takeover or proxy fight, and the prospect of being appointed to positions in more prestigious organizations, all contribute to the actions of the CEO (Tirole, 2006: 20). A successful track record is a critical factor for the CEO's future.

Most of the explicit and implicit motivational factors point to the bottom line more than anything else. A CEO with greater explicit incentives faces a less secure job (Subramanian, Chakraborty, and Sheikh, 2002). The situation facing CEOs in U.S. firm therefore appears to be 'perform or leave' (Kay, 2005).

4.1d The balance of power system

The combination of high informal CEO power and high firm performance is self - reinforcing, increasing the potential for CEO entrenchment. In contrast the low informal CEO power and low firm performance weakens the CEO. Finkelstein and D'Aveni (1994) claim that boards try to balance avoiding CEO entrenchment and achieving unity of command. However the question about the effectiveness in balancing the power remains unanswered in their study.

Outside directors of the boards tend to be loyal to or dominated by the CEO due to process infirmities, like large numbers of board members, CEO duality, interlocks, and financial dependence. The managerial power approach suggests that boards do not operate at arm's length in devising executive compensation arrangements; rather, executives have power to influence their own pay, and they use that power to extract rents. Most firms lack substantial outside shareholders, the financial interest of whom would be to bargain over pay and make periodic reviews of firm performance and thus be able to change the course of the firms before escalation into severe loss. The likelihood of illegal activities within a firm tends to occur at a higher rate among firms led by CEOs with longer tenure (Williams, Fadil, and Armstong, 2005). Based on previous studies, Bebchuk and Fried (2004: 80-82) conclude that corporate institutions are ill-suited to foster arm's length bargaining between top managers and boards. Langevoort (2001) describes the board of the U.S. firm as an elite private club with a rubber stamp. Recognizing their helplessness in overcoming the cultural barriers to directly monitoring management functioning, the boards of U.S. firms rely on setting an earnings target and equity-based incentive systems to motivate the CEO.

Whereas Tirole argues that the board of directors usually tries to avoid reaching a direct conflict with the CEO (2006: 31), Song and Thakor (2006) vaguely propose - without supporting evidence - that the board's career concern will motivate its concurrence with the CEO on over-investment during economic upturns. Golden and Zajac (2001) argue that the lack of accountability and power is behind the board's passivity. There is insufficient evidence to explain the board's abstention from initiating a constructive dialogue with CEO to change the firm's direction before it becomes too late. The studies on family and labor conflicts point to the same conclusion - that without exogenous intervention, the great disparity in power between parties and the potentially compromised self-benefit foreseeable for the more powerful bar the constructive negotiating process from taking place (Neumann, 1992; Aura, 2002; Guthrie, 2002). The argument is supported by the study result that better-governed firms pay their CEOs less by 23-33% (Bertrand and Mullainathan, 2001).

4.1e The impact of Sarbanes-Oxley Act

In response to corporate frauds in early 2001s, Congress passed the Sarbanes-Oxley Act intending to hold board of directors more accountable for monitoring management. The financial expertise of audit committee has been required. There is, however, insufficient empirical evidence either to support or denounce the act. With limited evidence, boards seem able to access more information of firms (Nofsinger and Kim, 2003: 214) but it does not come without a price. Under the new rule, the publicly held U.S. companies have to shoulder significantly higher audit fees, a burden, with which some of the smaller firms apparently may not able to cope (Branson, 2006). The obligatory compliance with the act may take most of the time and resources of the board; boards will have to comply with the statutory mandate rather than focus on relatively more important issue for the firms such as strategic decisions (Kirchmaier and Selvaggi, 2006). Among the more contentious issues surrounding the reform of corporate governance in the United States, is whether to split the roles of chairman and chief executive officer following the U.K. standard recommended by Cadbury (1992). The argument has been going on without conclusion (Felton, 2004). However, there has been no evidence to indicate any significant change in the power structure of U.S. firms.

4.1f The U.S. corporate governance system

Based on above evidences and their logical implications, the corporate governance system of U.S. firms that have a good performance is characterized in the game theoric model in Figure 2.

Figure 2
An example of pay-off matrix of interactive strategies between the CEO and board in U.S. firms that have good performance

		Board's Action	
		Strategy y_1: concurs with CEO	Strategy y_2: does not concur with CEO
CEO's Action	Strategy x_1: maximizes shareholder value	b_g=10v; a_g=50v	d_g=0; c_g=50v
	Strategy x_2: maximize CEO's benefit	g_g=5v; f_g=100v	i_g=1v; h_g=50v

Remark: created by the author to show the strategies available to CEO (x_1, x_2) and board (y_1, y_2) and the respective pay-offs for the CEO (a_g, c_g, f_g, g_g) and the board (b_g, d_g, g_g, i_g). The pay-offs are assigned to reasonably represent the general situation when firms have a good performance. Both pairs of strategies–x_1, y_1 and x_2, y_1–give optimal payoffs of a_g=50v and b_g=10v, and f_g=100v and g_g=5v for CEO and board respectively when the firm has good performance.

U.S. firms are under the influence of a cultural consensus to maximize shareholder value. In figure 2, in which game format is borrowed from Figure 1 and adapted to the U.S. context, the CEO has two strategies, each of which represents different objectives, either strategy x_1 to mainly serve shareholder value or personal benefit strategy x_2. Boards in this case also have two strategies, strategy y_1, 'concur with CEO' or strategy y_2, 'not to concur with CEO'. The pay-off values of a_g, c_g, f_g, and h_g denote the amount of rent taken by CEO and b_g, d_g, g_g, and i_g denotes what is taken by boards in different circumstances of strategic interaction between the two parties. The pay-offs in the matrix are assigned the values in conformance with the situation of having a good performance, which is defined as being above the industry average or managed by the CEO to appear as such. Specific values are given just to tease out the illustration of the scenario. In this scenario, there two Nash equilibria – a_g= 50v, b_g = 10v, and b_g= 100v, g_g = 5v – where v is a scale positive variable. The shareholders usually have high confidence in the CEO and the internal balance of power thus tilts toward the CEO. The CEO can extract higher short-term rent from strategy x_2 for herself under the board's approval instead of moderate rent (a_g =50v) from strategy x_1 (or f_g>a_g).

The board then has two choices, either to choose the corroborative strategy of y_1, taking the risk of conspiracy and reaping all rents including a side-payment with equivalent nominal value to b_g. But the board may have to take higher risks of being implicated in corporate crime committed by the CEO. In the face of higher insurance fees, legal advisory fees, and medical expenses associated with stress that they have to bear, the board ends up with a modest net amount of rent received at g_g=5v (or b_g> g_g). Alternatively, they may choose strategy y_2 of challenging the CEO, ending up with the board's subtle replacement and receiving less value of pay-off, i_g=1v (or g_g > i_g) although the conflict would catch public attention and also preempt the extra rent for CEO making her pay-off reduced to c_g=50v (or a_g=c_g). The small amount of i_g given to the CEO for leaving the board is for the sake of their past relationship and in exchange for keeping the CEO's misconduct undisclosed. The board prefers that the CEO chooses strategy x_1 and takes the rent of a_g=50v, so the board would reap the higher pay-off including the good reputation of b_g=10v (or b_g > g_g) from strategy y_1 without having to pay the extra insurance premiums associated with liabilities caused by possible law suits later. Comparative net pay-off values between g_g and i_g perceived by board determines their action. The strategy set of x_1, y_2 represents the unjustified conflict of the board with the CEO, which will usually end up with the board's replacement and the lowest pay-off for board at d_g=0.

The CEO realizes that board may learn something about her intention of pursuing the less honest strategy of x_2. Anticipating the board's counteraction with the strategy of x_1, the CEO may choose the strategy x_1 bringing the game to equilibrium at the strategy set of x_1, y_1. The strategy set of x_1 and y_1 helps the firm save costs and avoid unnecessary risks, and therefore is the ideal type of balance of power, and Pareto optimality, resulting in the corporate governance. Nash's concept of equilibrium suggests that the equilibrium of mixed strategies lies between two sets of strategies, x_1, y_1 and x_2, y_1, falling closer toward the set of strategy x_2, y_1. Past empirical evidence suggests that the high authority of CEOs during the period of good performance has let several U.S. firms end up at the suboptimal pay-off pair resulting from strategy set of x_2, y_1.

4.2 The U.S. Model of corporate governance when the firm has poor performance

One distinguishing characteristic of the U.S. corporate governance system is that it is quite subject to the influence of firm performance that reveals the true firm nature when its ownership is dispersed. The balance of power system in U.S. firms relies considerably on independent directors, which account for the majority of board members. But independent directors may not function in line with their duties of safeguarding the firm interest for several reasons. They may have strong personal relationship with CEO, a full workload, and poor incentives.

Except when it comes to firing management, it is hard even for independent directors to confront management for they may be engaged in an ongoing relationship with top

executives. A conflictual relationship is not pleasant, neither is it conducive to the management's listening to the board's advice nor to the disclosure to the board of key information. Many independent directors are CEOs of other firms. That means the board tends to have sympathy for the CEO and loosens the leash for those in the same shoes (Tirole, 2006: 32) until it becomes obvious that mistakes have been made, and it is often too late for the firm to change its business direction. The corporate culture might share a cause of problems like those found in General Motors (GM) during a crisis sitution. GM had a corporate culture that was reluctant to face up to bad news. GM management was complacent and the prisoner of the conviction that GM could never be wrong (Keller, 1989: 191). The cosy relationship between directors and management is likely to breakdown during acrisis. In this situation, directors become more worried about liabilities associated with lawsuits (Veasey, 2001; Helland and Sykuta, 2005) and takeovers (Holmström and Kaplan, 2003; Tirole, 2006: 20) than about being removed by the shareholders (Bebchuk, 2007).

Once their underperformance becomes known, the balance of power has been substantially changed. Without the support of investors amidst an apparent failure of management, it becomes the boards that make demands which may start with more disclosure and scrutiny into the mistakes that led to the failure. If the scrutiny is maintained, it should not take long to find mishaps that may include mismanagement, the hiding of facts, earnings management and others which have helped keep the CEO in power. Any of these may expose the CEO's wrongdoings and make her liable for lawsuits. The CEO's misdeeds can easily implicate the board as collaborators, or at least for their failure in fulfilling duties of care. The duty of care requires the board to ensure that the firm has an adequate internal control system in place. The bad performance in itself often constitutes a reasonable ground for doubt about the existence of such a control system and insufficient care of the board in face of the extravagant expenses of CEO during her era of popularity. Although most of the board may finally be acquitted by the court of the shareholders' accusation of negligence and freed from associated liabilities based on the business judgment rule (Bainbridge 2002; Tirole, 2006: 31), defending the charge in court or being forced to testify against a CEO can never be considered a pleasant experience. The replacement of the CEO at least gives a fresh hope to the shareholders. It also ensures all parties that at least the previous wrong business direction causing harm to the firm performance has been stopped.

As Aoki (2001: 345) has put it, when either party is confronted with issues of its own survival and legitimacy, the old collusive agreement may be broken, even if only temporarily, until a new strategic equilibrium is generated. Those concerns and the latent animosity between the two parties make the firing of CEO a reasonable act for the board. Therefore CEO turnover in U.S. firms is found to be much related to stock returns, changes in profitability, and debt downgrading, but not to earning expectations. The CEO tries to wield her power to resist an exit under all circumstances, while boards and institutional investors exercise their power to force out the CEO only when performance is poor (Ward, 2006). U.S. firms do not show the consistent balance of power, a circumstance which would let the board take necessary precautious actions to help the firm avoid falling into a strategic trap (Burgelman, 2003) and subsequently face severe performance problems.

With this evidence and that in the last section, the pay-off matrix representing the scenario of the interaction of CEO and board when the firm has a poor performance in Figure 3 is created. The game theoric model of underperformance in Figure 3 again borrows the general format from the one illustrated in Figure 1 with some adaptation. In this scenario, the board has two strategies to choose from, strategy y_1 of 'not to fire the CEO' and strategy y_2 of 'fire the CEO'. The CEO also has two strategies to choose, strategy x_1 of 'does not leave the firm' and strategy x_2 of 'leaves the firm'. The examples of pay-offs for boards are denoted with b_p, d_p, g_p, and i_p and for the CEO a_p, c_p, f_p, and h_p. Again specific values are assigned to all pay-offs in Figure 3 for simpler illustration.

Figure 3
An example of pay-off matrix of interactive strategies between the CEO and board in U.S. firms that perform poorly

		Board's Action	
		Strategy y_1: does not fire CEO	Strategy y_2: fires CEO
CEO's Action	Strategy x_1: does not leave the firm.	b_p=2v a_p=5v	d_p=4v c_p=-20v
	Strategy x_2: leaves the firm.	g_p=5v f_p=1v	i_p=4v h_p=2v

Remark: created by the author to show the strategies available to CEO (x_1, x_2) and board (y_1, y_2) and their respective pay-offs for the CEO (a_p, c_p, f_p, h_p) and the board (b_p, d_p, g_p, i_p). The pay-offs are assigned compatibly to the pay-off pattern evidenced in this article when the firm suffers poor performance. No discrete optimal pair of strategies is found in this game. However the heavy loss suffered by the CEO in strategy x_1 (c_p= -20v) if the board decides to choose the strategy y_2 makes it more likely that she will choose the strategy x_2 resulting in a voluntary resignation (x_2, y_1) or a negotiated resignation (x_2, y_2) with respective pay-offs of f_p=1v and g_p=5v, and h_p=2v and i_p=4v for the CEO and board after the firm has experienced a poor performance.

In this scenario, the CEO prefers the strategy x_1 of 'does not leave the firm' on the hope that the business situation may turn around and the firm's performance improves in the near future. Staying too long with the wrong business strategy weakens the firm and exhausts its resources. There are not many resources left for a new CEO to improve firm performance. That explains the empirical evidence that CEO replacement does not improve the firm's performance (Fizel, Louie, and Mentzer, 1990). The CEO also hopes that board would choose the strategy y_1 of 'do not fire the CEO' and let the CEO keeps her job with her strategy x_1 and get the optimal pay-off of a_p=5v, leaving the board with the pay-off of b_p=2v in light of their implication in possible lawsuits placed by shareholders. On the contrary, the board prefers the strategy y_1 of 'do not to fire CEO' on the hope that the CEO would feel guilty enough to tender her resignation in line with strategy x_2 and the board then could get the optimal pay-off of g_p=5v (or $g_p > b_p$) and reluctantly let the CEO get the pay-off of f_p=1v (or $a_p > f_p$). The pair of strategies x_1 and y_2 may result in an extreme case of a prolonged conflict in court, a proxy fight, or attempted leveraged-buy-out (LBO) by the CEO. The LBO is however doomed to fail in light of the poor performance of the firm and the fraudulent behaviors of the CEO known to the public5. In this fight, the board are generally worse off and get the pay-off at d_p=4v. However, the CEO's conflict with the board under this circumstance of poor performance may catch the public attention. The news exposed may draw the shareholders to find out certain hidden mishaps and to decide to file class-action lawsuits against the CEO. The conflict also prompts the CEO to realize the board's willingness to testify in court against her and undermine her legal defense and it could cause her a severe negative pay-off of c_p= –20v (or $a_p, f_p, h_p > c_p$). Anticipating a huge loss for battling with the board, the CEO is induced to choose the strategy x_2 and hope that the board will choose strategy y_2 and let both parties reach a negotiated solution. A possible negotiated settlement, in quite less frequent cases, known as a golden parachute (Tirole, 2006: 19) will likely bring the CEO a fortune, though with some disgrace and a dim future, resulting a net positive pay-off of h_p=2v (or $a_p > h_p > f_p > c_p$) for herself in exchange for her departure. The severe loss from the set of strategy x_1, y_1 suggests that rational or risk averse

CEOs will mostly choose strategy x_2. That explains why strong law enforcement indirectly helps to contribute to corporate governance.

It is tempting to imply that without having directors held accountable to shareholders, and acting as the intermediate and internal agents, law enforcement may be totally impotent. But the experiment conducted by Olekalns and Smith (2006) gives a possible explanation for the scenario when the investment proves a failure and it is likely to raise a question regarding the legal contribution to the constructive balance of power between the CEO and the board. They found that in a two-party game of negotiation the deception was lower when the other party was perceived as reliable, predictable or as having the same goal. Deception increased when the other party was perceived as benevolent. Power balance did not affect the use of deception. In power asymmetric dyads, high trust (predictability and benevolence) decreased the use of deception whereas high trust could trigger an increase in the use of deception when power was symmetrically distributed.

These findings bring up two implications associated with the professional relationship between the CEO and the board. First, the trust between the CEO and the board is the critical factor if the deception is to be avoided. Second, the board cannot wait until the firm's operation obviously goes awry before it starts to intervene. When its operation shows a clear bad sign to outsiders, the firm may have actually passed the strategic point of no return. This point marks the divergence of interest between the CEO and board. Beyond the point, the goals of the CEO and the board could be much different. Whereas the CEO may prefer to stay the business course, or even spend more resources of the firm to prove her righteousness given the sizable compensation that is at stake for her, the directors may want to distance themselves from what likely turns out to be the wrong decision on investment resulting in bad performance. They would prefer the firm to turnaround, to prevent further damage to the firm as well as to mitigate the personal risks involved. For the directors, not only does the personal liability in line with the duty of care become imminent, but also their personal reputation might be damaged. From the empirics previously mentioned, there apparently is not any effective mechanism to encourage the board to actively intervene in the operation of U.S. firms while there is still a chance of avoiding strategic traps. From the legal perspective, there is only outcome-based intervention, too little or none of the process-based intervention needed to mitigate the damage (de Hoon, 2007).

There is apparently no pure strategy Nash equilibrium in this game because deviation in strategy by any single player is still profitable (Nash, 1996). This pay-off matrix shows that the severe loss of cp contributes to the mixed strategy Nash equilibrium, which has more frequency of the strategy set of x_2, y_2. The previous empirics also suggest that both sets of strategy x_2, y_1 and x_2, y_2 are the most likely outcomes, which eventually lead to the same result, the CEO's replacement. When the firm has suffered a poor performance, there is a chance that the CEO has earlier committed some wrong decisions. CEO replacement gives the firm a fresh start but does not change the fact that firm has already suffered certain damage. The balance of power that lets the board take action to replace the CEO as the last resort, previously referred to as *passive monitoring*, can be considered only the second-best outcome of the corporate governance system. The previous empirical evidences indicate that U.S. firms likely have the power structure to obtain only the second-best corporate governance (Jenter and Kanaan, 2006; Kaplan and Minton, 2006; Ward, 2006).

5. Conclusion

This article represents an early effort to establish a solid theoretical foundation of 'the internal balance of power' as the determinant of corporate governance. Based on Trimiti theory proposed earlier, a game theoric model is created to reflect the precise concept of the balance of power and how it relates to the corporate governance system. The study results of U.S. corporate governance are evaluated and found to fit into two game theoric models: the model when a firm performs well and the model when a firm has a bad performance. The internal

imbalance of power of U.S. firm is found to tilt toward the CEO when the firm has or appears to have a good performance. The American norms of holding the CEO as the ultimate leader, coupled with the apparent success make the CEO an untouchable person. Under this circumstance, entrenchment occurs and the board is unable to control the CEO. Agency costs soar and mishaps of the CEO accumulate but this information is largely inaccessible to the board; nevertheless the shortcomings of the board are rarely excusable in the eyes of investors. The game theoric model predicts that board will fail to take the active role of monitoring and will thus be unable to prevent the firm from going into a wrong direction if the CEO persists. Empirics confirm that the condition of U.S firms before the CEO is actually replaced is generally quite bad.

In the wake of poor performance, the board of the U.S. firm is under pressure from shareholders of possible litigations. Worried about the law suits, the board requires the CEO to make disclose more information to establish the causes of poor performance and equally to disassociate themselves from the mismanagement. Trusted as the monitoring body by shareholders, the board can never fully be absolved from responsibility for the firm's failure and is hardly able to walk out unscratched. To mitigate the pressure, CEO replacement increasingly becomes inevitable. How the board removes the CEO in response to poor performance can be categorized as an act of passive monitoring. From the game theoric analysis I find that the corporate governance of U.S. firm functions differently from the ideal. The corrective action is taken ex post after harm is done to firm instead of being taken *ex ante*.

The cognitive analysis on strategic interaction between the CEO and the board in U.S. firms, mostly ignored in finance and main-stream economics, has come to life in the corporate governance landscape in this study, significantly contributed to by Tirole (2006). The embedded norms associated with imbalance of power between CEO and board, much supported by the firm's success, bar the board from reaching a cordial negotiated settlement with the CEO until the situation deteriorates. The CEO replacement therefore appears to be not only the measure of last resort, but the only resort for the board to restore confidence. There are two possible explanatory concepts for the inadequate functioning of the board. First, the CEO's authority in the U.S. firms may not be challenged without an undeniable evidence of failure, a familiar phenomenon in firms located to emerging countries. Overwhelmed by the superior power of the CEO, the board will side with the CEO as long as the firm's performance is good. When the firm's performance is poor, the board has to take the first opportunity to make a decision truly based on the shareholders' interest: firing CEO. Second, it is also possible that the managerial mindset of the independent directors, of which a sizable proportion is represented by executives from other companies, precludes them from duly functioning of fiduciary duties. This latter explanation leads to the serious consideration of the independent director as a full-time profession and her necessary personal qualifications.

Game theoretic approach is confirmed as a viable method for studying corporate governance in the U.S. context. The approach also helps the establishment of the theoretical foundation of the internal balance of power taken granted for a quite some time. The study of corporate governance from the perspective of the internal power interaction as in this article is, however, just in the early stages and needs further research. The study of the board's reluctance to pursue constructive dialogue with management to help the firm avoid adverse conditions is seriously needed. If the game theoric format is to be chosen for future study, there are some points that deserve attention. The identification of actors, their choices of actions, and relative pay-offs are critical information for game-theoric analysis. In this analysis, the CEO and board are prominent actors and empirics tend to clearly indicate the pay-off structure associated with their strategies. To advance the analysis, a few assumptions however are made in this analysis i.e. strong unity of all board members, strong and consistent law enforcement, symmetry of information. Some of these, though unlikely to undermine the validity of this analysis, may not hold true in the real world and may have different impacts in other contexts. Serious consideration is still needed for a clearer scenario of what actors do, and what are their available strategies and pay-off structures. The systematic inclusion of the parties involved and the

objective formulation of their pay-off structures are needed especially when the model is employed in different environments such as the concentrated ownership structures in emerging economies and codetermination in Germany and other European economies. More expansive analysis may be also needed if the efficacy of law enforcement is lacking or uncertain.

Notes

1. Tirole (2006: 27) suggests that only boards of directors play the forward looking role of *active monitoring* whereas auditors, investors, creditors and rating agencies play only the *passive*, backward-oriented role of speculative monitoring. Only active monitoring is intimately linked to the exercise of control rights. Speculative monitoring is not. I prefer to call them *active* and *passive monitoring* because most parties, except for the investors, are less concerned with firm performance though those parties may have some interest in correcting the harm done to the firms by CEOs. Also, it is shown in Section 4 of this article that instead of focusing on *active monitoring*, the boards of U.S. firms de facto play only the role of *passive monitoring*. Some might want to argue for the model representing the CEO and a group of shareholders instead of board. I agree that such a model can be created but then it becomes a model focusing on the external balance of power, from which the role of *active monitoring* is excluded.
2. My definitions of active and passive monitoring are quite different from Tirole's (2006: 334), which are based on the types of parties involved rather than on the scope and objectives of activities. The definition of active monitoring in this paper is more compatible with the *ex ante* action taken as the intention to prevent the engagement of unjustified risks; passive monitoring is more compatible with ex post actions taken as the corrective measures to minimize the inevitable damage. All type of rewards and punishments, including the replacement of CEOs, may be executed *ex ante* or *ex post* at any stage of the business process under their discretion when certain information is gathered and known to boards. Though the replacement of CEOs is an act of active monitoring which is mostly executed by boards, it makes more sense to consider the act also from its objective and *de facto* effects on governance than only from what parties.
3. The meanings of a good and bad performance for each study referred to in this paper are slightly different from others. For the sake of simplicity, being above the average industry performance is considered a good performance, and being below the average is a bad one in this paper unless specifically stipulated otherwise.
4. What should be paid more attention to is the structure of the pay-off matrix and the mathematical expressions shown in the subsequent round brackets. The scale variable 'v' is used to underlie the importance of the pay-off structure rather than the pay-off values themselves. To shorten the analysis, I have left the pay-off matrices of intermediate stages and present only the pay-off matrix of the final stage.
5. LBO game requires a different pay-off matrix or matrices and set or sets of strategies. Due to its relatively less frequent occurrence, it is ruled out from analysis in this article.

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