Board Composition and Community Benefit Expenditures of Nonprofit Hospitals

Jenn-Shyong Kuo, PhD
Assistant Professor, Department of Accounting,
National Taipei University.
jennkuo@mail.ntpu.edu.tw

Yi-Cheng Ho, PhD
Associate Professor, Department of Public Finance,
National Cheng-Chi University
yho@nccu.edu.tw

Abstract

The Taiwan department of health encourages nonprofit hospital to provide medical welfare service, including medical research and education activity, and charity care and services activity.

Department of health try to induce public interests behavior by limiting nonprofit hospitals' board structure, such as board size, the percentage of relative, the percentage of medical experts and so on.

This article investigates the relationship between nonprofit hospitals' board structure and composition and their medical welfare expenditures. Regressions results show: First, the percentage of outsiders on board has significant negative impact on medical research and education expenditure, charity care and services expenditure, and medical welfare expenditure. But the coefficient of percentage of outside members will insignificant while control market and hospital characteristic variables. Second, board size and medical revenues have significant positive impact on medical research and education expenditure, charity care and services expenditure, and medical welfare expenditure. Third, long-term debt to total assets, and percentage of senior citizen only significant correlated with charity care and service expenditures.

1. Introduction

Nonprofit Organization is a tax-exempt organization which serves the public interest. Generally, the purpose of nonprofit organization must be charitable, educational, scientific, religious or literary. The nonprofit hospitals do not regard making profit as their major long-term goal. Instead of participating in research development, skills training, health education, unreimbursement care, community medical care and other community welfare activity are theirs main operation purpose.

The characteristic difference between nonprofit organizations and commercial organizations make governance mechanism and mechanism effeteness been quite apart. It's unable directly apply the profit organization governance mechanism to nonprofit organization. For example, nonprofit organizations do not have residual claimant, ownership can't be traded, and do not have takeover threatens. Besides, nonprofit organizations have complexity of objective functions, difficult to measure outputs, hard to evaluate performance and no assess of market value. Thus unable to use stock based incentive contract to tie managers' interest (Dixit 2002; Holmstrom and Milgrom 1991). Therefore, the only governance mechanism for nonprofit organizations is the independent board of directors who can monitor the managers (Fama and Jensen 1983 a, b)

There are some characteristics of nonprofit organizations, firstly, the donor's role: The decision of nonprofit organization is usually influenced by donor's utility function (Fama and Jensen 1983 a, b). The board of directors of nonprofit hospitals are entrusting by founders and donors to monitor the manager's behavior. But different from the other nonprofit organizations, the mainly financial resources for nonprofit hospitals are come from the medical operation (Hansmann 1987).[1] Secondly, the structure composition of the board of directors: The board is self-perpetuating by the board, or been nominated by the managers; the directors have no need to fellow the former directors' goal. The goal of the board and donors may not be unanimous, and easy to be influenced by managers. Third, decision-making mechanism: Both the board and managers are policymakers for nonprofit organization (Glaeser 2003).[2]

For-profit hospital and nonprofit hospital are roughly the same in operation, but

[1] The type of nonprofit organization can be divided into donatives or commercial, and mutual or entrepreneurial (Hansmann 1987). The nonprofit hospital is a commercial/ entrepreneurial enterprise.
[2] Glaeser (2003) points out the elite workers, including board and the managers, are basic missions policymaker of the nonprofit organization. The influences of stakeholders of the nonprofit organization are very limited, and the effectiveness of governance institution is quite insignificant.

according to establishing missions and goals, they perhaps have difference on providing community benefit services. The motivation of offering community benefit service may because of altruism, but more because of obtaining the tax-exempt status qualification. (Byrce 2001)

The Taiwan's nonprofit hospitals usually reveal their mission only with obscure bylaw of nonprofit organization. Although medical law has relatively clear regulation on community benefit service, due to the highly diversity of the community benefit activity, it's hard to specify the detailed of works. Besides there is no penalty for infringe of medical law for not providing the community benefit service. Moreover, the nonprofit hospitals tax-exempt status is determined by the proportion of annual expenditure to the revenue, not engaged by the community benefit services. This irrelevant of tax-exempt status and community benefit service provision reduced the nonprofit hospital supervision by government. But this non- mandatory altruistic activity for nonprofit hospital give us a chance to test the altruistic activity of nonprofit hospital.

The different type hospitals have different objective functions. These different objective functions derive different governance systems. So does difference performance measures among hospitals' governance systems (Eldenbrug, Hermalin, Weisbach and Wosinska 2004). Thus, we can expect that there is connection between governance systems and operation performance of nonprofit hospitals.

According to the above statement, we can understand the deficient governance systems of the nonprofit organizations. With self-interest motive, the managers do not inherently maximize the objectives of either investors (donors) or society as a whole. Therefore, the purpose of this paper is to examine the behavior of doing community benefit services in the nonprofit hospitals and how the interaction of board composition influences the action of nonprofit hospitals.

There are two category literatures on nonprofit hospital providing community benefit services. One kind of literatures discuss the reasons of why nonprofit hospitals offer community benefit services, the other of literatures discuss the influence of nonprofit hospitals offer community benefit services. The former, focus on the distinguishing feature of the hospitals (capacity): including the number of licensed beds , the number of medical personnel, and the net income; the market structure, which including the percentage of senior citizen , unemployment rate, household income, ratio of medical insured population (Bryce 2001; Rosko 2004).

These researches have not probed into the impact of governance systems on offering community benefit services. The latter, investigate the impacts of hospitals offering free medical care to CEO turnover, CEO wages, and the change rate of board.

This study extends the existing research by providing a detailed examination of factors that affect the community benefit expenditure in nonprofit organizations. Without stock trading mechanism and market evaluation, the governance mechanism of nonprofit organizations are weaker than profit organizations. The board is the major governance mechanism for nonprofit organizations.

The paper is organized as follows: Section 1 is the purpose of this study; Section 2 reviews the research literature; Section 3 states the data structure and definition of variables; Section 4 discusses the empirical results; and Section 5 illustrates the conclusions and limitations of the study.

2. Literature Review

Most of the corporate governance researches focus on profit organization. Mainly discuss how company's performance and relevant factors influence corporate governance mechanism (Demsetz and Lehn 1985; Hermalin and Weisbac 1988; Brickley and James 1987; Shvdasani and Yermack 1999; Baker and Gompers 2000), and how corporate governance mechanism influence the companies' control system (Weisbach 1988; Brickley et al.1994; Morck et al. 1988; Hermalin and Weisbach 1991; Yermack 1997; Hermalin and Weisbach 2002).

Due to profits maximization is the major target of the commercial organization, relevant empirical researches adopt the accounting figures to measure the performance (for example, ROA, ROE, variations on Tobin's Q ratio, net earning, and growth in sales etc.). Usually adopts "the proportion of the outside directors (or inside directors) to of the board" and "the board size" as the structure variables of board. Relevant researches show the board size and company's value have negative relationship (Yermack 1996), but the ratio of outsider and company's performance do not have unanimous relation, (Hermalin and Websbach 1991, Bahgat and Black 1999, Klein 1998), as for smaller corporate boards are actually more efficient than large boards due to an inverse relationship between board size and firm value (Callen et al., 2003).

The researches, focus on nonprofit organizations' governance, are much less than profit organizations. The nonprofit and profit organizations have entirely different properties. Nonprofit organizations have complexity of objective functions, do not have residual claimant, ownership can't be traded and tax-exempt status. We are unable to directly apply corporate governance theory to nonprofit organizations.

Because profit maximization is not a major long-term goal of nonprofit organizations, financial performance is unsuitable to be regarded as the main goal of nonprofit organization. Previous literatures discuss the performance of board for nonprofit organizations can be divided into subjective and objective approach (Bradshaw, Murray and Wolpin 1992). First of all, adopt the subjective performance measures often use the self-evaluation by member (Miller, Weiss, and MacLeod 1998; Young, Beekun, and Ginn 1992). Secondly, adopt the objective performance measures usually use the objective performance index as follows: the board obtains the resource performance (fund raising), the performance of board transforms input to output (efficiency), and the performance of board attains the organizational goal (effectiveness).

In the initial stage of founding nonprofit organization the board are compose by donors, experts, and prominent community leaders. This research adopts the board size, ratio of outside directors (not works on hospitals), and the CEO on board to measure the structure and composition of the board.

According to objective performance, we can categorize researches as fellow: first of all, are the researches of the nonprofit hospitals effectiveness (i.e. offer community benefit services). For the effectiveness, the relevant literatures can be divided into two categories, one is studies the determinants of offering community benefit services, the other is examines the influence of providing community benefit services.

Category one, the determinants of offering community benefit service are hospital characters (for example, the amount of licensed beds, medical workers, medical revenue, total revenue, non-medical revenue, medical service price (i.e. the average wages of nurses) and teaching hospital or not, etc.), market characteristic variables (for example, HHI index, percentage of senior citizen, median income, unemployment rate and uninsured rate, etc.), control variables (for example, time trend, region) and the government policy (for example, the Uncompensated Care Trust Fund). Expect Bryce's (2001) study investigates, other researches (Frank and Salkever 1991; Gaskin 1997; Rosko 2004) focus on the determine factors of uncompensated care. Bryce

(2001) found the hospitals' features which offer community benefit services, charity care and unreimbursed government sponsored indigent health care. These researches found hospital capacity and their financial ability had positive relationship with uncompensated care provision (Bryces 2001; Gaskin 1997; Frank and Salkever 1991). But do not have unanimous result in income effect. Frank, Salkever, and Mitchell (1997) and Rosko (2004) presented the positive income effect on uncompensated care. Gaskin (1997) and Frank and Salkever (1991) did not have apparent income effect on it. As for the market factors, they find the competition might reduce the surplus available for altruistic activities and motivate nonprofit hospitals to focus on profit for survival. In addition, unemployment rate (Rosko 2004), the ratio of emergency to outpatient services (Rosko 2004) and the Uncompensated Care Trust Fund (Gaskin 1997) had positive effect on hospitals' uncompensated care provision.

Category two, studies how community benefit services be influenced by CEO turnover and board turnover rate. Brickly and Van Horn (2002) and Eldenbrug, Hermalin, Weisbach and Wosinska (2004) analyses American nonprofit hospitals find no significant effect on CEO turnover and board turnover rate for hospital offers uncompensated care, including charity care and bad debt. The financial performance (Return on asset and excess income) and market competition significant influence CEO turnover and board turnover rate. Brickly and Van Horn (2002) adopt the high-quality medical services as the proxy variables of community benefit services (for example, total revenue per patient-day, total registered nurses on duty per patient and direct program expenses to total expenses, etc. that are relatively crude measurement). Eldenbrug, Hermalin, Weisbach and Wosinska (2004) only adopt the uncompensated care as the proxy variables and might not capture the others altruistic activities considered by nonprofit boards.

Secondly, the researches of operating efficiency and governance of the nonprofit hospitals (governance and funds allocation) usually assess efficiency with the proportion that the funds are used in different functions. Dyl, Frant, and Stephenson (2000) examines charitable medical research institutes found if a CEO also be a board member (Executive on board), and high ratio of inside directors (works on hospitals), have negative influence to major aims of nonprofit hospitals, positive effect on fund raising. The amount of the above two is about equal that shows hospitals' resources are shifted into fund raising activity by the program activity. That address that the self-interest motive managers are tended to spend money on fund raising. But if a CEO is not an EOB or high ratio of outside directors, will be able to improve the

monitoring incentive of the board and reduce manager's self-interest behavior. Callen, Klein and Tinkelman (2003) find the highly ratio of major donors on the board can increase monitoring incentive of board, that can reduce the proportion of administrative expenses and program expense. As for the board size, in Dyl, Frant, and Stephenson (2000) find no influencing on funds allocation. Callen, Klein and Tinkelman (2003) find positive relationships between board size and ratio of fund raising expenses to total expense.

Finally, the researches focus on fund raising for nonprofit hospitals. Fama and Jensen (1983a, b) and Williamson (1983) conjectured the efficiency of nonprofit organizations are positively affected by the outside members and negatively affected by the insider. Callen and Falk (1993) fellow previous studies with the sample "specific health focus" of Canada, the results were unable to support the theory of Fama and Jensen (1983a, b) and Williamson (1983). Namely, the efficiency of fund raising (technical efficiency, allocative efficiency) is irrelevant with the proportion of insider member. However, Dyl, Frant, and Stephenson (2000) find if nonprofit hospitals' executive on board, will make more resource allocated on fund raising. But it will reduce when the proportion of insider decrease, irrelevant with the board size. Callen, Klein and Tinkelman (2003) find the nonprofit hospitals funds raising expense and board size are positive correlation. The ratio of major donors on board has no effect on fund raising expense. Olson (2000) finds the board size is positive correlated with the donation. This is because of the more members the directors, the more channels of getting the donations.

There are two kinds' researches according to the community benefit services provision. One part of literatures focus on the reasons of why nonprofit hospitals offer community benefits services, the other of literatures discus the effect of nonprofit hospitals provide community benefit services. The former, focus on the characteristic of the hospitals (capacity): including the number of licensed beds, the number of medical workers, and the net income; the market structure, which including the ratio of senior citizen, unemployment rate, household income, ratio of uninsured population (Bryce 2001; Rosko 2004). These researches have not probed into the impact of governance mechanism on offering community benefit services. These studies found positive relation between hospital capacity and community benefit service providing. The higher ratio of senior citizen and HHI index, make nonprofit hospitals provide the more community benefit services. The latter, investigate the impacts of hospitals offering uncompensated care to CEO turnover, CEO compensation, and the turnover rate of board. They found there is no significant

relationship between community benefit service offering and CEO turnover, as well as the turnover rate of board for nonprofit hospitals. But in public and teaching hospitals they found positive relationship between community benefit service offering and turnover rate of board. In religious hospitals and regional hospitals they found positive relationship between community benefit service offering and turnover CEO. Furthermore, the literatures of nonprofit organization governance focus on the impact of board on efficiency of fund raising, resources allocation and operation performance.

According to the previous researches, this research probed into the effect of community benefit service provision by nonprofit hospitals governance. To find out the nonprofit organizations' monitor and control ability of board structure and composition to reach the goal of nonprofit organization.

3. Sample Construction and Description

Data resources

There are 51 nonprofit hospitals in Taiwan, 10 of them still on prepare to build stage, 5 of them are examining center which do not offered acute-patient care activities, one of them out of business, and one of them without data. We limit our sample to acute-patient-care hospitals. Final sample contains unbalance data of 34 nonprofit acute-patient-care hospitals over a 4-year period.

The data for the present analysis are taken from financial statements which were audited by either financial statement audits or tax audits and official records published by Taiwan's Department of Health (DOH) and National Health Insurance Bureau (NHIB). The financial data, such as medical revenues, total revenues, long-term debt to total assets etc., come from financial statements. The board structure and composition and welfare benefit expenditures are collected by DOH. The hospital characteristics variables, such as number of sickbeds, and medical personnel etc., provided by Nation Health Insurance research database which established by NHIB. The market characteristic variables, such as unemployment rate, the percentage of senior citizen provided Ministry of the Interior. Table 1 presents the summary statistics of sample.

Dependent variables

Dependent variables measure community benefit services expenditure of nonprofit

hospitals. By the definition of medical law for medical welfare expenditure, it should including medical research and education expenditure (MREE). Namely, contain research and development, talent training, health education and charity care and services expenditure (CCSE). In other words, medical welfare expenditure should cover unreimbursed medical expenditure, community medical care and other community service item. Department of Health had not required the nonprofit hospitals to reveal the information of the medical welfare expenditure in their financial statement. Some of them only offer the roughly total medical welfare expenditure data, which did not contain the subdata of unreimbursed medical expenditure R&D and education expenditure. So, we regress with medical research and education expenditure (MREE), charity care and services expenditure (CCSE), and medical welfare expenditure (MWFE) three different variables as the dependent variables. Table 1 presents the summary statistics.

Community welfare expenditure should including unreimbursed medical expenditure R&D and education expenditure. The properties of the expenditures are not the same. First of all, R&D and education expenditure supports medical research projects; it can be counted as doctors' indirect income. Furthermore, it can be the learning cost for hospitals new business, contribute to expanding the scale of the hospital. As to hospital, interns are low-priced labor of hospitals; their wages are classified as education expenditure. We found the R&D and education expenditure contribute to cost control due to labor cost reduction. Secondly, the unreimbursed medical expenditure is the mainly aim of nonprofit hospitals established. The hospitals provide unreimbursed medical expenditure and community medical care, can improve the popularity of the hospitals, but will reduce the net profits.

Independent variables:

In line with the research on nonprofit organization governance and welfare benefit expenditure, the independent variables have three categories, board structure, community (demand) and hospital (supply) variables, separately illustrate as fellow:

First, the board composition and structure variables in regression are measures of how the board monitors the management. They are the executive on board (EOB), board size (BOARDSIZE) and proportion of inside directors (INSIDERS) (the proportion of outside directors). There is no residual claimant of owners (alienable residual claims), the board compose by internal agent and outside experts which is chosen by internal agents (Fama and Jensen 1983).

1. Executive on board (EOB): The executive director does, however, have significant knowledge and informational advantage that may result in influence on board decision. The presence the executive director on boardroom may have an inhibiting effect on free discussion of policy by other board members. In organizations where executive director is acting in his/her own interests and counter to nonprofit hospital's interests, we expect, in accord with Fama and Jensen (1983) that expenditure of program activities would be less (Provan 19; Dyl, Frant and Stephenson 2000). At Taiwan, most of executive directors of nonprofit hospitals also are physician who will more interest in research and education activities than charity care and services. The effects of subsidy research activities are similar to distribute dividend-in-kind to physician. Education expenditures have large part use as salary, much lower than salary of medical personnel, of intern doctor and nurse. The intern doctor and nurse can deem as substitute for lacking of regular medical personnel and reduce the labor cost. We expect that executive on board may have disproportionate influence on the expenditure on MWFE, then more favorite MREE than CCSE. EOB is dichotomous variable with a value 1 if the executive director is a board member and 0 if not.

2. The percentage of outsider (OUTSIDERS): We classify CEOs and hospital administrative personnel as insiders. Outsiders include medical experts, business people, community members, homemakers and others. Nonprofit organization outside members, serve without or little pay, generally are willingness to provide personal donations of wealth or time. Thus outside members are motivated to monitor nonprofit hospitals more seriously. Dyl, Frant and Stephenson (2000) find evidence that medical charities with large percentage of inside board member input more resources on management's interest, such as fund raising activity. Besides, larger proportional outsider on board, insider do not have enough voting power to control the board, on average in our sample is dominated by outsider. Thus, we expect that larger percentage outside member, have positive impact on medical welfare expenditure, especially on charity care and service expenditure.

3. Board size; (BOARDSIZE): Previous researches focus on corporation governance found the efficiency and board size are negatively correlated. And the relevant researches of nonprofit organization show the effectiveness and board size are positively correlated (fundraising amount and board size for private university, Olson 2000), the efficiency and board size are negatively correlated (the proportion of nonprofit hospitals' administrative expenses , fundraising expense, and major purpose activity expense. Callen et al. 2003), or irrelevant (Dyl , FRant and Stephenson 2000).

From an agency prospect, large size has more mental resources and knowledge (Bantel and Jackson 1989, Hambrick and D'Aveni 1992) and access to more information sources an resources (Hambrick and Mason 1984), resulting in a larger entity of possible operating and more adaptability (Katz 1982). Consequentially, larger boards should have a greater monitoring ability (Murray 1989) and can achieve more resources for their organization.

Although the effect of governance variables are important construct from theory, it is crucial to include other variables that may influence the provision community benefit services. Thus we use a number of other independent variables, such as community (demand) and hospital (supply) variables.

Hospital variables measure the limits on the hospital's ability to carry out community benefit services. The ability of hospital to provide community benefit service will depends upon its capacity and debt capitalization. The hospital capacity includes physical capacity, such as availability licensed beds (BED) (Gaskin 1997; Frank and Salkever 1991; Bryce 2001) , medical personnel (NUMED) (Bryce 2001), and fiscal capacity, such as medical revenues (REV) (Bryce 2001) and total revenues (TR). We use medical revenues (REV) is a proxy variable of hospital capacity due to medical law required the amount of community benefit services done by hospitals are calculated based on medical revenues and BED and NUMED, REV and TR are highly correlated (Table 2).

There are 4 reasons for not uses "income aggregates" as weighing the financial ability for nonprofit hospitals: First of all, lot of hospitals had annual net loss, no annual surplus can engaged in community welfare activity, but there still offer community welfare service. Secondly, no evidence shows that hospitals provide community benefit services if they have net profit, not provide if net loss.; Third, the net profit can be manipulated by its discretion of when to take large charges against its earnings; Finally, it is not match to "annual medical income" which calculate according to Taiwan medical law.

The nonprofit hospitals financed by a larger proportion of debt will be monitored more extensively by debt holders and are, therefore, unlikely to carry through charity care and services. We expect that hospitals' capacity have positive impact and debt capitalization (the percentage long term debt of total assets; LDTA), have negative impact on providing community benefit services.

Community (market) variables, ideally, reflect the need for community benefit services in an area. Past researches use unemployment rate and the percentage of senior citizen as proxy variables for need for uncompensated care. The need for uncompensated care by nonprofit hospitals are substantial reduced for National Health Care Plan (NHCP) which required the government pay the most part of medical insurance fee for senior and unemployment citizen. In the cases of missing variables, we use the percentage of senior citizen as a proxy variable which measures the need for uncompensated care. We expect the percentage of senior citizen has positive impact on charity care and services, no impact on medical research and education activities.

Under competition, nonprofit hospitals with market power use profit from medical operations to subsidize charity care and other community benefit services. Competition has arguably force nonprofit hospitals to focus profits and survival, and less little resources for community benefit services. To control the competition on this issue, we calculate a Herfindahl-Hirschman index (HHI) for each medical area which is planned by department of health (DOH). The HHI is calculated as the sum of the squared market shares of total licensed bed to all licensed bed in the same medical area. Mixed results have been found the relationship between HHI and uncompensated care. For example, the relationship between HHI and uncompensated care are found significantly positive at Rosko (2004) and Gaskin (1997), and insignificantly at Davidoff, LoSasso Bazzoli and Zuckerman (2000), Frank and Salkever and Mitchell (1990) and Frank, and Salkever (1991). We expect competition has negative impact on providing community benefit service, i.e. the positive regression coefficient of HHI.

Empirical model

Based on the above, a simple model can be written:

$Y_i = \beta_0 + \beta_1$ (executive on board)$_i + \beta_2$ (percentage of outsider on board)$_i + \beta_3$ (Board Size)$_i + \beta_4$ (hospital's capacity)$_i + \beta_5$ (proportional long-term debt to total assets)$_i + \beta_6$ (the percentage of senior citizen)$_i + \beta_7$ (HHI)$_i + e_i$, i = type of expenditure

Summary statistics

Descriptive statistics for 34 nonprofit hospitals unbalance data at 2000-2002 year in our sample are shown in Table 1. The average medical welfare expenditure (MREE) in our sample had 16.5 million. The average of medical research and education expenditure (MREE) (14.1 million) is higher than the average of charity care and services expenditure (CCSE) (5.26 million). The nonprofit where executive director

serves on board (EOB) are smaller than those there he does not. The average proportion of outsider members serve on board are 0.83 show the outsiders dominate insiders at board.

At table 2, Pearson correlation coefficient shows number of bed (BED), number of medical personnel (NUMED), medical revenue (REV) total revenue (TR) are highly correlated. To avoid the collinearly, this study use only financial capacity measure the capacity to provide community benefit services and as size of hospital. Beside medical law required nonprofit to provide community benefit services according to medical revenues.

4. **Regression Results**

Results of regressions examine the relationship between expenditure of community benefit service and various governance variable and other organizational and market characteristics. We estimate this equation separately by expenditure type in Table 3.

Governance Variables

At the panel A of table 3, the regression with medical research and education expenditure (MREE), charity care and services expenditure (CCSE), and medical welfare expenditure (MWFE) as the dependent variables reveal significant effects for two variables – percentage of outsiders on board and size of board.

In the panel A of Table 3, the regression results for each three dependent variables, namely, medical research and education expenditure (MREE), charity care and services expenditure (CCSE), and medical welfare expenditure (MWFE), have similar results. First, the coefficient of executive on board is negative and statistically insignificant. This is not confirm the executive more likely to focus on medical research and education activity than charity care and services activity. Second, the percentage of outsiders on board is negative and statistically significant at 5 % level for a two-tailed test. Thus, the larger proportion of outsider on board, the less MREE, CCSE and MWFE is not in maximizing nonprofit hospitals' community benefit mission. This finding is consistent with the argument that outside members have great incentive to monitor the organization (Fama and Jensen 1983 a, b) if board treats community benefit expenditure as expense of nonprofit hospitals rather than major long-term objective. Third, board size is positive and statistically significant at 1 % level for a two-tailed test. Olson (2000) found that larger boards, with more outside contacts, functioning more effectively in helping the organization to obtain

resources. Following Olson (2000), the board size, with more outside contact and more concerns community needs, is positively related to achieve nonprofit hospitals' goal in providing community benefit services. Therefore, the larger nonprofit boards associated with more expenditure at community benefit services. This finding consistent with Jensen (1993) and Dyl, Frant and Stephenson (2000) that increased the board size will imply weaker board oversight. Thus, the large board size will increase non-value added activity if we teat the community benefit expenditure as expense rather than goal achievement.

Hospital and Market Characteristics Variables

Panel B presents regression results of governance variables are similar to Panel A, except the percentage of outsiders on board are no longer significant at 10% level for a two-tailed test. Panel B of Table 3 indicates that with the exception of charity care and service expenditure (CCSE), the percentage of long-term debt on total assets (LDTA), percentage of senior citizen (AGE65) and Herfindahl-Hirschman index (HHI) are unrelated to medical research and education expenditure (MREE), and medical welfare expenditure (MWFE).

First, According to Bryce (2001), the hospital's capacity has significant positive impact, as expectation, on the provision medical research and education expenditure (MREE), charity care and services expenditure (CCSE) and medical welfare expenditure (MWFE). This finding is consistent with the regulation on medical welfare expenditure of nonprofit hospitals by medical law. The regression results are similar to Panel B of Table 3, Using BED, NUMED and TR as proxy variables of hospital's capacity in regression equations. Second, the percentage of long-term debt on total assets is, however, negative significantly associated with the charity care and service expenditure (CCSE). This finding consistent with the argument that the larger debt will monitored more extensively by debt holder and are, therefore, a high debt level could decrease charity care and services expenditure to increase profit. Third, the percentage of senior citizen (AGE65), as the expectation, has positive impact on charity care and services. Finally, we found Herfindahl-Hirschman index (HHI) has insignificantly negative impact on charity care.

5. Conclusion

Based on a sample of Taiwan nonprofit hospitals, this study finds that the board sizes tends to increase with the medical welfare expenditure (MWFE), charity care and

service expenditure (CCSE) and medical research and education expenditure (MREE). The statistically significant association is consistent our conjecture that more outside contact and more concerns community needs, therefore more expenditure on medical welfare activities which related to nonprofit hospitals' goal. Nevertheless, this finding also consistent with Jensen (1993) and Dyl, Frant and Stephenson (2000) conjecture that increased the board size will imply weaker board oversight. Thus, the large board size will increase non-value added activity if we teat the community benefit expenditure as expense rather than goal achievement.

This study also finds that percentage of outsider on board decreases significantly with MWFE, CCSE and MREE. Although the coefficient of percentage outsider on board, the effect is not statistically significant while the regression equation added hospitals' capacity, and market characteristic variables. This finding is consistent with the argument that outside members have great incentive to monitor the organization (Fama and Jensen 1983 a, b) if board treats community benefit expenditure as expense of nonprofit hospitals rather than major long-term objective. But contrast our argument that outside members are motivated to monitor nonprofit hospitals more seriously and the larger percentage outside member induce more medical welfare expenditure. These results suggest that the expenditures on medical welfare activities are analogous to non-valued activities rather than goal's attainment of nonprofit hospitals.

This study used public and survey data from Department of Health. However, a number of information deficiencies precluded us from dressing this important issue. For example, does the provision of medical welfare services reflect the mission or strategic intent of the nonprofit hospitals or does its control variable represent the condition of hospitals? The medical welfare expenditure might not a suitable proxy variable to measure the goal of nonprofit hospitals. More accurately survey data is necessary to express the missions and proxy variables of nonprofit hospitals.

References

Bhagat, S. and B. Black (1999). "The Uncertain Relationship between Board Composition and Firm Performance." *Business Lawye*r,54, pp. 921-963.

Bantel, K. and S. Jackson (1989). "Top Management and Innovations in Banking: Does the Composition of the Top Team Make a Difference?" *Strategy Management Journal*, 10, pp. 107-124.

Baker, M. and P. Gompers (2000). "The Determinants of Board Structure and Function in Entrepreneurial Firms." Working Paper, Harvard Business School.

Bradshaw, P., V. Murray, and J. Wolpin (1992). "Do Nonprofit Boards Make a difference? An Exploration of the Relationship Among Board Structure, Process, and Effectiveness." Nonprofit and Voluntary Sector Quarterly, 21, pp. 227-249.

Brickly, J., J.Coles, and R. Terry (1994). "Outside Directors and the Adoption of Poison Pills." *Journal of Financial Economics*, 35, pp. 371-390.

Brickly, J. and C. James (1987). "The Takeover Market, Corporate Board Composition, and Ownership Structure: The Case of Banking." *The Journal of Law and Economics*, 30, pp. 161-180.

Brickly, J. and L. Van Horn (2002). "Managerial Incentive in Nonprofit Organization: Evidence from Hospitals." Journal of Law and Economics, Vol. XLV, pp. 227-249.

Bryce, H. (2001). "Capacity considerations and community benefit expenditures of nonprofit hospitals." *Health care management review*, 63(3), pp. 24-39.

Callen, J. and H. Falk (1993). "Agency and Efficiency in Nonprofit Organizations: The Cases of "Specific Health Focus" Charities." *The Accounting Review*, 66(1), pp. 48-65.

Callen, J, A. Klein, and D. Tinkelman (2003). "Board Composition, committees, and Organization Efficiency: The Case of Nonprofit." *Nonprofit and Voluntary Sector Quarterly*, 32(4), pp. 493-520.

Davidoff, A., A. LoSasso, G. Bazzoli, and S. Zuckerman (2000). "The Effect of Changing State Health Policy on Hospital Umcompensated Care." Inquiry, 37, pp. 253-267.

Demsetz, H. and K. Lehn (1985). "The Structure of Corporate Ownership: Causes and Consequences." *Journal of Political Economy*, 93, pp. 1155-1177.

Dixit, A. (1999). "Incentives and Organization in the Public Sector: An Interpretative Review." Working paper, Princeton Unviersity.

Dixit, A. (2002). "Incentives and Organizations in the public sector: an interpretative review." *Journal of Human Resources*, 37(4), 2002, pp.696-727.

Dyl, E. A., H. L. Frant, and C. A. Stephenson (2000). "Governance and Funds Allocation in United States Medical Research Charities." *Financial Accountability and Management*, 16(4), Nov. 2000, pp. 335-352.

Eldenburg, L. B. E. Hermalin, M. S. Weisbach, and M. Wosinska (2004). " Governance, Performance Objectives and Organizational Form: Evidence from Hospitals." Journal of Corporate Finance, 10, pp. 527-548.

Fama, E. and M. Jensen (1983 a). "Separation of Ownership and Control" *Journal of Law and Economics*,

Fama, E. and M. Jensen (1983 b). "Agency Problems and Residual Claims." *Journal of Law and Economics*.

Frank, R. G. and D. Salkever, and J. Mitchell (1990). "Market Forces and the Public Good: Competition among Hospitals and the Provision of Indigent Care." Advances in Health Economics and Health Services Research, 11, pp. 159-183.

Frank, R. and D. Salkever (1991). "The Supply of Charity Services by Nonprofit Hospitals: Motives and Market Structure." The *Rand Journal Economics*, Autumn, 22, pp. 430-445.

Glaeser, E. (2003). *The Governance of Not-For-Profit Organizations.* University of Chicago Press.

Gaskin, D. J. (1997). "Altruism or Moral Hazard: The Impact of Hospital Uncompensated Care Pools." *Journal of Health Economics*, 16, pp. 397-416.

Hambrick, D. C. and R. A. D'Aveni (1992). "Top Team Deterioration as Part of the Downward Spiral of Large Corporate Bankruptcies." *Management Science*, 38, pp. 1445-1466.

Hambrick, D. C. and P. Mason (1984). "Upper Echelons: The Organization as a Reflection of its Top Managers." *Academy of Management Review*, 9, pp. 193-206.

Hansmann, H. (1987). "Economic Theories of Nonprofit Organization." In *The Nonprofit Sector: A Research Handbook*, edited by W. Powell, pp. 27-42. New Haven: Yale University Press.

Hermalin, B. and M. Weisbach (1988). "The Determinants of Board Composition." *Rand Journal of Economics*, 19. pp. 589-606.

Hermalin, B. and M. Weisbach (1991). "The Effects of Board Composition and Direct Incentives on Firm Performance." *Financial Management*, 20, pp. 101-112.

Holmstrom, B, and P. Milgrom (1991). "Multitask Principal-Agent Analysis: Incentive Contracts, Assets Ownership, and Job Design." *Journal of Law, Economics and Organization*, 7, pp. 24-52.

Holmstrom, B, and P. Milgrom (2002). "Board of Directors as an Endogenously Determined Institution: A Survey of the Economic Literature." *FRBNY Economic Policy Review*, pp. 7-26.

Katz, R. (1982). "The Effects of Group Longevity on Project Communication and Performance." *Administrative Science Quarterly*, 27, pp. 81-104.

Klein, A. (1998).”Firm Performance and Board Committee Structure.” *Journal of Law and Economics*, 41, pp. 275-303.

Miller,L. E., R. M.Weiss, and B. V. MacLeod (1988). “Boards of Directors in Nonprofit Organizations: Composition, Activities, and Organizational Outcomes.” *Journal of Voluntary Action Research*, 17, pp. 81-89.

Mock,R. A. Shiefer, and R.Vishny (1988). “Management Ownership and Market Valuation.” *Journal of Financial Economics*, 20, pp. 293-315.

Murry, A. (1989). “Top Management Group Heterogeneity and Firm Performance.” *Strategic Management Journal*, 10, pp. 125-141.

Olson, E. (2000).”Agency Theory in the Not-for-Profit Sector: Its Role at Independent Colleges.” *Nonprofit and Voluntary Sector Quarterly*, 29(2), pp. 280-296.

Provan, K. (1988). “Organization and Decision Unit Characteristics and Board Influence in Independent Versus Mulithospital System-Slliliated Hospitals.” *Journal of Health and Social Behavior*, Vol. 29 (3), (September), pp. 239-252.

Rosko, M. D. (2004). “The Supply of Uncompensated Care in Pennsylvania Hospitals: Motives and Financial Consequences.” Health Care Management Review, 29(3), pp. 229-239.

Shivdasani, A. and D. Yermack (1999). “CEO Involvement in the Selection of New Board Members.” *Journal of Finance*, 54, pp. 1829-1854.

Weisbach, M. (1988). “Outside Directors and CEO Turnover.” *Journal of Financial Economics*, 20, pp. 431-460

William, O.E. (1983). “Organization Form, Residual Claimants, and Corporate Control.” *Journal of Law and Economics*, 26, pp. 351-366.

Yermack, D. (1996). “Higher Valuation of Companies with a Small Board of Directors.” *Journal Financial Economics*, 40, pp. 185-212.

Yermack, D. (1997). “Good Timing: CEO Sstock Option Awards and Company News Announcements.” *Journal of Finance*, 52, pp. 449-476.

Young, G.. R. I. Beekun, and G. O. Ginn (1992). “Governing Board Structure, Business Strategy, and Performance of Acute Care Hospitals: A Contingency Perspective.” *Nonprofit and Voluntary Sector Quarterly*, 27, pp. 543-564.

Table 1: Descriptive Statistics

Variable	Number of Observation	Mean	Std. Dev.	Min	Max
MREE	74	1.430E+08	2.120E+08	0.000E+00	1.040E+09
CCSE	74	5.290E+07	7.950E+07	0.000E+00	3.670E+08
MWFE	92	1.660E+08	2.570E+08	2.051E+05	1.410E+09
EOB	90	4.444E-01	4.997E-01	0.000E+00	1.000E+00
OUTSIDER	78	8.341E-01	2.046E-01	3.333E-01	1.000E+00
BOARDSIZE	85	1.125E+01	2.425E+00	7.000E+00	1.500E+01
REV	92	3.120E+09	5.680E+09	7.660E+07	3.350E+10
TR	92	3.310E+09	6.040E+09	8.210E+07	3.560E+10
BED	86	9.267E+02	1.434E+03	5.700E+01	8.228E+03
NUMED	83	1.181E+03	1.891E+03	4.100E+01	9.990E+03
LDTA	92	1.358E-01	1.950E-01	0.000E+00	8.068E-01
AGE65	92	9.521E-02	1.576E-02	7.037E-02	1.326E-01
HHI	92	6.828E-02	4.773E-02	2.665E-02	1.822E-01

Note:

MREE: medical research and education expenditure ($ new Taiwan dollar);

CCSE: charity care and services expenditure ($ new Taiwan dollar);

MWFE: medical welfare expenditure including MREE and MWFE;

EOB: executive on board. As dummy variable equal 1 if executive also member of board otherwise 0;

OUTSIDERS: the proportional of outsider members to board;

BOARDSIZE: the number of board members;

BED: the number of licensed bed;

NUMED: the number of medical personnel including physicians, nurses etc.;

TR: total revenues including medical revenues, donation, and revenues other medical activities;

REV: revenues from medical activities including outpatients, inpatients and emergency activities;

AGE65: percentage of senior citizen;

HHI: Herfindahl-Hirschman index which HHI is calculated as the sum of the squared market shares.

Table 2: Pearson Correlation Coefficient

	MREE	CCSE	MWFE	EOB	OUTSIDERS	BOARD SIZE	REV	TR	BED	NUMED	LDTA	AGE65	HHI
MREE	1.0000												
CCSE	0.7369	1.0000											
MWFE	0.9810	0.8542	1.0000										
EOB	0.2044	0.0580	0.1739	1.0000									
OUTSIDERS	-0.1014	-0.1096	-0.1095	-0.4552	1.0000								
BOARDSIZE	0.4732	0.2688	0.4413	0.2447	0.3131	1.0000							
REV	0.9222	0.7609	0.9281	0.2077	-0.1740	0.3309	1.0000						
TR	0.9221	0.7552	0.9263	0.2100	-0.1712	0.3320	0.9997	1.0000					
BED	0.8792	0.7354	0.8876	0.1972	-0.1892	0.3008	0.9904	0.9904	1.0000				
NUMED	0.9313	0.7704	0.9377	0.1571	-0.1364	0.3751	0.9924	0.9913	0.9809	1.0000			
LDTA	-0.2611	-0.3706	-0.3073	0.1268	-0.3430	-0.1888	-0.2577	-0.2601	-0.2385	-0.2764	1.0000		
AGE65	-0.2288	-0.0102	-0.1789	-0.3507	0.1506	-0.0689	-0.1838	-0.1802	-0.156	-0.1804	0.1366	1.0000	
HHI	-0.2888	-0.1715	-0.2714	-0.3123	0.1303	-0.1126	-0.2655	-0.2592	-0.2206	-0.2527	0.164	0.7682	1.0000

Note: MREE: medical research and education expenditure ($ new Taiwan dollar); CCSE: charity care and services expenditure ($ new Taiwan dollar); MWFE: medical welfare expenditure including MREE and MWFE; EOB: executive on board. As dummy variable equal 1 if executive also member of board otherwise 0; OUTSIDERS: the proportional of outsider members to board; BOARDSIZE: the number of board members; BED: the number of licensed bed; NUMED: the number of medical personnel including physicians, nurses etc.; TR: total revenues including medical revenues, donation, and revenues other medical activities; REV: revenues from medical activities including outpatients, inpatients and emergency activities; AGE65: percentage of senior citizen; HHI: Herfindahl-Hirschman index which HHI is calculated as the sum of the squared market shares.

Table 3: Regression Results

	MREE	CCSE	MWFE
Panel A			
RTEEXP	Coefficient (Std. Err.)	Coefficient (Std. Err.)	Coefficient (Std. Err.)
BDOC	-3.310E+07 (6.150E+07)	-3.43E+07 (2.510E+07)	-4.090E+07 (6.650E+07)
OUTSIDERS	-3.770E+08 (1.630E+08) **	-1.47E+08 (6.680E+07) **	-3.720E+08 (1.660E+08) **
BOARDSIZE	5.700E+07 (1.210E+07) ***	1.61E+07 (4.934E+06) ***	6.930E+07 (1.310E+07) ***
_cons	-1.740E+08 (1.520E+08)	1.21E+07 (6.210E+07)	-2.680E+08 (1.590E+08)
Number of observation	63	63	78
F value	8.56 **	3.78 **	10.57 ***
R-squared	0.3032	0.1612	0.3
Adj R-squared	0.2677	0.1185	0.2716
Panel B			
BDOC	-2.300E+07 (2.660E+07)	-1.860E+07 (1.720E+07)	-2.790E+07 (2.740E+07)
OUTSIDERS	-4.230E+07 (7.560E+07)	-7.380E+07 (4.890E+07)	-7.920E+07 (7.080E+07)
BOARDSIZE	1.940E+07 (5.547E+06) *	3.419E+06 (3.590E+06)	2.150E+07 (5.757E+06) ***
REV	2.883E-02 (1.856E-03) ***	8.439E-03 (1.201E-03) ***	3.792E-02 (2.055E-03) ***
LDTA	1.820E+05 (8.270E+07)	-1.320E+08 (5.350E+07) **	-8.230E+07 (7.960E+07)
AGE65	-1.400E+09 (1.090E+09)	1.540E+09 (7.050E+08) **	5.750E+07 (1.090E+09)
HHI	1.480E+08 (3.440E+08)	-3.630E+08 (2.220E+08)	-1.560E+08 (3.400E+08)
_cons	-1.810E+07 (1.080E+08)	-4.990E+07 (7.010E+07)	-9.550E+07 (1.070E+08)
Number of observation	63	63	78
F value	62.61 ***	15.49 ***	85.43 ***
R-squared	0.8885	0.6635	0.8952
Adj R-squared	0.8743	0.6207	0.8847

Note: *** significant at 0.01 level, ** significant at 0.05 level, * significant at 0.1 level.

MREE: medical research and education expenditure ($ new Taiwan dollar); CCSE: charity care and services expenditure ($ new Taiwan dollar); MWFE: medical welfare expenditure including MREE and MWFE; EOB: executive on board. As dummy variable equal 1 if executive also member of board otherwise 0; OUTSIDERS: the proportional of outsider members to board; BOARDSIZE: the number of board members; BED: the number of licensed bed; NUMED: the number of medical personnel including physicians, nurses etc.; TR: total revenues including medical revenues, donation, and revenues other medical activities; REV: revenues from medical activities including outpatients, inpatients and emergency activities; AGE65: percentage of senior citizen; HHI: Herfindahl-Hirschman index which HHI is calculated as the sum of the squared market shares.