

# An Empirical Investigation of Joint Ventures Between For-Profit and Tax-Exempt Nonprofit Hospitals

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## ABSTRACT

This dissertation examines debt ratios, profitability, and commercial activity of the following hospitals: (i) for-profit hospitals [FP hospitals], (ii) nonprofit hospitals engaging in joint ventures [JV NP hospitals], and (iii) nonprofit hospitals that do not engage in joint ventures [Non-JV NP hospitals]. Financial variables are measured using Form 990 tax return data of nonprofit hospitals and audited financial statements of for-profit hospitals.

The purpose of the study is to compare: (1) JV NP hospitals versus FP hospitals and (2) JV NP hospitals versus Non-JV NP hospitals. Potential similarities between FP and JV NP hospitals may indicate nonprofit partners are becoming indistinguishable from for-profit entities, which may further call into question the applicability of tax-exempt status for these nonprofit hospitals.

Results indicate significant differences exist in debt ratios between FP and JV NP hospitals. A lack of significant differences in profitability lends support to the argument that JV NP hospitals may exhibit similarities in financial characteristics to for-profit hospitals.

Regarding comparisons within the nonprofit sector, significant differences were found in profitability and unrelated business income percentages. Differences in debt ratios were not found between the two groups - which fail to support Internal Revenue Service (IRS) arguments that there is something 'special' about JV NP hospitals. JV NP hospitals reported *lower* profitability on all measures than Non-JV NP hospitals. Findings of lower profitability are consistent with arguments that JV NP hospitals are attempting to improve their financial condition by partnering with for-profit hospitals. Significant differences were not found in contributions received as a percentage of total revenue between the nonprofit hospital groups.

This dissertation contributes to existing literature that compares nonprofit and for-profit hospitals through reliance on tax return data of nonprofit hospitals. Tax returns serve as a primary source for the public and IRS to scrutinize a nonprofit organization's financial operations. The IRS uses tax return data to evaluate a hospital's activities, measure its charitable activities and scrutinize the organizations' tax-exempt status. Investigating these differences using actual tax return data provides support to the argument that nonprofit hospitals engaging in joint ventures exhibit similarities to for-profit hospitals.

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# Chapter 1

## Introduction and Motivation

The Internal Revenue Service (IRS) has heightened its scrutiny of tax-exempt nonprofit (NP) hospitals (Salins et al. 1998, Wright 2000). This scrutiny is the result of an increased trend of joint ventures between NP and for-profit (FP) hospitals (Salins et al. 1998, Whitehead 1998). Joint ventures in the healthcare industry are commonly formed to operate 'ancillary health care services' [such as MRI facilities and ambulatory surgery centers] (Salins et al. 1998). Nonprofit hospitals seek out these types of transactions for various reasons, including the ability to provide new or continued health care services, to improve the organization's financial condition, increased working capital needs, to reduce financial risk, the expansion of the quality of services provided, the achievement of economies of scale, and to increase cost savings (Tsilas 1997, Petroff 1998, Salins et al. 1998, Tuckman 1998, Sansing 2001)<sup>1</sup>. The IRS may have further reason to scrutinize these joint ventures because for-profit hospital partners may receive favorable tax allocations. For-profit partners may attempt to structure the joint venture in order to defer income recognition and accelerate deductions for tax reporting purposes (Internal Revenue Code 168(g))<sup>2</sup>.

In response to this trend of joint ventures, the IRS issued Revenue Ruling 98-15, 1998-12 IRB 6 (hereafter 'The Ruling') in order to provide nonprofit hospitals "guidance on the tax consequences" of these types of joint ventures (Salins et al. 1998, Peregrine and Sullivan 1998, Petroff 1998). This Ruling provides guidance regarding nonprofit hospitals engaging in whole-hospital joint ventures. A whole hospital joint venture involves a nonprofit hospital contributing

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<sup>1</sup> Nonprofit entities also use the profits earned from "commercial" activities (i.e. joint ventures) in order to subsidize the organization's "nonprofit" activities (Clark 1980, Weisbrod 1998, Sansing 2001).

<sup>2</sup> For example, IRC Code 168(h(6)) is directed at preventing special depreciation allocations when tax-exempt organizations are partners in a partnership with a for-profit entity.

most (or all) of its assets in return for a proportionate share of the joint venture interest. The joint venture itself can take numerous forms - a corporation, partnership or limited liability company (LLC) - with a common form being the LLC (Salins et al. 1998, Whitehead 1998). The resulting LLC is considered either a partnership or a corporation for tax return purposes. The LLC owns the assets of the hospital and oversees the operation of the hospital (Salins et al. 1998, Whitehead 1998, Boisture et al. 1997). The tax-exempt hospital receives distributions of income from the joint venture. According to Salins et al. (1998) "the remaining exempt entity exists only to make grants from its distributions and to participate in the joint venture" (20).

The Ruling emphasizes that the joint venture should further the charitable purposes of the exempt partner. Thus the focus of the nonprofit partner should be on its exempt status and *not* on profit maximization. The Exempt Organizations Technical Topics publication of the IRS claims the Ruling "does require that charitable purposes supersede profit maximization purposes" (Salins et al. 1998, 19). The IRS is attempting to ensure that the joint venture furthers the charitable purpose of the hospital and any private benefit is not "greater than incidental" (Salins et al. 1998).

It is intriguing that the IRS would need to emphasize pursuing charitable purposes, rather than profit maximization by nonprofit hospitals. For the IRS to specifically mention profit maximization implies the possibility that nonprofit hospitals are seeking to maximize profits through these joint ventures. This further implies these nonprofit hospitals may exhibit similar financial characteristics to for-profit organizations. Increases in commercial activity, such as joint ventures, conducted by nonprofit hospitals raises concern regarding whether or not certain nonprofit hospitals are becoming indistinguishable from for-profit firms, thus questioning the applicability of their tax-exempt status (Weisbrod 1998). If nonprofit hospitals engaging in joint ventures are becoming indistinguishable from for-profit hospitals in certain situations, then this implies they exhibit financial characteristics that are different from other types of nonprofit hospitals.

The purpose of this dissertation is to determine whether nonprofit hospitals engaging in joint ventures (hereafter JV NP hospitals) are similar to FP hospitals. This study seeks to investigate whether significant differences in certain financial characteristics exist between JV NP hospitals and FP hospitals. This study also compares financial characteristics of JV NP hospitals to those nonprofit hospitals that do not engage in joint ventures (hereafter Non-JV NP

hospitals). Potential similarities between for-profit and nonprofit hospitals engaging in joint ventures could indicate nonprofit partners are becoming indistinguishable from for-profit entities. This will further call into question the applicability of tax-exempt status for these hospitals.

The issue of nonprofit organizations engaging in commercial activities is often debated in the literature (Weisbrod 1998, Tuckman 1998, Cordes and Weisbrod 1998). Nonprofit entities are organized to promote their charitable activities, but these organizations are often compared to for-profit entities when they choose to engage in commercial activities. Cordes and Weisbrod (1998) argue that nonprofits are increasingly relying on commercial activities in conjunction with the growth of economic importance in the nonprofit sector. Weisbrod (1998) points out that increasing commercial activities by nonprofit organizations raises the question of whether they are becoming "indistinguishable" from private firms. Tuckman (1998) argues commercialism occurs when nonprofits seek to produce goods/services "with the explicit interest of earning a profit" [177]. The growing commercialism exhibited by nonprofit organizations, in order to generate revenues, may threaten the organizations' charitable missions (Weisbrod 1998).

Prior research has compared nonprofit and for-profit firms in many areas, including quality of service, pricing, and unfair competition (Meltsner 1998, Herzlinger and Krasker 1987, Arrington and Haddock 1990, Marsteller et al. 1998, Hoerger 1991, Dranove and White 1994). Nonprofit organizations are also compared to for-profit entities in an attempt to value their tax-exempt treatment (Gentry and Penrod 2000, Sanders 1995). Existing literature has used financial measures such as debt and profitability to compare nonprofit and for-profit organizations (Gentry and Penrod 2000, Hoerger 1991, Watt et al. 1986, Lewin et al. 1981). However, the literature has failed to compare these entities strictly on financial measures in order to determine if nonprofit organizations behave similarly to for-profits in certain circumstances.

Prior research has relied on data from Medicare cost reports (submitted to the Health Care Financing Administration) and annual American Hospital Association (AHA) Annual Survey data (Gentry and Penrod 2000, Watt et al. 1986, Hoerger 1991). Actual tax return data has not been used to investigate the financial characteristics of nonprofit hospitals due to data availability issues. This dissertation contributes to the existing literature by using actual Form 990 tax return data from the Internal Revenue Service (IRS) Statistics of Income (SOI) Sample Files [provided by the National Center for Charitable Statistics (NCCS)]. This data was used to

examine certain financial characteristics of nonprofit hospitals engaging in joint ventures with for-profit firms. Furthermore, financial statement data obtained from the Securities and Exchange Commission's online database (EDGAR) and Lexis-Nexis were used to examine the characteristics of for-profit hospitals.

This dissertation contributes to the existing literature that compares nonprofit and for-profit hospitals through its reliance on actual tax return data of nonprofit hospitals. Tax returns serve as a primary source for the public and IRS to scrutinize a nonprofit organization's financial operations. The IRS uses tax return data to evaluate a hospital's activities, measure its charitable activities and scrutinize the organizations' tax-exempt status. The use of tax return data in this dissertation assists in determining whether nonprofit hospitals are becoming indistinguishable from for-profit firms. This investigation also seeks to determine if nonprofit hospitals seek profit-maximization in certain situations (such as joint ventures). Furthermore, investigating these differences using actual tax return data may provide support to the argument that nonprofit hospitals engaging in joint ventures exhibit similarities to for-profit hospitals. This argument may also be supported through the investigation of the commercial activity conducted by nonprofit hospitals. Nonprofit hospitals reporting commercial activities on their tax returns may indicate behavior that is similar to their for-profit counterparts.

Results indicate for-profit hospitals report significantly higher debt ratios than JV NP hospitals, which is consistent with prior research. Both FP and JV NP hospitals reported low average profitability, measured by return on equity and return on assets. The difference in profitability was not statistically significant on either measure. This lack of a significant difference in profitability lends support to the argument JV NP hospitals may exhibit similarities in financial characteristics to for-profit hospitals. Furthermore, since both hospital groups exhibit financial difficulty during the period investigated, partnering in a joint venture may be seen as beneficial to their financial condition.

Regarding comparisons within the nonprofit sector, the debt to asset ratios of JV NP hospitals were not statistically different from those of Non-JV NP hospitals. This finding fails to support IRS arguments that there is something 'special' about JV NP hospitals making these organizations different from other nonprofit hospitals that choose not to engage in joint ventures with for-profit hospitals.

Significant differences in profitability were found between JV and Non-JV NP hospitals, however the direction is opposite of that hypothesized. JV hospitals reported *lower* profitability on all measures than Non-JV NP hospitals. This exhibition of lower profitability partially supports the argument there are innate differences between these types of nonprofit hospitals, but it does not support the argument that JV NP hospitals exhibit actual characteristics of for-profit hospitals. These findings are consistent with arguments that JV hospitals are attempting to improve their financial condition by partnering with a for-profit hospital.

Regarding commercial activity, significant differences in unrelated business income were found between the nonprofit hospitals. JV NP hospitals exhibited significantly higher median unrelated business income percentages than Non-JV NP hospitals, thus supporting the argument JV NP hospitals are different from other nonprofit hospitals. The other measure of commercial activity - contributions received as a percentage of total revenue - was not found to be different between the two nonprofit hospital groups. JV NP hospitals reported lower percentages, as expected, but the difference was not statistically significant.

The paper is organized as follows: Chapter 2 explains the tax law that is applicable to nonprofit organizations. Chapter 3 reviews relevant prior literature and Chapter 4 develops the hypotheses. Chapter 5 discusses the methodology, with Chapter 6 containing the results. Chapter 7 discusses the contributions and limitations of the study.

## Chapter 2

### Background Information

Contrary to public perception, nonprofit organizations are allowed to earn a "profit" that is comparable to that of for-profit organizations (Hopkins 1998). According to Hopkins (1998) nonprofit organizations are legally allowed to generate a profit - what is termed the entity level profit. However, a nonprofit organization may not generate an 'ownership level' profit (Hopkins 1998). Unlike for-profit organizations, "the nonprofit organization seeks to devote its profits to ends that are beneficial to society" (Hopkins 1998, 5). Nonprofit organizations are incorporated at the state level and are prohibited from distributing their profits to those who control the organization (i.e., board of directors or officers) (Hopkins 1998, Swords 1998). This inability to pass any earned profit to officers for their private benefit is a key distinction between nonprofit and for-profit organizations (Hopkins 1998, Marsteller et al. 1998, Swords 1998, Hoffman et al. 1999, Gentry and Penrod 2000).

#### 2.1 Tax Exempt Status

Another common public misconception is that all nonprofit organizations are tax-exempt at the Federal level. The Federal government *grants* tax exemption only after the nonprofit has applied for exemption. Hopkins (1998) emphasizes that a "tax-exempt organization is a nonprofit", but a "nonprofit is not necessarily tax-exempt".

The IRS grants federal tax exemption to certain nonprofit organizations in Section 501 of the Internal Revenue Code (IRC). The IRS provides 22 statutory authorities listing the types of nonprofit organizations that have received tax-exempt status (IRC 501(a)). IRC Section 501(c)(3) grants exemptions to "corporations, and any community chest, fund, or foundation, organized and operated exclusively for religious, charitable, scientific, testing for public safety, literary, or educational purposes...". Tax-exempt hospitals qualify for exemption based on IRC Section 501(c)(3). A nonprofit organization that receives tax exemption is generally excused

from the following taxes: Federal income tax, and most state and local income, franchise, sales and property taxes. Tax-exempt organizations may also qualify for reduced postage rates and may receive contributions that are deductible by donors (Hoffman et al. 1999).

In granting tax exemptions, the IRS requires nonprofit organizations to have certain characteristics. These characteristics include (but are not limited to): a) the organization serves a common good, b) the organization is *not* a for-profit entity, c) the net earnings of the organization do not benefit the owners, and d) the organization does not exert political influence (IRC Section 501(c)(3), Swords 1998, Hoffman et al. 1999). The IRS does not specifically define a 'for-profit entity' in determining characteristics for tax-exemption. It may be inferred that the IRS wants to ensure that a nonprofit organization distinguishes itself from a for-profit entity through requiring the organization to pursue its charitable purposes.

One of the significant IRS requirements that a nonprofit must meet is the private inurement doctrine. This doctrine dictates what a nonprofit organization is allowed to do with any profits earned (Hopkins 1998). IRC Section 501(c)(3) states "... no part of the net earnings of which inures to the benefit of any private shareholder or individual, no substantial part of the activities of which is carrying on propaganda, or otherwise attempting, to influence legislation...". Potential loss of tax-exempt status may occur if the private inurement doctrine is violated (Hoffman et al. 1999).

## 2.2 Joint Ventures

A joint venture is created when two or more parties enter into a contractual agreement in order to invest in a project. The parties agree to share the benefits, control and risks of the particular project (Coopers and Lybrand 1995, Tsilas 1997). Joint ventures are also considered special combinations where a profit is sought without partnership or corporate designation (Tsilas 1997). Joint ventures in the hospital industry are commonly formed to operate "ancillary health care services" [such as MRI facilities and ambulatory surgery centers] (Salins et al. 1998, Tuckman 1998). A joint venture may take several forms: joint operating agreements, partnerships, limited liability companies and whole hospital joint ventures.

Joint operating agreements (JOAs) do not involve the creation of a separate entity to manage or operate the venture. Neither does the arrangement involve a change in asset

ownership. The involved parties enter into a contractual agreement to work together and the agreement specifies each party's financial contribution (Tsilas 1997).

IRC Section 7701(a)(2) defines a partnership to include "a syndicate, group, pool, joint venture, or other unincorporated organization, through or by means of which any business, financial operation, or venture is carried on...". A nonprofit hospital may be designated as either a general partner or as a limited partner when engaging in a joint venture that takes the form of a partnership (Tsilas 1997). A partnership is not considered a taxable entity, but any taxable income/loss flows directly to the partners (IRC Sections 701 and 702, Hoffman et al. 1999). Limited liability companies (LLCs) are created at the state level and are similar to partnerships in terms of a single level of tax (Hoffman et al. 1999). Another feature of LLCs is limited liability - the LLC members are shielded from personal liability for the entity level debts.

Whole hospital joint ventures involve a nonprofit hospital contributing most (or all) of its assets in return for a proportionate share of the joint venture interest. The nonprofit hospital surrenders ownership of its assets, and the venture oversees the operation of the hospital (Salins et al. 1998, Whitehead 1998, Boisture et al. 1997). The tax-exempt hospital receives distributions of income from the joint venture. According to Salins et al. (1998) "the remaining exempt entity exists only to make grants from its distributions and to participate in the joint venture".

Since the nonprofit hospital transfers most (or all) of its assets in this type of transaction, practitioners often ask why a nonprofit hospital would engage in a whole hospital joint venture (Reaves and Gerzog 1999). Several factors serve as motivations to nonprofit hospitals entering whole hospital joint ventures (Tsilas 1997, Petroff 1998). Some of these factors include increased working capital needs, the ability to provide new or continued health care services, expansion of the range and quality of services, increased efficiency and cost savings, access to potentially larger managed care contracts, and potential access to funding for the organization's charitable activities (Tsilas 1997, Petroff 1998, Salins et al. 1998, Tuckman 1998, Sansing 2001)<sup>3</sup>. According to Petroff (1998), whole hospital joint ventures are not tax-motivated, but driven by non-tax factors such as expansion of services, improved operational efficiency and increased capital by means other than through the issuance of bonds. Another motivating factor

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<sup>3</sup> Nonprofit entities also use the profits earned from "commercial" activities (i.e. joint ventures) in order to subsidize the organization's "nonprofit" activities (Clark 1980, Weisbrod 1998, Sansing 2001).



is the creation of synergy among the organizations. If the nonprofit partner is able to create synergy through the joint venture, then it may be able to better serve its patients.

Given these numerous motivating factors, whole hospital joint ventures have become increasingly popular among nonprofit hospitals. Petroff (1998) states that 1994 saw a surge in whole hospital joint ventures. This trend continued with reports of at least eleven completed whole hospital joint venture transactions in 1995 (Mills 1996).

### 2.3 Revenue Ruling 98-15

The IRS has previously provided guidance regarding the tax consequences of a nonprofit organization engaging in joint ventures with for-profit organizations. In GCM 36293 (May 30, 1975) the IRS argued that participation in a joint venture was 'per se' inconsistent with the exempt organization's continued exempt status (Tsilas 1997, Petroff 1998, Royalty and Flynn 1999). This 'per se' position changed in 1980 based upon the *Plumstead Theatre* decision<sup>4</sup>. In *Plumstead*, a tax-exempt theatre organization formed a limited partnership with a for-profit corporation in order to produce a play. The Tax Court held that the tax-exempt organization was 'organized and operated exclusively for charitable and educational purposes under section 501(c)(3)' therefore the organization's involvement in the partnership did not conflict with its tax-exempt purpose. The finding was based on the following issues: (i) the partnership was formed based on an arm's length transaction; (ii) the nonprofit was not required to return the limited partners' capital contributions from the organization's own funds; (iii) the partnership did not have an interest in the exempt organization; (iv) the limited partners did not have control over the nonprofit organization's activities and (iv) none of the limited partners had any involvement in the nonprofit organization (Tsilas 1997, Peregrine and Sullivan 1998, Petroff 1998, Sansing 2001).

As a result of the *Plumstead* decision, the IRS began using a two-prong test for analyzing joint ventures involving tax-exempt and for-profit organizations (Petroff 1998). This two prong test [based on GCM 39005 (June 28, 1983)]: (1) analyzes whether the joint venture furthers a charitable purpose and (2) analyzes whether the arrangement results in more than incidental private benefit (Tsilas 1997, Petroff 1998, Peregrine and Sullivan 1998). The IRS has provided

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<sup>4</sup> *Plumstead Theatre Society v. Commissioner*, 74 T.C. 1324 (1980), aff'd, 675 F.2d 244 (9th Cir. 1982).

additional guidance on the treatment of tax-exempt organizations' involvement in joint ventures<sup>5</sup>. The IRS has also issued several private letter rulings that assist in determining whether or not an exempt organization's participation in a joint venture with a for-profit organization satisfies a charitable purpose<sup>6</sup>. In these rulings, the IRS determined that the exempt organization's tax-exempt status was not threatened by its participation in the joint venture (Tsilas 1997).

The guidance provided by the IRS failed to address the tax consequences of a nonprofit organization entering a whole hospital joint venture with a for-profit organization. The IRS provided this type of guidance on March 23, 1998 with the release of Rev. Rul. 98-15 (Meyer 1996, Tsilas 1997, Arthur Andersen 1998, Petroff 1998, Peregrine and Sullivan 1998, Salins et al. 1998, Whitehead 1998, Sansing 2001). This Ruling addresses whether or not an acute care hospital will continue to qualify for tax-exemption when it forms a LLC with a for-profit corporation, after the exempt hospital contributes its operating assets to the LLC. The for-profit corporation contributes assets to the LLC in return for its ownership percentage. The nonprofit hospital will use any distributions to fund grants to support community health care (Royalty and Flynn 1999). Figure 1 graphically represents the structure of a whole hospital joint venture, as presented in Salins et al. (1998).

The Ruling provides descriptions of two situations with distinct fact patterns and dissimilar tax consequences: (1) the participation in the whole hospital joint venture is consistent with continued tax-exemption and (2) the exempt organization's participation threatens its tax-exempt status (Arthur Andersen 1998, Mancino 1998, Whitehead 1998, Peregrine and Sullivan 1998, Petroff 1998).

In Situation 1 the operating agreement calls for the board of directors to consist of three individuals chosen by the nonprofit and two individuals chosen by the for-profit organization. Major decisions such as operating budgets and the distribution of earnings require approval from a majority of three board members. The agreement also calls for the joint venture to "operate any hospital it owns in a manner that furthers charitable purposes by promoting health for a broad cross section of its community" (Rev. Rul. 98-15). The day-to-day operations of the joint venture are handled through an unrelated management company (Tsilas 1997, Peregrine and

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<sup>5</sup> Refer to GCM 39546, GCM 39732, and GCM 39862.

<sup>6</sup> Refer to LTR 9637050, LTR 9517029, LTR 9308034, LTR9318033, LTR 9323030, LTR 9319044, and LTR 9352030.

Sullivan 1997, Petroff 1998, Royalty and Flynn 1999). The IRS states that the facts and circumstances of Situation 1 permit the nonprofit partner to "further its charitable purposes and continue to be operated exclusively for exempt purposes" (Rev. Rul. 98-15). Furthermore, the nonprofit partner in Situation 1 was found to incidentally operate for the purpose of benefiting private interests.

In Situation 2 the governing board is made up of six individuals, equally chosen by the nonprofit and for-profit partners. The agreement calls for distributions and returns of capital to be made in proportion to ownership interests. The management company that handles day-to-day operations is a wholly-owned subsidiary of the for-profit partner. The joint venture's purpose is to "construct, develop, own, manage, operate, and take other action in connection with operating the health care facilities it owns and engage in other health care related activities" (Rev. Rul. 98-15). The IRS concluded in Situation 2 that the nonprofit partner violated tax exemption requirements of IRC Section 501(c)(3) when it formed the joint venture. The nonprofit partner in this situation "failed to establish that it will be operated exclusively for exempt purposes" (Rev. Rul. 98-15).

Rev. Rul. 98-15 established a facts and circumstances test to determine if a nonprofit partner will lose its tax-exempt status by engaging in whole hospital joint ventures (Royalty and Flynn 1999). The loss of tax-exempt status depends on the facts and circumstances of the transaction, with control of the joint venture appearing as a critical factor<sup>7</sup> (Petroff 1998, Salins et al. 1998, Royalty and Flynn 1999, Sansing 2001).

The issuance of Rev. Rul. 98-15 has led to numerous discussions in the healthcare industry regarding the Ruling's implications. On January 28, 1999, Columbia/HCA announced that it would dissolve the joint venture formed in 1996 with the Arlington Health Foundation. Reports indicate that the dissolution was based on the "inability of the parties to obtain a ruling from the IRS sanctioning the venture structure" (Reaves and Gerzog 1999, 455). Some practitioners argued that this decision would lead to the 'unwinding' of similarly structured joint ventures by Columbia and other for-profit health care providers (Reaves and Gerzog 1999). Reaves and Gerzog (1999) also indicated that failure to obtain a favorable ruling may indicate the IRS's intent to apply the Ruling in a very strict manner.

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<sup>7</sup> The nonprofit partner should maintain sufficient control over its activities in order for the operations to be considered exclusively for exempt purposes. Salins et al. (1998) discuss that this is "not a narrow look at control" [14], but the facts and circumstances of the particular case are relevant.

Wright (2000) points out that two years after the issuance of Rev. Rul. 98-15, the IRS is continuing its scrutiny of nonprofit hospitals. At the 2000 AICPA National Health Care Industry Conference, Thomas Miller, manager of the Exempt Organization Technical, Tax Exempt/Government Entities Division of the IRS, discussed Rev. Rul. 98-15 and details of the IRS's coordinated examination program (Wright 2000). According to Miller, the IRS examines the kinds of activities the joint venture will engage in when the provision of health care is not undertaken. When charity care is provided, the IRS will scrutinize the joint venture's business plan and the joint venture's definition of charity care. IRS agents will also examine whether or not tax-exempt hospital assets are transferred to the joint venture based on fair market value, and how the board of directors and the partnership entity are structured (Wright 2000).

Miller also discussed the distinction between private benefit and private inurement (Wright 2000). Miller pointed out that joint ventures involving a tax-exempt hospital must further the exempt purpose of "promoting community health" and not confer excess private benefit to insiders (Wright 2000). Miller also stated "private inurement is sometimes confused with private benefit. While all inurement is private benefit, not all private benefit constitutes inurement" (Wright 2000). Some private benefit is permissible when "bestowed on noninsiders" (Wright 2000).

## 2.4 Unrelated Business Income

Section 511 of the IRC imposes a federal tax on the unrelated business taxable income of charitable organizations (i.e. organizations that are exempt under IRC Section 501(c)) (Hoffman et al. 1999). Unrelated business taxable income (UBTI) is defined in IRC Section 512 as:

"gross income derived by any organization from any unrelated trade or business regularly carried on by it, less the deductions allowed by this chapter which are directly connected with the carrying on of such trade or business".

IRC Section 513 defines an unrelated trade or business as:

"any trade or business the conduct of which is not substantially related (aside from the need of such organization for income or funds or the use it makes of the profits derived) to the exercise or performance by such organization of its charitable, educational, or other purpose..."

Therefore, UBTI results when a nonprofit organization conducts a trade or business that is regularly carried on and that is not substantially related to its exempt purpose (Tsilas 1997, Hopkins 1998, Hoffman et al. 1999).

According to Peregrine and Sullivan (1998), Rev. Rul. 98-15 implicitly raises the question of whether or not UBTI results from the tax-exempt hospital engaging in a whole hospital joint venture. A tax-exempt organization that is a partner in a partnership must examine the income and deduction items flowing from the partnership. These items must be examined individually to determine the appropriate reporting for tax return purposes, i.e. determine whether or not the income is considered UBTI (Peregrine and Sullivan 1998).

Most exempt organizations are required to file an annual tax return - Form 990 (Return of Organization Exempt from Income Tax) [IRC Section 6033(a)(1), Hoffman et al. 1999]. Form 990 is an informational return that reports the organization's financial operations. Exempt organizations that report unrelated business income may be required to file Form 990-T (Exempt Organization Business Income Tax Return). Form 990-T is required if the organization has at least \$1,000 of gross UBTI. Taxable income reported on Form 990-T is subject to the Federal corporate income tax rates (similar to for-profit organizations).

## 2.5 Various Economic Issues Impacting Nonprofit Organizations

Economists in public policy literature have expressed concern regarding nonprofit organizations exhibiting similarities to for-profit organizations (Tuckman 1998, Weisbrod 1998). Nonprofit organizations face certain dilemmas when involved in commercial activities. They include an increased likelihood that the organization's mission will become more ambiguous, and an increased difficulty in balancing its charitable missions with commercial activity (Tuckman 1998, Weisbrod 1998). The public sector will also have increased difficulty in evaluating an organization's operations when it includes commercial activities (Tuckman 1998).

The overall purpose of a nonprofit organization cannot be placed in a single category. Since nonprofit organizations cannot distribute their earnings, Marsteller et al. (1998) argues that these types of entities are "organized for purposes other than to produce returns to their owners". Numerous purposes for nonprofit organizations exist including providing benefits to the general community and serving a public good (Marsteller et al. 1998). For hospitals, some specific

purposes include free care to the needy, benefits for the general public, and a provision of quality care to patients (Marsteller et al. 1998). These 'public good' purposes are not found to apply to for-profit entities, which seek profit maximization.

It is often assumed that the behavior of a firm (in general) is driven by the desire to maximize profits. This assumption may not be valid for hospitals considering a significant portion of hospitals are organized as nonprofit entities (over 70% according to Santerre et al. 2000). Nonprofit organization behavior is often described in terms of utility maximization. An example of utility maximization is the quality maximization model, which states managers attempt to maximize their personal utility functions (Santerre et al. 2000). Lee (1971) describes a model for hospitals that appears consistent with quality maximization. This model is based on the premise that managers of nonprofit organizations attempt to maximize utility (i.e., the quality of the firm) through enhancing the image of the institution. Managers attempt to achieve a desired level of status and the hospital must provide a certain quality of care to achieve this status level<sup>8</sup>.

Comparisons between nonprofit and for-profit hospitals are often made because utility maximization best describes nonprofit hospitals, while profit-maximization describes for-profit hospitals. These comparisons are necessary considering nonprofit and for-profit entities are in the same industry and provide similar types of care to their patients. Marsteller et al. (1998) analyzes certain constraints and choices facing hospitals to determine if any discernable distinctions can be made between for-profit and nonprofit firms. The distinctions relate to the pricing strategies of the hospitals. They illustrate that nonprofit hospitals could face two motivations for their pricing strategy - maximize profits or maximize the number of paying patients by lowering prices. According to their analysis, economic theory suggests that the prices of nonprofit and for-profit hospitals may be very similar despite the differences in motivation based on ownership type.

The Marsteller et al. (1998) study argues that no general behavioral model exists for nonprofit organizations that can explain the possible motivations of these organizations, and it is not possible to empirically distinguish between the specific nonprofit models and the profit

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<sup>8</sup> Newhouse (1970) and Feldstein (1971) extended the quality maximization model by incorporating both quantity and quality maximization. A trade-off exists for managers who are trying to maximize the quality of services provided, while at the same time maximizing the quantity produced. Since this trade-off exists, a mixture of quantity and quality must be used to maximize a manager's personal utility (Santerre et al. 2000, Yoder 1986).

maximization model. They point out, however, that it should not be presumed that nonprofits act exactly like for-profit entities. Dranove and White (1994) also question whether theoretical reasons exist for nonprofit hospitals to deviate from the profit-maximizing model. They conclude that there are "important theoretical differences" between for-profit and nonprofit hospitals but their behavior may be similar.

In summary, distinct differences exist between nonprofit and for-profit hospitals, particularly due to the inability of nonprofit hospitals to pass earnings on to those who control the organization (Hopkins 1998, Marsteller et al. 1998, Swords 1998, Hoffman et al. 1999, Gentry and Penrod 2000). Despite these differences, nonprofit and for-profit hospitals may exhibit similar behavior, as argued by Dranove and White (1994). These similarities may come in the form of similar financial characteristics because both hospital forms generate revenues from services and issue debt (Gray 1986).

## Chapter 3

### Literature Review

#### 3.1 Characteristics of Nonprofit and For-Profit Organizations

Prior literature has investigated differences between nonprofit and for-profit entities for numerous reasons. Some of these reasons include valuing the tax-exemption received by nonprofit hospitals (Gentry and Penrod 2000), examining the level of commercial activity conducted by nonprofit organizations (Cordes and Weisbrod 1998, Weisbrod 1998), and examining certain fundamental characteristic differences such as profitability (Watt et al. 1986, Lewin et al. 1981, Hoerger 1991). Non-financial differences have also been investigated in the literature to compare social benefits derived from nonprofit organizations (Herzlinger and Krasker 1987, Arrington and Haddock 1990). Cost reports and annual survey data have been the primary data sources for the existing literature. This literature review focuses on financial characteristic comparisons between nonprofit and for-profit organizations because of this study's purpose of comparing specific financial characteristics and its reliance on tax return and financial statement data.

It is necessary to determine the fundamental characteristics of nonprofit and for-profit organizations since they appear to follow different maximization strategies. Distinctions between for-profit and nonprofit organizations often address ownership issues, the distribution of earnings, and sources of capital. Gray (1986) states that a number of these distinctions are used as a basis for the assumption that differences exist in the institutional behavior of these types of organizations. Table 1 is a replication of characteristic distinctions between for-profit and nonprofit entities as provided in *For-Profit Enterprise in Health Care* (1986). One clear distinction between the two types of organizations is the ownership structure: investors own for-profit corporations whereas nonprofits are considered corporations without owners. Despite the lack of 'owners' nonprofit organizations are often controlled by officers and board of directors (Gray 1986, Swords 1998). Distribution of earnings is another distinguishing factor between



nonprofit and for-profit organizations. For-profit organizations are allowed to distribute some portion of its profits to its owners (for example, dividend payments), while nonprofits must retain its profits within the organization (in order to further promote its charitable activities) (Gray 1986, Swords 1998, Hoffman et al. 1999).

Both nonprofit and for-profit organizations exhibit two similar sources of capital: debt and retained earnings. 'Fund balance' is the label for retained earnings in a nonprofit organization for financial statement reporting purposes. According to Larkin and DiTommaso (1999), fund balance is a "numerical representation of the net worth of the organization" [62]. It also represents the "accumulation of surpluses or deficits the corporation achieved since its beginning" (McLaughlin 1995; 30). Changes in the net assets<sup>9</sup> (or fund balance) of a nonprofit organization occur due to transactions where "assets and liabilities change by different amounts" (Larkin and DiTommaso 1999; 75). An example of this type of transaction includes the receipt of assets by donors who do not expect "to receive either repayment or proportionate economic benefit in return" (Larkin and DiTommaso 1999; 75).

Both organizational forms are permitted to issue debt and maintain equity accounts. The two organizational forms also exhibit similar revenue sources, such as those generated from services. In addition to generating service revenue nonprofit organizations may also rely on charitable contributions for additional capital needs (Gray 1986, Swords 1998, Hoffman et al. 1999).

Extant literature has attempted to compare nonprofit and for-profit hospitals on various factors. These factors include debt, profitability, commercial activity and size (Cordes and Weisbrod 1998, Gentry and Penrod 2000, Hoerger 1991 and Watt et al. 1986). Many of the comparisons are based on the economic literature argument that nonprofit organizations do not follow their for-profit counterparts in seeking profit maximization (Santerre et al. 2000). It is often argued that nonprofit organizations follow either quantity maximization or a combination of quantity and quality maximization strategies (Santerre et al. 2000).

Consistent with prior literature, this study investigates certain hospital financial characteristics, including debt, profitability, and commercial activity revenue. Prior research has consistently found significant differences between nonprofit and for-profit organizations on these

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<sup>9</sup> SFAS 117 allows for nonprofit organizations to report net assets in three classes - unrestricted, temporarily restricted, or permanently restricted. These restrictions are donor-imposed (Larkin and DiTommaso 1999).

constructs. Empirical results show that for-profit hospitals exhibit higher debt levels than nonprofit hospitals (Watt et al. 1986). Prior results have also shown that for-profit hospitals are more profitable than nonprofit hospitals (Gentry and Penrod 2000, Watt et al. 1986, Pattison 1986, Pattison and Katz 1983). Commercial activity is examined in prior literature only within the nonprofit sector. Prior empirical results indicate that larger nonprofit organizations engage in commercial activity and nonprofit hospitals tend to report commercial activity revenue more often than other nonprofit organizations (Cordes and Weisbrod 1998). Prior research focuses on nonprofit hospitals in 'general', but has failed to investigate nonprofit hospitals engaging in particular transactions. This study contributes to the existing literature by investigating whether differences in financial characteristics exist when nonprofit hospitals engage in joint ventures with for-profit organizations. Furthermore, prior research investigating nonprofit organizations has not consistently relied on tax return data for analysis.

### 3.2 Debt

Watt et al. (1986) examined differences in the economic performance of multi-hospital systems. They separated differences associated with system membership (i.e. individual hospitals vs. group hospital membership) from those associated with ownership form (i.e. nonprofit vs. for-profit). They examined capital structure in their comparison of nonprofit and for-profit hospitals. They also compared investor-owned hospitals (i.e., for-profit) with nonprofit hospitals on both a freestanding (i.e. individual) level and on a system-based level. A sample of 561 hospitals was obtained through a stratified random sampling of 4,491 general acute care hospitals in 1980.

They used various financial ratios to measure the capital structure of hospitals - including debt to asset ratios, current ratios, capital cost percentages, and total fixed assets per bed. The authors argue that these measures "provide insight into financial strategies followed by hospitals" [264]. Audited Medicare cost reports and American Hospital Association (AHA) Annual Survey data served as the source for the variable measurements. Their analysis of capital structure found that for-profit hospital systems have higher levels of debt than nonprofit hospital systems (as measured by the debt to assets ratio). Individual for-profit hospitals also exhibit higher debt to asset ratios than individual nonprofit hospitals. The use of the current ratio did not reveal

statistically significant differences between nonprofit and for-profit hospitals. Since only the debt to asset ratio is different between the hospital types, this indicates for-profit hospitals utilize more long-term debt than nonprofit hospitals. The lack of consistent findings among the measurements of debt could also imply the possibility that results are dependent on the measure chosen to represent the debt construct.

### 3.3 Profitability

Profitability is a financial characteristic that has been investigated in prior literature comparing nonprofit and for-profit organizations. Pattison and Katz (1983) investigated investor-owned (i.e. for-profit) hospital performance in California for 1980. They argue the "investor-owned sector of the hospital industry is experiencing a notable intra-sectoral shift toward multi-institutional systems" [347]. Their study compared 280 investor-owned and nonprofit hospitals<sup>10</sup>, using data provided by the California Health Facilities Commission (CHFC). Data was obtained by the CHFC through voluntary disclosure reports submitted by individual hospitals [348]. They measured profitability using net income on a per-unit basis for both ancillary and routine services. They found that for-profit chain hospitals earned higher net income per-unit than nonprofit hospitals. Another measure of profitability investigated was net income per dollar of owners' equity. Investor-owned hospitals exhibited higher profitability based on this measure than nonprofit hospitals. They attribute this finding of higher net income per dollar of equity to the "extensive use of financial leverage by the for-profit hospitals" [351].

Pattison (1986) extended Pattison and Katz (1983) through an investigation of financial performance of 230 hospitals in California over a four-year time frame (1977-1978 and 1981-1982), also using data obtained from the CHFC. The Pattison (1986) study used return on equity (ROE) and operating margins as measures of profitability. His results were consistent with those of Pattison and Katz (1983), indicating that for-profit hospitals were more profitable than nonprofit hospitals. He also found that for-profit hospitals reported higher operating expenses (due to overhead expenses), thereby resulting in less cost-effective operations than nonprofit

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<sup>10</sup> The sample included urban and suburban hospitals offering low to moderate complexity services. Teaching, specialty and rural hospitals were excluded from the sample.

hospitals. The operating margins for nonprofit hospitals remained relatively constant over the four-year period, while for-profit hospital margins increased.

The Watt et al. (1986) study also examined differences in profitability between nonprofit and for-profit hospitals, with profitability measured by return on total assets (ROA) and ROE {return on fund balance for nonprofit hospitals}. The researchers argued that these profitability measures helped determine the success of management's strategies regarding financial performance. They found that for-profit system hospitals had significantly higher profitability than nonprofit system hospitals on both profitability measures. Non-system for-profit hospitals also exhibited higher profitability than non-system nonprofit hospitals, as measured by ROE. The researchers argue that this higher ROE was due to a higher proportion of debt financing in for-profit hospitals. They concluded "hospital ownership and system affiliation were significant factors in explaining the differences across hospitals" (Watt et al. 1986, 287).

Hoerger (1991) argues that economic theory suggests that nonprofits behave differently from for-profit firms, but the theories provide little guidance on how to empirically test for differences. His study empirically tests the hypothesis that for-profit and nonprofit hospitals behave differently. He examined differences between nonprofit and for-profit hospitals through studying "profit" variability between the organizational forms. The profit variability test states that if nonprofit hospitals behave differently then profits will be less variable over time than that of for-profit hospitals. He argues that the failure to reject the null hypothesis<sup>11</sup> indicates profit maximization theory can be applied to how nonprofit hospitals respond to changes in governmental policies (such as changes in Medicare reimbursement).

Hoerger's study analyzed hospitals in the 50 states and the District of Columbia for the period 1983 - 1988. The measurement for net profit was "net patient revenue plus total non-patient revenue minus total operating costs and total other operating expenses". The profit measures were obtained from the Health Care Financing Administration's TEFRA Minimum Data Sets. After controlling for size (measured by total beds), his results indicate that nonprofit hospitals behave differently from for-profit hospitals. He found "the profits of nonprofit hospitals were significantly less variable than the profits of for-profit hospitals" (Hoerger 1991, 274). Hoerger suggested that these smoother profits were the result of management adjusting

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<sup>11</sup> The null hypothesis states nonprofit hospitals behave similarly to for-profit hospitals. This hypothesis implies there should be little variability in profits between the nonprofit and for-profit organizations in the sample.

other variables and nonprofit hospitals did not always maximize profits. He did not, however, examine what other variables were adjusted to cushion the profits of nonprofit hospitals. He states that this evidence of adjustments made to cushion profits indicated cost shifting by nonprofit hospitals. He also argues that nonprofit hospitals may have the incentive to smooth profits if "large profits would lead to pressure to limit their tax exempt status" [283].

Gentry and Penrod (2000) estimated the value of the tax-exemption preferences granted to nonprofit hospitals. They valued the income tax and property tax exemptions, as well as the charitable contribution deduction allowed for contributions to nonprofit organizations. In order to estimate a value for these exemptions, they compared financial and non-financial measures<sup>12</sup>. They argue the level of tax exemptions received varies across nonprofit hospitals. Concerning income tax exemptions, they state variation in income tax benefits arises from "differences in profitability, capital intensity, state corporate tax rates, and the type of investment undertaken by the hospital" (286).

Their analysis was based on a sample of 4,996 hospitals, with data obtained from 1995 cost reports submitted to the Health Care Financing Administration. Numerous measures of profitability were employed: net income, return on assets, return on fixed assets, and operating margin. It is not disclosed whether these profitability measures were on a pre- or post-tax basis for the for-profit hospitals in the sample. Their results indicate that for-profit hospitals were more profitable than nonprofit hospitals on all measures. These initial findings were obtained without controlling for size or teaching responsibility of the hospital. They found similar results after controlling for size and teaching responsibilities. They conclude the differences in profitability suggest many nonprofit hospitals "would not have large income tax liabilities since they are not profitable" [305].

### 3.4 Commercial Activity

A growing number of nonprofit organizations are viewed as competing with for-profit organizations in the healthcare industry (Tuckman 1998, Weisbrod 1998). This 'commercialism' exhibited by nonprofit organizations has led researchers to argue nonprofits are becoming

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<sup>12</sup> Non-financial measures included total facility beds, total discharges, length of stay and number of employees.

indistinguishable from for-profit organizations (Weisbrod 1998). Commercialism involves a nonprofit organization engaging in transactions that directly compete with for-profit organizations. Some researchers argue that commercial activity involves merely the sale of goods or services (Cordes and Weisbrod 1998). Tuckman (1998) argues, "commercialism of nonprofits occurs when these organizations decide to produce goods and services with the explicit intent of earning a profit" [177]. A consensus does not appear to have been reached on a single definition of 'commercialism' in the nonprofit sector.

Limited research exists that investigates commercial activity conducted by nonprofit organizations. Despite this limitation, prior research has used various measures of commercial activity, including the amount of unrelated business income (UBI), the filing of a Form 990-T tax return and charitable contributions as a percentage of total revenues (Cordes and Weisbrod 1998, Tuckman 1998, Greenlee and Bukovinsky 1998).

Cordes and Weisbrod (1998) investigated the propensity of nonprofit organizations to engage in commercial activities. They relied on data from the Statistics of Income (SOI) public use sample of Form 990 tax returns filed in 1992. Commercial activity was a dichotomous measure - whether or not the nonprofit organization had at least \$1,000 of gross revenue from unrelated business activity. They find that the nonprofit organization's industry and size affected its propensity to engage in commercial activities. Those nonprofits in the health services industry were 2.4 times more likely than the reference group to report revenue subject to the unrelated business income tax (UBIT). Larger nonprofit organizations were also more likely to file a 990-T return (where size was measured by total assets). They argue that larger nonprofits file 990-T tax returns simply "because the scale of [the nonprofit's] unrelated activities is more likely to trigger the UBIT filing threshold of \$1,000 in gross income" [207].

The Cordes and Weisbrod 1998 study also investigated the impact of the source of a nonprofit organization's donations on commercial activity revenue. Source of donations was measured by the percentage of total contributions from public sources. The source of donations was found to have a significant impact on a firm's commercial activities. Their results indicate that the larger the share of donations from government sources, the less likely the nonprofit relied on commercial activity revenue. They point out this finding could be attributable to public donors' aversion to nonprofit organizations engaging in commercial activities.

In regards to measuring commercial activity, ratios based on financial statements and tax returns are often used. Greenlee and Bukovinsky (1998) point out that no "standard" financial measures are consistently used within the nonprofit sector. They argue that the nonprofit sector has lacked financial ratios to determine the financial condition of its organizations. Furthermore, it is difficult for an auditor to determine if a particular organization is comparable to an industry average since no industry averages are available.

Greenlee and Bukovinsky (1998) focused on developing ratios that are meaningful to nonprofit organizations. One particular ratio was developed to address the adequacy of resources to support the organization's mission. This ratio is the contributions and grants ratio, the percentage of total revenue received from contributions and grants, which illustrates the organization's dependence on voluntary support. The contribution and grants ratio is investigated in this study as a measure of commercial activity due to its potential similarity to the source of donations measurement used in Cordes and Weisbrod (1998).

### 3.5 Summary

Table 2 provides a summary of the empirical findings regarding debt and profitability of nonprofit and for-profit hospitals. Findings regarding the commercial activity of nonprofit organizations are also reflected in Table 2. Existing literature has determined debt levels of for-profit hospitals to be higher than that of nonprofit hospitals. These results appear to be dependent on the measure chosen because significant results were obtained using only debt to asset ratios (Watt et al. 1986). Findings of lower debt levels in nonprofit hospitals appear to contradict nonprofit organization theory. Nonprofit organizations are not permitted to issue equity therefore their primary sources of capital are debt and charitable contributions. This implies that debt structure of nonprofit hospitals should be larger than for-profit hospitals (since for-profit hospitals are allowed to issue equity). This argument is made in absence of the tax deductibility of interest payments by for-profit hospitals issuing debt.

Regarding profitability, extant literature has consistently found the profitability of for-profit hospitals to be higher than nonprofit hospitals. These results were obtained using various measures of profitability, including ROE and ROA, and do not appear to be dependent on the measure chosen.

In terms of commercial activity, existing research has found that industry, size and source of donations affect a nonprofit organization's propensity to engage in commercial activities. Research has found that larger nonprofit organizations are more likely to report commercial activity revenue than smaller nonprofits. Literature has also found an inverse relationship between the source of a nonprofit organization's donations and commercial activity. Specifically, the larger the amount of public donations, the less likely a nonprofit organization will report commercial activity revenue. This dissertation attempts to determine if this relationship holds specifically for nonprofit hospitals.



## Chapter 4

### Hypotheses

This study seeks comparisons of the following organizations: (1) JV NP hospitals versus for-profit hospitals and (2) JV NP hospitals versus Non-JV NP hospitals (see Figure 2). These comparisons are made in order to determine if differences exist in debt, profitability, and commercial activity when nonprofit hospitals engage in joint ventures with for-profit organizations. Investigating these differences using tax return data may provide support to arguments that nonprofit hospitals engaging in joint ventures exhibit some financial similarities to for-profit organizations.

#### 4.1 JV and FP Hospitals

This study compares JV NP hospitals and FP hospitals on two financial constructs - debt and profitability<sup>13</sup>. The debt to asset ratio serves as the measure for debt in this study. This debt measurement has been used in prior literature and has been found to adequately reflect the debt levels for both nonprofit and for-profit hospitals. Using prior empirical findings of for-profit hospitals exhibiting higher debt than nonprofit hospitals, the following hypothesis is proposed (in alternative form):

H<sub>1</sub>: The debt ratios of FP hospitals are higher than those of JV NP hospitals, based on measures obtained from audited financial statements and Form 990 tax return data

This hypothesis distinguishes the debt ratios of nonprofit and for-profit hospitals based on tax return and financial statement data. H<sub>1</sub> relies on prior empirical results reporting higher debt in for-profit hospitals. Failure to reject the null hypothesis of no difference in debt ratios between

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<sup>13</sup> Comparisons of commercial activity between FP and JV NP hospitals are not made because commercial activity occurs only within the nonprofit sector.

the two hospital groups would be consistent with the argument that nonprofit hospitals engaging in joint ventures are becoming indistinguishable from for-profit hospitals.

This study also compares the profitability of for-profit hospitals and JV NP hospitals. In attempting to measure profitability, consideration must be given to the measures chosen. Some of the most consistently used measures of profitability include return on assets, return on equity, and operating margins. Profitability is measured using Return on Assets (ROA) and Return on Equity [ROE] (Return on Fund Balance [ROFB] for nonprofit firms) for purposes of this study. ROA is measured by net income before taxes divided by average total assets, while ROE is measured by net income before taxes divided by average stockholders' equity. ROFB incorporates average fund balance instead of average stockholders' equity. These measures have been consistently used in prior literature and have been found to adequately reflect profitability for both nonprofit and for-profit hospitals.

Based on prior empirical findings illustrating for-profit hospitals exhibit higher profitability than nonprofit hospitals, the following hypothesis is proposed (in alternative form):

H<sub>2</sub>: The profitability of FP hospitals is higher than that of JV NP hospitals, based on measures obtained from audited financial statements and Form 990 tax return data.

This hypothesis distinguishes the profitability of nonprofit and for-profit hospitals based on tax return and financial statement data. H<sub>2</sub> relies on prior empirical results reporting higher profitability in for-profit hospitals. The failure to reject the null hypothesis of no difference in profitability between FP and JV NP hospitals would be consistent with the argument that nonprofit hospitals engaging in joint ventures are becoming indistinguishable from for-profit hospitals.

#### 4.2 JV and Non-JV NP hospitals

The second group comparison in this study occurs within the nonprofit sector. JV NP and Non-JV NP hospitals are compared on three financial constructs - debt, profitability and commercial activity.

This study relies on the IRS scrutiny of JV NP hospitals since prior literature has not compared debt structure within the nonprofit sector. The IRS argument of JV NP hospitals

exhibiting similarities to for-profit hospitals implies a higher debt structure for JV NP hospitals than Non-JV NP hospitals. Based on this argument, the following hypothesis is proposed (in alternative form):

H<sub>3</sub>: The debt ratios of JV NP hospitals are higher than those of Non-JV NP hospitals, based on measures obtained from Form 990 tax return data.

This hypothesis distinguishes the debt ratios of nonprofit hospitals based on tax return data, and relies on the IRS scrutiny of JV NP hospitals for the directional hypothesis, since prior literature has not compared debt structure within the nonprofit sector. H<sub>3</sub> implies that JV NP hospitals exhibit debt ratios similar to those of for-profit hospitals. Rejection of the null hypothesis of no difference in the debt ratios would support the IRS argument that JV NP hospitals are different from other hospitals in the nonprofit sector and may warrant further scrutiny.

Since prior literature has not compared profitability within the nonprofit sector, this study relies on IRS scrutiny of JV NP hospitals for the directional hypothesis. This IRS scrutiny implies JV NP hospitals may be endangering their tax-exempt status through reporting activities based on joint ventures with for-profit organizations. These joint venture activities are implied to be similar to activities carried on by for-profit hospitals. Based on this argument and the prior literature that found profitability of for-profit hospitals to be higher than that of nonprofit hospitals, the following hypothesis is proposed (in alternative form):

H<sub>4</sub>: The profitability of JV NP hospitals is higher than that of Non-JV NP hospitals, based on measures obtained from Form 990 tax return data.

This hypothesis distinguishes profitability within the nonprofit sector based on tax return data. H<sub>4</sub> implies JV NP hospitals exhibit high profitability similar to its for-profit hospital counterparts. Rejection of the null hypothesis of no difference between the nonprofit hospital groups would support the IRS argument that JV NP hospitals are different from other nonprofit hospitals in the industry and possibly warrant further scrutiny of their tax-exempt status.

Commercial activity is also compared within the nonprofit sector. Commercial activity includes transactions conducted by nonprofit hospitals that directly compete with for-profit organizations. Based on the IRS argument that nonprofit hospitals engaging in joint ventures

may exhibit potential similarities to for-profit organizations, the following hypothesis is proposed (stated in alternative form):

H<sub>5</sub>: The commercial activity of JV NP hospitals is higher than that of Non-JV NP hospitals, based on measures obtained from Form 990 tax return data.

Commercial activity is measured using (a) UBI as a percentage of total revenue and (b) contributions and grants as a percentage of total revenue (contributions and grants ratio). A higher UBI ratio is expected for JV NP hospitals based on the Cordes and Weisbrod (1998) finding that health care nonprofits are more likely to report unrelated business income revenue. Regarding the contributions and grants ratio, it is expected that JV NP hospitals will report lower ratios than Non-JV NP hospitals. This expectation is also based on the Cordes and Weisbrod (1998) finding of a negative relationship between the source of donation and commercial activity revenue.

In summary, this study seeks to compare distinct hospital groups: (1) JV NP hospitals versus FP hospitals and (2) JV NP hospitals versus Non-JV NP hospitals. Table 3 provides a summary of the hypotheses examined. Comparison (1) focuses on the debt and profitability of FP and JV NP hospitals. Hypotheses 1 and 2 predict the debt and profitability of for-profit hospitals will be higher than those of JV NP hospitals. Comparison (2) focuses on financial constructs within the nonprofit sector - debt, profitability and commercial activity. Hypotheses 3 through 5 predict JV NP hospitals will report higher debt, profitability and commercial activity levels than Non-JV NP hospitals.

## Chapter 5

### Sample Selection and Methodology

#### 5.1 Sample Selection

This study compares JV NP hospitals and Non-JV NP hospitals on measures of debt, profitability, and commercial activity. Debt and profitability are also compared between JV NP hospitals and FP hospitals. In order to identify the JV NP hospital sample, a search of the Dow Jones News Retrieval System was performed (see Appendix A for a more detailed discussion of the search process). This search identified nonprofit hospitals announcing joint ventures with for-profit organizations (these for-profit organizations include hospital systems such as Columbia/HCA). The JV NP hospital sample includes hospitals announcing joint ventures with for-profit hospitals because emphasis of this study is on the basic (i.e. innate) financial characteristics of nonprofit hospitals choosing to engage in these types of activities. I used joint venture announcements based on the IRS's argument that JV NP hospitals may exhibit some innately different financial characteristics than other nonprofit hospitals. The actual success or failure of the actual joint venture is not a focus of the study, and the impact of the joint venture on the hospital's financial position should be investigated in future research.

The Dow Jones search resulted in a final sample of 23 nonprofit hospitals for the period 1994 - 1996. This time period is investigated for several reasons. Whole hospital joint ventures gained popularity in 1994 according to Petroff (1998), and the IRS is beginning to audit transactions conducted by nonprofit hospitals during 1994 (Petroff 1998, Holmes 1998). The 1996 tax year represents the most recent year the Form 990 dataset is available.

The Non-JV NP hospital sample was obtained randomly. After removing the 23 JV NP hospitals from the total observations in the dataset, a random sample was drawn by year. The Non-JV NP hospital sample size reflects the per-year proportion of hospitals in the JV NP hospital sample. The sample of FP hospitals represents those hospitals filing Form 10-K Annual Reports with the Securities and Exchange Commission (SEC). This FP sample includes

hospitals under the Standard Industrial Classification (SIC) Code 8060 (Hospitals) and 8062 (General Medical and Surgical Hospitals, Except Government). A search of the SEC's online database (EDGAR) and Lexis-Nexis resulted in 77 observations for the 1994 - 1996 period. 16 observations containing missing data were removed from the sample, resulting in a final FP sample of 61 observations. Table 4 contains complete sample size descriptions in total and by year, and Appendix B contains a listing of the sample firms.

## 5.2 Data

This study contributes to the existing literature examining nonprofit hospitals through the use of tax return data. Tax return data has not been used to investigate the financial characteristics of nonprofit hospitals in the past due to data availability issues. The use of tax return data is relevant considering the IRS's reliance on tax return data to investigate nonprofit entities. The IRS uses tax return data to evaluate a hospital's activities, measure its charitable activities and scrutinize the organization's tax-exempt status. The use of specific tax return data allows researchers the opportunity to view the characteristics of nonprofit hospitals through the 'eyes' of the IRS.

Tax return data for this study was provided by the National Center for Charitable Statistics (NCCS). The dataset includes only nonprofit organizations that are classified with National Taxonomy of Exempt Entities (NTEE) Major Group E - Health: General and Rehabilitative. According to the NCCS, the tax returns were drawn from the IRS Statistics of Income (SOI) Sample Files, containing over 300 variables for samples of over 10,000 organizations (National Center for Charitable Statistics 1998). These SOI sample files contain the Form 990 tax return data for 501(c)(3) organizations with assets over \$10 million. Nonprofit hospitals with assets over \$10 million are considered "large" (Dranove and White 1994) and are more likely to realistically reflect hospitals desiring to engage in joint ventures with for-profit organizations.

Form 990 tax returns report revenues, expenses, balance sheet items, and changes in net assets or fund balance for nonprofit organizations. Tax returns are usually prepared based on the audited financial statements of the organization. According to Froelich et al. (2000) Form 990 tax return data is a "reliable source of information for basic income statement and balance sheet

entries" [251]. Despite the reliability and preparation based on audited financial statements, limitations due exist in tax return data. According to the NCCS, "IRS databases offer the most comprehensive standardized data on tax-exempt organizations but have significant limitations" (NCCS 1998, 1). One of these limitations includes the lack of "systematic in-depth verification of each record" conducted by the NCCS. Due to this limitation potential errors may exist in the data (Gordon, Greenlee and Nitterhouse 1999).

Prior research has strictly relied on data from Medicare cost reports and American Hospital Association (AHA) Annual Survey data (Watt et al. 1986, Hoerger 1991, Gentry and Penrod 2000) to obtain information on for-profit hospitals. Tax returns of for-profit organizations are not publicly available therefore audited financial statements serve as the data source for the FP hospital sample. The data used to analyze the FP hospital sample was obtained from the SEC's EDGAR database, Lexis-Nexis, and individual company annual reports containing the audited financial statements.

### 5.3 Variable Measurements

Financial characteristics of nonprofit and for-profit hospitals are used to determine the variables of interest. The constructs examined in this study are debt, profitability, and commercial activity. These constructs were chosen based on prior research that has shown, in general, significant differences exist between nonprofit and for-profit hospitals on these measures.

Hypotheses 1 and 3 compare the debt structure of the three hospital groups examined (JV NP hospitals, FP hospitals and Non-JV NP hospitals). Debt is operationally defined as the debt to total assets ratio (DEBT%). The following measurement is used <sup>14</sup>:

$$\begin{aligned} \text{(i) DEBT\%} &= \text{Total Liabilities} / \text{Total Assets} \\ &= \text{Form 990 Line 66} / \text{Form 990 Line 75} \end{aligned}$$

Hypothesis 2 compares profitability of FP and JV NP hospitals. The profitability of JV NP hospitals is defined below in the discussion of Hypothesis 4. The measurements of

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<sup>14</sup> Tax return line items are based on the 1995 Form 990.

profitability used in the FP sample are (i) Return on Assets (ROA) and (ii) Return on Equity (ROE):

$$(i) \text{ ROA} = \text{Net Income}^{15} / \text{Average Total Assets}$$

$$(ii) \text{ ROE} = \text{Net Income} / \text{Average Stockholders' Equity}$$

Hypothesis 4 compares profitability within the nonprofit groups (JV NP hospitals and Non-JV NP hospitals). The operational definitions of profitability for the nonprofit hospitals are (i) Return on Assets (ROA) and (ii) Return on Fund Balance (ROFB). The following measurements are used for these variables:

$$(i) \text{ ROA} = \text{Net Income} / \text{Average Total Assets}$$

$$= \text{Form 990 Line 18} / [(\text{Line 75, Column A} + \text{line 75, Column B}) / 2]$$

$$(ii) \text{ ROFB} = \text{Net Income} / \text{Average Fund Balance}$$

$$= \text{Form 990 Line 18} / [(\text{Line 74, Column A} + \text{Line 74, Column B}) / 2]$$

Hypothesis 5 compares commercial activity between JV NP hospitals and Non-JV NP hospitals. The operational definitions for commercial activity are (i) Unrelated Business Income as a Percentage of Revenue (UBI%) and (ii) Contributions and Grants Ratio (CONTRIB%):

$$(i) \text{ UBI\%} = \text{Unrelated business income} / \text{Total Revenue}$$

$$= \text{Form 990 Line 104, Column B} / \text{Form 990 Line 12}$$

$$(ii) \text{ CONTRIB\%} = \text{Total Contributions} / \text{Total Revenue}$$

$$= \text{Form 990 Line 1d} / \text{Form 990 Line 12}$$

#### 5.4 Statistical Analysis

This study seeks to make inferences involving a comparison of parameters from different populations. Test procedures for comparing two population means include the pooled t-test and

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<sup>15</sup> Net income used in ROA and ROE calculations for the FP hospital sample is measured by net income before federal income taxes. This measurement is used because nonprofit hospitals do not deduct federal income taxes when calculating net income. This measurement also assures income measurements are as equivalent as possible.



the separate (or unequal) variance t-test. Each procedure makes several assumptions. The pooled t-test assumptions include: (i) the two samples are independent, (ii) the samples are drawn from a normal distribution, and (iii) population variances are unknown, but considered equal. The unequal variance t-test assumptions include: (i) the two samples are independent, (ii) the samples are drawn from a normal distribution, and (iii) population variances are unknown, but believed to be unequal (Schulman 1992, Ott 1993).

A comparison of variances was performed to determine the appropriate t-test to be used. According to Schulman (1992) "the F test on variances can be used to decide which t test to use for comparing means." (151). The null hypothesis under this F test states variances are equal, therefore a significant p value indicates variances are different. Table 5 reports the results of F tests of variances for the variables of interest. Panel A of Table 5 illustrates significant p-values were obtained for ROA and ROE variables [ $p < 0.001$ ] for the JV and FP hospital sample, therefore variances are different for these variables. Based on these p-values the unequal t-test was used for variables ROA and ROE for the JV and FP comparisons. The corresponding DEBT% for this sample reported a p-value of 0.1328, therefore suggesting variances are equal, and the pooled t-test was used for the DEBT% variable.

Panel B of Table 5 reports the comparison of variances for the JV and Non-JV NP hospital sample. UBI% is the only variable reporting a significant p-value (at the 0.02 level). This p-value suggests the variances are different therefore the unequal t-test was used. The remaining variables for the JV and Non-JV NP comparison appear to have equal variances therefore the pooled t-test was used.

A major assumption of the t-test is normality. According to Schulman (1992), "the t-test is valid only when the data are normally distributed". Despite this limitation, the central limit theorem implies the sampling distribution will approximate a normal distribution as sample size increases (Schulman 1992, Ott 1993). In order to test the normality assumption of the t-test, the Kolmogorov-Smirnov (hereafter K-S) normality test was performed on all variables. The K-S test assesses "whether there are any differences whatsoever between the X and Y probability distributions" (Hollander and Wolfe 1999, 178), where X and Y are independent random samples. Table 6 reports the results of the K-S normality test for all variables. Normality is rejected for ROA and ROE ( $p < 0.01$  for each variable) in the JV and FP hospital sample, and normality cannot be rejected for DEBT% ( $p > 0.15$ ) in this sample. For the JV and Non-JV NP

hospital sample normality is rejected for all variables investigated. Normality for DEBT% is rejected with a p-value of 0.022, and all other measures of profitability and commercial activity reject normality with a p-value less than 0.01.

The normality assumption was also investigated using normal probability plots of the data. Figure 3 contains normal probability plots for all variables for the JV and Non-JV NP hospital sample. The plot's vertical axis has a probability scale and the horizontal axis is the data scale. A least-squares line is fit to the plotted points and drawn on the plot for reference. The line forms an estimate of the cumulative distribution function for the population from which data are drawn. A straight (or close to straight) line indicates normality, and a lot of curvature indicates non-normal data. These normal probability plots confirm the results obtained from the K-S normality test for the sample. Figure 4 contains normal probability plots for the FP and JV hospital sample. These plots confirm the lack of normality for ROA and ROE in the FP and JV hospital sample. These results indicate the sample data is not normal for profitability and commercial activity measures, thus nonparametric methods should be used. For purposes of this study both parametric and nonparametric methods are presented.

When data is not normally distributed, nonparametric (or distribution-free) tests are performed. These tests are based on the ranking of the data, and not the actual values of the data (Hollander and Wolfe 1999). The Wilcoxon Rank Sum Test, a distribution-free rank sum test, is used in this study to test the hypotheses of a difference in location (median) of the two hospital groups.

Analysis of variance (ANOVA) was also used as a supplementary test of the hypotheses<sup>16</sup>. This form of analysis helps determine: i) if significant differences exist in the financial characteristics of JV NP hospitals and Non-JV NP hospitals and ii) if significant differences exist in the financial characteristics of JV NP hospitals and FP hospitals. The dependent variables in the separate ANOVAs are the financial constructs of debt, profitability, and commercial activity. The constructs were chosen based on prior research that has shown, in general, significant differences exist between nonprofit and for-profit firms on these measures.

The independent variables for the separate ANOVAs are STATUS, designating the classification of the hospital and SIZE. STATUS is coded as "1" to represent JV NP hospitals,

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<sup>16</sup> The "proc glm" procedure in SAS was used due to unequal sample sizes of the hospital groups.

and "0" otherwise<sup>17</sup>. SIZE is used as a control variable, to designate either large or small hospitals. The dichotomous measure was obtained through performing a median split on total assets. Hospitals with total assets above the median were coded as "1" to represent large hospitals, and those below the median were coded as '0' to represent small hospitals. Teaching status is often incorporated as a control variable in research investigating nonprofit hospitals. This study did not incorporate teaching status as a control variable because sample data includes some consolidated financial statements based on numerous hospital groups. The inclusion of consolidated audited financial statements prevents separation of the sample into individual hospital observations.

Logistic regression was also performed as a supplementary analysis in order to determine if the hospital groups differ on the financial constructs. Logistic regression is appropriate when the dependent variable is dichotomous in nature (Montgomery and Peck 1992, Hosmer and Lemeshow 1989, Pindyck and Rubinfeld 1981). This type of model is called a linear probability model, expressed as a function of the probability that a particular case falls into one of two categories, given the values of the independent variables (Hosmer and Lemeshow 1989, Menard 1995). In this study, the logistic model will help determine the probability that the variables of interest are associated with nonprofit hospitals engaged in joint ventures. The model also helps determine which financial variables can predict the likelihood that a nonprofit hospital will enter a joint venture with a for-profit organization.

The following logistic model was used for the comparison of FP and JV NP hospitals:

$$P(Y_i) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 DEBT\%_i + \beta_2 ROA_i + \beta_3 ROE_i + \beta_4 ASSETS_i)}}$$

Where:

$Y_i$  = dummy variable to designate organizational form; coded as 1 for JV NP hospital and 0 for FP hospital.

$DEBT\%_i$  = Total Liabilities / Total Assets

$ROA_i$  = Net Income / Average Total Assets

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<sup>17</sup> JV NP hospitals and FP hospitals are coded as "0".

$ROE_i = \text{Net Income} / \text{Average Stockholders' Equity}$

$ASSETS_i = \text{Total Assets at the end of the year}$

The following logistic model was used for the hospital comparisons within the nonprofit sector

(JV versus Non-JV NP hospitals):

$$P(Y_i) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 DEBT\%_i + \beta_2 ROA_i + \beta_3 ROFB_i + \beta_4 UBI\%_i + \beta_5 CONTRIB\%_i + \beta_6 ASSETS_i)}}$$

Where:

$Y_i$  = dummy variable to designate participation in joint ventures; coded as 1 for JV NP hospitals and 0 for Non-JV NP hospitals.

$DEBT\%_i = \text{Total Liabilities} / \text{Total Liabilities \& Fund Balance}$

$ROA_i = \text{Net Income} / \text{Average Total Assets}$

$ROFB_i = \text{Net Income} / \text{Average Fund Balance}$

$CONTRIB\%_i = \text{Total Contributions} / \text{Total Revenue}$

$UBI\%_i = \text{Unrelated Business Income Percentage}$

$ASSETS_i = \text{Total Assets at the end of the year}$

## Chapter 6

### Results

This study compares three distinct hospital groups: JV NP hospitals, Non-JV NP hospitals, and FP hospitals based on financial constructs. The financial constructs investigated include debt, profitability, and commercial activity. These constructs are measured using tax return data for the two nonprofit groups, and audited financial statement data for the for-profit group. These comparisons are made to determine if innate differences exist between these three groups of hospitals.

Debt is measured for all three groups using the debt to total assets ratio (DEBT%). Profitability is measured by return on assets (ROA) for all groups. Another profitability measure used is return on equity (ROE); however, for nonprofit hospital reporting purposes, 'fund balance' is equivalent to equity thus resulting in return on fund balance (ROFB) representing a profitability measure for the JV and Non-JV groups. Commercial activity is compared only within the nonprofit sector and is measured as follows: unrelated business income as a percentage of total revenue (UBI%), and total contributions as a percentage of total revenue (CONTRIB%).

#### 6.1 Descriptive Statistics

##### *JV NP Hospitals*

Descriptive statistics for the three hospital groups are presented in Table 7. Panel (A) reveals the debt to asset ratio for the JV NP hospitals ranges from 3.44% to 76.42%. The average DEBT% for this group is 40.06%, with a median of 46.14% and a standard deviation of 22.30%. The average debt ratio indicates JV NP sample hospitals are not highly leveraged. In terms of profitability, ROA for the JV NP hospitals ranges from -23.33% to 13.11%. Average ROA for JV NP hospitals is 1.63%, with a median of 2.75%, and standard deviation of 8.10%.

Consistent percentages are reported using ROFB measures - an average ROFB of 2.90% and a median of 8.72%; however the standard deviation of 16.61% for this measure is nearly double that of the ROA measurement. The range for ROFB is more disperse for the JV NP group, ranging from -57.82% to 23.62%. These profitability measures indicate JV NP hospitals exhibit relatively low profitability for the time period examined.

In terms of commercial activity, UBI% ranges from -0.05% to 2.44%. The average UBI% is 0.55%, with a median of 0.13% and a standard deviation of only 0.80%. This indicates sample hospitals do not rely heavily on unrelated business activities as a source of revenue. The contribution and grants ratio, CONTRIB%, ranges from 0.0% to 89.06%. The average CONTRIB% is 4.49%, with a median of 0.30% and standard deviation of 18.46%. This relatively small average is a further indication JV NP hospitals do not generate large percentages of its revenues from outside donations.

#### *Non-JV NP Hospitals*

Panel (B) of Table 7 illustrates that the Non-JV NP hospital sample reports an average debt ratio of 38.68%, a median of 37.10% and standard deviation of 29.86%. The debt ratio ranges from a low of 0% to a high of 130.71%, indicating some Non-JV NP hospitals are highly leveraged. Despite the existence of some highly leveraged hospitals, Non-JV NP sample hospitals are, on average, not highly leveraged. ROA profitability measures range from a minimum of -25.93% to a maximum of 46.56%, with a standard deviation of 9.79%. ROA averages 5.74% with a median of 4.63%. ROFB ranges from a minimum of negative 57.62% to a maximum of 97.10% with an average of 9.58%. The median ROFB is 9.58% with a standard deviation of 19.36%. These relatively low average profitability measures indicate Non-JV NP hospitals experienced some financial difficulty in the time period studied.

In regards to commercial activity, the Non-JV NP sample reports an average UBI% of 0.39%, a median of 0% and standard deviation of 1.24%. UBI% for this group ranges from a low of -2.53% to a high of 8.34%. These low UBI percentages indicate sample Non-JV NP hospitals do not rely heavily on unrelated business activities as a source of revenue. CONTRIB% ranges from 0% to 90.59% with a standard deviation of 22.03%. This commercial activity measure averages 10.24% and has a median of 0.32%. This average commercial activity

is higher than that reported by JV NP hospitals, but still indicates the sample hospitals do not generate large percentages of its revenues from outside donations.

#### *FP Hospitals*

Debt and profitability are the only financial constructs examined in the for-profit hospital group, because only nonprofit hospitals engage in commercial activity. Panel (C) of Table 7 shows the debt to asset ratio for this group reports the highest average of 52.58% among the three hospital groups. DEBT% ranges from a minimum of 5.92% to a maximum of 147.31%, thus indicating some FP hospitals are highly leveraged. DEBT% shows a standard deviation for this group of 29.81% and a median of 50.02%. This FP hospital sample reports negative average profitability on both measures. ROA ranges from a low of -82.39% to a high of 26.86%, with a standard deviation of 16.59%. Average ROA is -1.47% with a median of 2.75%, indicating the sample hospitals were exhibiting financial difficulty during the time period examined. An average ROE of -1.18% further supports this argument. ROE ranges from -196.32% to 125.80% with a standard deviation of 40.10% and a median ROE is 4.23%.

#### 6.1.1 Correlation Analysis

##### *JV and FP Hospital Sample*

Table 8 reports both the Pearson and Spearman correlation matrices for the JV and FP hospitals. Panel (A) reports correlations for the entire JV and FP hospital sample. A significant correlation exists between ROA and ROE ( $p < 0.0001$ ) for both the Pearson and Spearman methods. This significant correlation is expected since both variables are measurements of profitability and include net income. Panel (B) reports correlations for only the JV NP hospital sample. As indicated at the whole sample level, significant correlations exist between ROE and ROA ( $p < 0.0001$ ) for both Pearson and Spearman methods. Panel (C) of Table 8 reports similar significant correlations between ROE and ROA ( $p < 0.0001$ ) for the FP hospital sample.

#### *JV and Non-JV NP Sample*

Table 9 reports correlation analysis for the JV and Non-JV NP hospital sample. Under the Pearson method, Panel (A) illustrates a significant correlation between DEBT% and ROA, DEBT% and CONTRIB%, and CONTRIB% and ROA (significant at the 0.01 level). Further significant correlations (at the 0.01 level) exist between UBI% and DEBT%, as well as CONTRIB% and ROFB under the Spearman method only. A significant correlation exists between ROA and ROFB ( $p < 0.0001$ ), as also seen in the JV and FP sample.

Panel (B) of Table 9 illustrates a significant correlation between profitability measures ROA and ROFB ( $p < 0.0001$ ) for the JV NP sample. Panel (B) also reveals a significant correlation between UBI% and ROA, as well as UBI% and ROFB (significant at the 0.02 level). CONTRIB% and UBI% are significantly correlated at the 0.05 level under the Spearman method only. As revealed in the entire sample correlations, ROA and ROFB are significantly correlated ( $p < 0.0001$ ). Panel (C) reports correlations for the Non-JV NP sample. Panel (C) illustrates significant correlation between the following variables using the Pearson method: DEBT% and ROA, DEBT% and CONTRIB%, as well as CONTRIB% and ROA ( $p < 0.01$ ). Under the Spearman method, a significant correlation exists between UBI% and DEBT%, as well as CONTRIB% and UBI% (at the 0.05 level).

### 6.2 Location Comparisons

#### *JV and FP Hospital Sample*

Table 10 reports location comparisons for the JV and FP hospital sample, using both parametric and nonparametric methods. Debt to asset ratios averaged 52.58% for the FP hospitals and only 40.06% for the JV NP group. Based on mean values, FP hospitals reported significantly higher debt ratios than the JV NP hospitals ( $t = 1.83$ ,  $p = 0.035$ ). These results support hypothesis  $H_1$  and are consistent with prior research stating for-profit hospitals have higher debt than nonprofit hospitals.

Insufficient evidence was found to conclude mean profitability measures of the two groups differ. Sample FP hospitals report an average ROA of -1.47%, while JV NP hospitals report an average ROA of 1.63%. Even though JV NP hospitals report higher profitability measured by ROA, the difference is not statistically significant ( $t = -1.14$ ,  $p = 0.128$ ). Similar



results are found when profitability is measured by ROE --- average ROE for FP hospitals is -1.18% and 2.90% for JV NP hospitals. Despite JV NP hospitals reporting higher average ROE the difference is not statistically significant ( $t = -0.66$ ,  $p = 0.256$ ). The lack of significant differences in profitability between these two groups is not consistent with prior research and does not support hypothesis H<sub>2</sub>. Prior research consistently found for-profit hospitals have higher profitability than nonprofit hospitals; however, use of audited financial statements and tax returns reveal FP hospitals have *lower* profitability. The lack of a significant difference in profitability may lend support to the IRS argument that JV NP hospitals are indistinguishable from FP hospitals on certain financial measures.

The Wilcoxon Rank Sum test was also performed on this sample and similar results to the t-test were found. DEBT% was found to be significantly different ( $W = 808$ ,  $p = 0.045$ ), with FP hospitals reporting significantly higher median debt ratios. This finding supports H<sub>1</sub> and prior research concluding for-profit hospitals report higher debt than nonprofit hospitals. A significant difference was not found between the two groups using either profitability measure [for ROA ( $W = 1026$ ,  $p = 0.315$ ); ROE ( $W = 966$ ,  $p = 0.456$ )], which is consistent with the findings of the t-test. The lack of a significant difference in profitability using nonparametric methods does not support hypothesis H<sub>2</sub>, and may provide further support to the IRS's argument that JV NP hospitals exhibit similar financial characteristics to FP hospitals in certain situations.

#### *JV and Non-JV NP Sample*

Both parametric and nonparametric location comparisons are presented in Table 11 for the JV and Non-JV NP hospital sample. DEBT% averaged 40.06% for the JV group and only 38.68% for the Non-JV NP group. This difference was not determined to be statistically different based on mean comparisons ( $t = -0.21$ ,  $p = 0.4177$ ). This finding does not support hypothesis H<sub>3</sub> and reveals innate differences in debt structure do not exist among these nonprofit hospitals. This finding illustrates the IRS may be incorrect in its assertion that JV NP hospitals are different from other nonprofit hospitals.

In terms of profitability, the ROA measurement revealed a statistically significant difference in means. Non-JV NP hospitals report an average ROA of 5.74% while JV NP hospitals average 1.63% ( $t = 1.86$ ,  $p = 0.0324$ ). Despite this significant difference in ROA, it

does not support hypothesis H<sub>4</sub> which claims JV NP hospitals would report *higher* profitability than Non-JV NP hospitals. This finding reveals JV NP hospitals report *lower* profitability, which may indicate financial distress as a reason for entering a joint venture with for-profit organizations. In regards to ROFB measurements, Non-JV NP hospitals reported higher averages than the JV NP hospitals (9.58% for Non-JV NP and 2.90% for JV NP), and this difference in ROFB is marginally significant ( $t = 1.52$ ,  $p = 0.0652$ ). As in the ROA case, this finding contradicts hypothesis H<sub>4</sub> because it was predicted JV NP hospitals would report higher profitability.

Commercial activity measures were not found to be statistically different between the JV and Non-JV NP hospitals. In terms of unrelated business income, JV hospitals averaged 0.55% while Non-JV NP reported an average UBI% of 0.39% ( $t = -0.77$ ,  $p = 0.2238$ ). Similar results were found for the CONTRIB% measurement, with JV NP hospitals averaging 4.49% and Non-JV NP hospitals reporting a higher average of 10.24%. Despite Non-JV NP reporting higher average contribution ratios, the difference was not statistically significant ( $t = 1.16$ ,  $p = 0.1247$ ). These results do not lend support to hypothesis H<sub>5</sub> arguing JV NP hospitals would report higher levels of commercial activity.

Nonparametric location comparisons are also reported in Table 11 for JV and Non-JV NP hospitals. Consistent results to the t-tests were obtained when using the Wilcoxon Rank Sum test. Significant differences were obtained for both profitability measures - ROA reported a W statistic = 11247 and a p-value = 0.0446, and ROFB was marginally significant ( $W = 1153$ ,  $p = 0.0637$ ). Despite the presence of a significant difference in profitability, the median values do not agree with the hypothesized direction. Nonparametric results are consistent with those of the t-test when evaluating debt to asset ratios of the two hospital groups - the JV NP hospitals did not report significantly higher median debt to asset ratios than the Non-JV NP hospitals ( $W = 1458$ ,  $p = 0.3010$ ). In terms of commercial activity, a significant difference in UBI% between the two groups was found ( $W = 1652$ ,  $p = 0.0219$ ), with JV NP hospitals reporting a higher median UBI% of 0.13%. Non-JV NP reported only slightly higher median contribution ratios resulting in a difference that was not statistically significant ( $W = 1308$ ,  $p = 0.3144$ ). These nonparametric results do not lend full support to hypothesis H<sub>5</sub> arguing JV NP hospitals would report higher amounts of commercial activity. JV NP hospitals were found to report higher commercial activity only when measured by UBI%.

### 6.3 Analysis of Variance

#### *JV and FP Hospital Sample*

Separate ANOVAs were performed on the financial variable measurements and are reported in Table 12. Hospital status (STATUS) served as an independent variable, with "1" representing JV NP hospitals and "0" representing FP hospitals. Total assets (SIZE)<sup>18</sup> served as a control variable, which was converted into a dichotomous measure through the use of a median split, with 'large' hospitals having total assets greater than the sample median. Teaching status is a common control variable used in prior research, but was not included in this analysis. This study did not incorporate teaching status in the analysis because the FP hospital sample includes consolidated financial statements based on numerous hospital groups. The inclusion of consolidated audited financial statements prevents separation of the sample into individual hospital observations.

Results indicate mean debt ratios are different between the FP and JV NP hospital groups, with STATUS reporting an F value of 3.45 and p-value of 0.0669. A significant difference in debt ratios was also found between large and small hospitals, with the control variable, SIZE, reporting an F value = 3.93 and a p-value of 0.0507. The lack of a significant interaction between STATUS and SIZE ( $p > 0.30$ ) for this sample indicates the variable effects operate independently. These results are consistent with the location comparisons, and lend support to hypothesis H<sub>1</sub> arguing a difference in debt ratios between FP and JV NP hospitals.

Regarding a comparison of profitability, a significant main effect for STATUS was not found using either the ROA or ROE measures ( $p > 0.30$ ). Even after controlling for size, these results are similar to those found using the t-test. The lack of a significant difference in profitability among these hospitals may lend support to the argument that JV NP hospitals exhibit financial characteristics similar to those of FP hospitals in certain situations.

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<sup>18</sup> SIZE was coded as "1" for large and "0" otherwise.

#### *JV and Non-JV NP Hospital Sample*

Separate ANOVAs were performed for the debt, profitability and commercial activity measures for the nonprofit hospital groups, with results reported in Table 13. Significant main effects were not found for either STATUS or SIZE when analyzing the debt to asset ratios of the two nonprofit hospital groups ( $p > 0.30$ ). These results are similar to those found using the two-sample t-test, indicating innate differences in debt do not exist between these groups based on tax return data. The lack of a significant difference in debt between the nonprofit hospital groups does not support the IRS argument that JV NP hospitals exhibit innate differences from other nonprofit hospitals.

Regarding profitability, a significant main effect for STATUS was found when analyzing ROA ( $F$  value = 3.45,  $p = 0.0657$ ). Analysis of ROE measures did not reveal a significant main effect for either STATUS or SIZE ( $p > 0.10$ ). These results are consistent with those found using the t-test and indicates to some degree a difference in profitability exists between the two hospital groups, when measured by ROA. Considering only the ROA measure of profitability revealed a significant difference between the two groups, the measurement chosen to represent the profitability construct may affect empirical results.

Analysis of CONTRIB% reveals a significant SIZE effect only ( $F$  value = 4.73,  $p = 0.0317$ ). This finding reveals differences in contribution percentages occur based on size and not on the presence of a joint venture with a for-profit hospital, which is consistent with the results of the t-test. Commercial activity measured by UBI% did not produce significant effects for either SIZE or STATUS, also consistent with t-test results. This indicates that unrelated business income does not vary significantly across the nonprofit hospital groups. This may be an indication that IRS scrutiny of a JV NP hospital's commercial activity may be excessive because these organizations are no different from other nonprofit hospitals on these measures. These results may also be an indication that the IRS is concerned with other financial measures when comparing hospitals in the nonprofit sector.

## 6.4 Logistic Regression

### *JV and FP Sample*

Logistic regression is used as a supplemental analysis in order to determine whether the hospital types can be distinguished through the financial measures chosen. This method aids in determining whether the financial measures can be used to predict the likelihood of a nonprofit hospital engaging in a joint venture. Results are presented in Table 14 for the JV and FP sample hospitals. Results reveal a likelihood ratio chi-square value of 8.1544 for the model, which includes DEBT%, both measures of profitability and total assets as a control variable. The corresponding p-value for the full model is 0.0861, which is only marginally significant. This indicates the financial measures chosen, as a group, allow somewhat better predictions to be made to distinguish between for-profit and joint venture nonprofit hospitals. Despite the existence of a marginally significant model, the parameter estimates reveal none of the financial variables are significant ( $p > 0.20$ ). This indicates the individual financial measurements are not sufficient in predicting the likelihood a nonprofit hospital will engage in joint ventures with for-profit hospitals. Based on this finding, it is possible other financial variables obtained through tax return and financial statement data may better serve as predictors for the engagement in joint ventures by nonprofit hospitals.

### *JV and Non-JV NP Sample*

Table 15 reports the logistic regression analysis for the JV and Non-JV NP hospital sample. The full model for this analysis includes the debt to asset ratio, both measures of profitability, commercial activity (UBI% and CONTRIB%), and total assets serving as a control variable. Results reveal the overall model is significant, with a chi-square = 16.0871 and a p-value of 0.0133. This indicates, as similar to the JV - FP sample, the financial measures allow better predictions to be made in order to distinguish between the nonprofit hospital groups. Parameter estimates reveal the total assets measure is the only financial variable significant within the model ( $p = 0.0039$ ). This indicates size should be sufficient in predicting the likelihood a nonprofit hospital will engage in joint ventures. Stepwise selection procedures were performed in order to determine which financial variables should be kept in the model. Panel (B) of Table 15 reveals ROA and total assets best fit the model. ROA has a parameter estimate of

-5.6242 (p value = 0.0490), indicating a higher probability of a hospital engaging in a joint venture is associated with lower profitability. Total assets reported a positive parameter estimate and a p-value of 0.0032, which indicates larger nonprofit hospitals are more likely to engage in joint ventures with for-profit entities.

### 6.5. Summary

Table 16 provides a summary of findings for all comparisons using parametric and nonparametric statistical methods. Regarding the comparison between FP and JV NP hospitals (Panel A of Table 16), FP hospitals reported significantly higher debt ratios, which is consistent with prior research. This finding of higher debt ratios was found using all methods except the logistic regression model. Regarding profitability comparisons of these groups, neither the ROA nor the ROE measures were found to be statistically different between the groups - despite JV NP hospitals reporting higher mean and median profitability measures. This lack of significant differences in profitability lends support to the argument JV NP hospitals may exhibit financial characteristics similar to those of FP hospitals. Furthermore, low average profitability exhibited by both hospital groups may indicate that improving the organization's financial condition is a motivating factor behind the decision to engage in joint ventures.

Panel B of Table 16 reports the findings of comparing JV NP hospitals and Non-JV NP hospitals. Under all statistical methods, significant differences in debt ratios were not found between the nonprofit hospital groups. This finding fails to support IRS arguments that JV NP hospitals exhibit differences from other nonprofit hospitals and reveals most nonprofit hospitals exhibit similar debt structures.

Regarding profitability comparisons within the nonprofit groups, significant differences in ROA were found using all methods except logistic regression. The lack of a significant difference using logistic regression indicates profitability is a financial construct that does not contribute to predicting the likelihood of a nonprofit hospital engaging in joint ventures. The ROFB measure of profitability was found to be statistically different between the two nonprofit hospital groups using only the t-test and the Wilcoxon Rank Sum Test. Despite the statistical significance of the comparisons of profitability, the differences exhibited in ROA and ROFB were opposite of that hypothesized. JV NP hospitals reported *lower* profitability on both

measures than the Non-JV NP hospitals. This exhibition of lower profitability partially supports the argument there are innate differences between these types of nonprofit hospitals, but it does not support the argument that JV NP hospitals exhibit actual characteristics similar to those of for-profit hospitals.

In regards to commercial activity comparisons of the nonprofit hospital groups, only the UBI% measurement was statistically different using the Wilcoxon Rank Sum test. JV NP hospitals exhibited significantly higher unrelated business income percentages than Non-JV NP hospitals. UBI% averaged only 0.55% for the JV NP hospitals revealing these hospitals are not currently involved in extensive commercial activity that requires the filing of Form 990-T. Regarding the contribution and grants ratio measurement of commercial activity, JV NP hospitals reported an average CONTRIB% of only 4.49%, while Non-JV NP hospitals reported an average of 10.24%. Despite JV NP hospitals reporting lower average CONTRIB%, as expected, it was not determined to be statistically different between the nonprofit hospital groups under any statistical method. These average contribution and grants ratios reveal JV NP hospitals are not heavily relying on contributions as a source of revenue, thus indicating another possible motivation for the organizations to engage in joint ventures.

## Chapter 7

### Discussion and Contributions

#### 7.1 Discussion

The purpose of this study was to determine whether JV NP hospitals exhibit differences in financial characteristics from FP hospitals, in terms of debt and profitability. JV NP hospitals were also compared to Non-JV NP hospitals on debt, profitability, and commercial activity measures. Overall, results indicate FP and JV NP hospitals exhibit different debt structures. JV and Non-JV NP hospitals exhibit differences in profitability and only one measure of commercial activity - unrelated business income.

FP hospitals report significantly higher debt ratios than JV NP hospitals. This finding is consistent with prior research and further establishes that inherent differences do exist between nonprofit and for-profit hospitals. Despite results that are consistent with prior research, FP hospitals exhibiting higher debt ratios than JV NP hospitals does not lend support to the argument that JV NP exhibit characteristics similar to those of FP hospitals.

JV NP hospitals reported higher average profitability than FP hospitals when measured by ROA and ROE, but the difference was not statistically significant. This finding is inconsistent with prior research and is possibly explained through the time period investigated. Prior research establishing that for-profit hospitals exhibit higher profitability was based on cost report and survey data during the mid 1980s. This study's use of audited financial statements and tax return data for the 1994 through 1996 time period illustrates hospitals were exhibiting some financial difficulty. FP hospitals exhibiting low profitability also indicates motivating factors behind a for-profit hospital entering a joint venture are more economically driven, rather than tax-motivated. For-profit hospitals reporting average losses may not necessarily be motivated to accelerate deductions for tax-reporting purposes. Furthermore, the lack of a significant difference in profitability between FP and JV NP hospitals lends support to the IRS's concern that JV NP hospitals may exhibit characteristics indistinguishable from for-profit hospitals. These potential similarities in profitability could indicate nonprofit partners are becoming



indistinguishable from for-profit entities, which further calls into question the applicability of tax-exempt status for these nonprofit hospitals.

When comparing hospitals within the nonprofit sector, JV NP hospitals are found to be statistically different from Non-JV NP hospitals on both measures of profitability. JV NP hospitals reported significantly *lower* profitability than Non-JV NP hospitals. This finding is opposite of the hypothesized direction proposed in this study but does illustrate some interesting findings. Results indicate JV NP hospitals do exhibit innately different financial characteristics than other nonprofit hospitals, which lends support to the IRS's argument that there is something 'special' about these JV NP hospitals. Lower profitability may also be a potential explanation for why JV NP hospitals are motivated to joint venture with for-profit hospitals.

Regarding debt structure of the two nonprofit hospital groups, significant differences in the debt to asset ratios were not found. This finding illustrates, overall, that nonprofit hospitals exhibit similar debt structure, despite their potential involvement in joint ventures with for-profit hospitals.

Lastly, in terms of commercial activity, differences between JV and Non-JV NP hospitals were found only for the UBI% measure. JV NP hospitals reported a significantly higher median unrelated business income percentage than Non-JV NP hospitals. Despite the significant difference, median UBI% for JV NP hospitals is less than one percent. This low percentage indicates JV NP hospitals are not currently involved in extensive commercial activities that are subject to the unrelated business income tax. The second measure of commercial activity - contributions and grants ratio - was not determined to be statistically different between the nonprofit hospitals. JV NP hospitals reported lower average CONTRIB% than Non-JV NP hospitals, as expected, based on the Cordes and Weisbrod (1998) finding of an inverse relationship between donations and commercial activity. Despite a lack of significant differences, these findings illustrate JV NP hospitals do not heavily rely on contributions as a revenue source. These findings also reveal JV NP hospitals are not necessarily 'different' from other nonprofit hospitals as alleged by the IRS.

## 7.2 Contributions

This study offers a novel approach to examining nonprofit organizations involved in specific transactions, with results contributing to the existing literature concerning the characteristics of nonprofit hospitals. If a hospital is considering engaging in a joint venture then these results highlight certain characteristics that appear to be associated with commercial activities. This investigation also determined actual levels of commercial activities conducted in the nonprofit sector. Results provide partial support to the IRS's argument that JV NP hospitals are different from other nonprofit hospitals on certain measures, particularly profitability and unrelated business income.

This study's reliance on tax return data is another contribution to the literature since prior findings are based on survey and cost report data. The use of specific tax return data allows researchers the opportunity to view the characteristics of nonprofit hospitals through the 'eyes' of the IRS. Even though results are not consistent in all aspects with prior research, a contribution to the literature has occurred by illustrating empirical results may be dependent on the data source selected. The findings of this study may assist in predicting the likelihood a nonprofit hospital will engage in a joint venture, based on the organization's financial characteristics. Results may also assist nonprofit hospitals in determining possible characteristics that could serve as potential red flags for audit by the IRS.

## 7.3 Limitations

There are limitations of this study, one being the assumption that significant financial differences between nonprofit and for-profit hospitals are only due to debt level and profitability. Other significant financial differences may exist, particularly non-financial measures of performance. The accuracy of the data is another limitation to this study. Analysis is performed on information provided in the NCCS database, but potential errors could exist in the data (Gordon, Greenlee and Nitterhouse 1999). It may also be necessary to further subdivide the database within the NTEE Major Group E in order to determine that the sample dataset contains only hospitals. The comparison of actual tax return data for nonprofit hospitals with financial statement data of for-profit hospitals is also a limitation. Adequate comparisons may be limited due to potential book/tax differences such as depreciation.

Another limitation is reliance on a single source for the joint venture announcement date. It is possible nonprofit hospitals may announce in other trade or industry publications other than the Dow Jones News System. It is also possible that nonprofit hospitals choose not to announce joint ventures until negotiations are completed and the joint venture has begun operations.

#### 7.4 Future Research

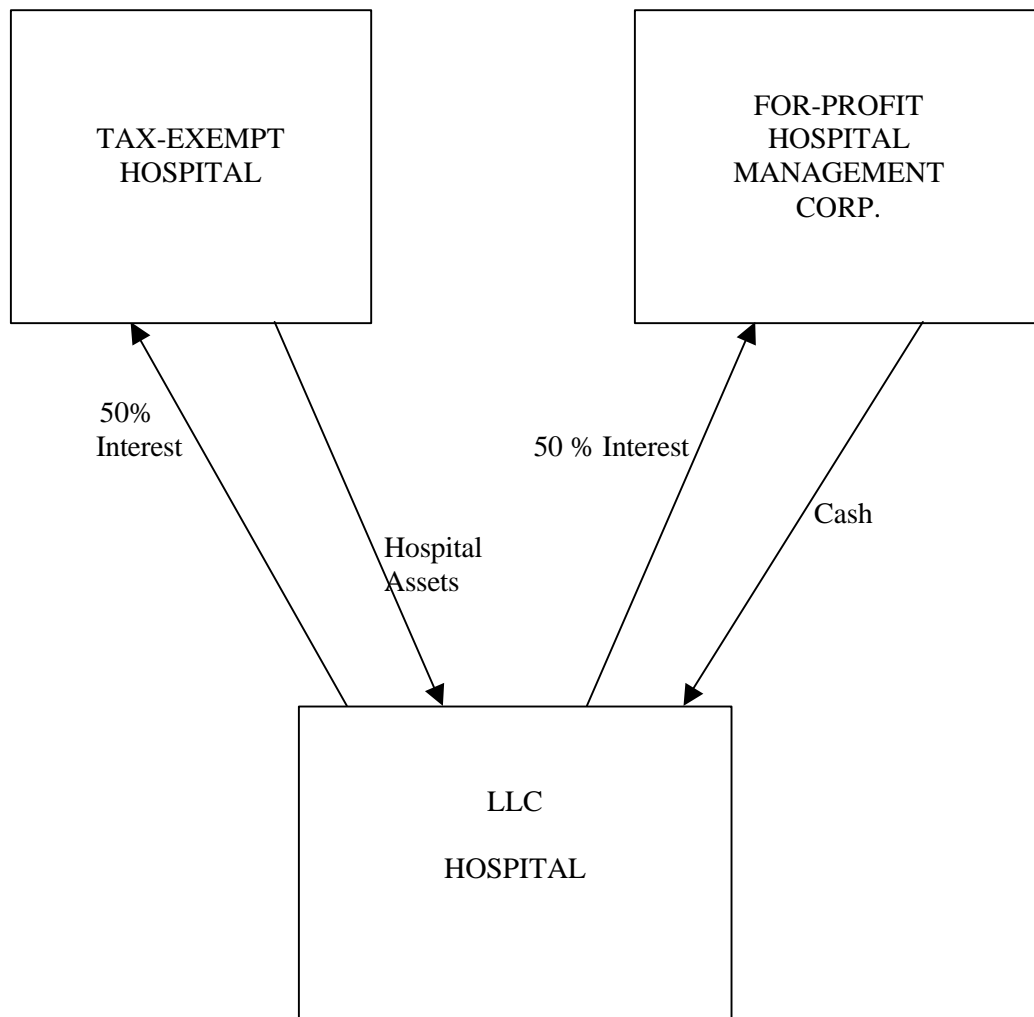
Future studies should investigate the impact of joint venture operations on the financial position of the nonprofit organization, through the use of a time series methodology examining pre- and post-joint venture. Future research should also investigate the impact of joint venture announcements on the stock price of the for-profit partner, and explore the characteristics of nonprofit hospitals through a case study analysis. A case study may illustrate other non-financial measures that distinguish nonprofit and for-profit hospitals.

Another opportunity for future research would involve investigating the financial characteristics of those nonprofit hospitals under IRS audit for violations of the guidelines of Rev. Rul. 98-15. This type of investigation may help determine the characteristics the IRS feels contributes to profit-maximizing behavior, and determine what aspects of the joint venture jeopardize a nonprofit firm's tax-exempt status. Future analysis of nonprofit and for-profit hospitals should examine whether different statistical techniques are applicable to illustrate further similarities between the two groups.

## **FIGURES AND TABLES**

**FIGURE 1**

**STRUCTURE OF A WHOLE HOSPITAL JOINT VENTURE \***

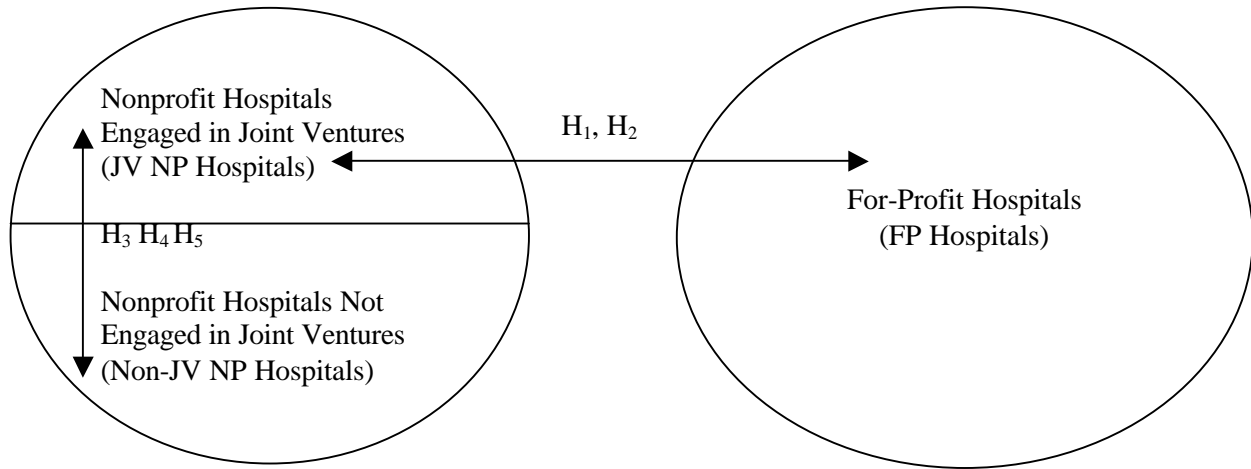


\*Adopted from Salins et al. (1998)

**FIGURE 2**

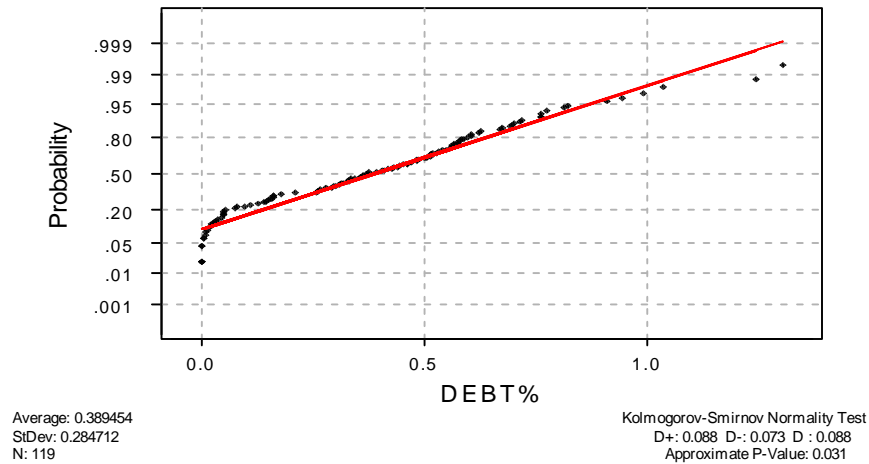
**DIAGRAM OF HYPOTHESES EXAMINED**

**Comparing FP, JV NP Hospitals and Non-JV NP Hospitals**

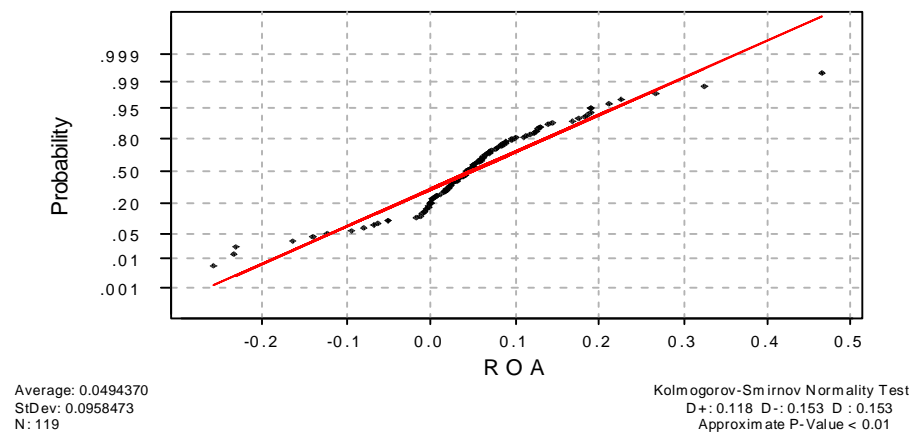


**FIGURE 3**  
**NORMAL PROBABILITY PLOTS\***  
**JV AND NON-JV NP HOSPITALS**

K-S Normal Probability Plot



K-S Normal Probability Plot



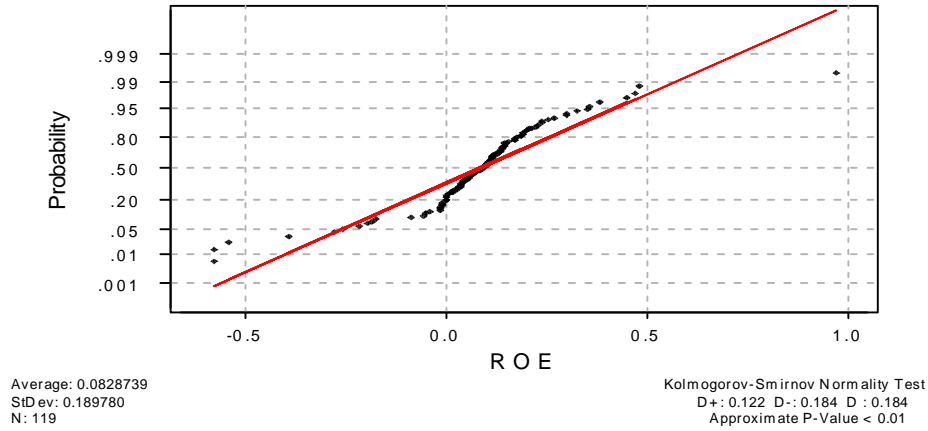
\* The vertical axis has a probability scale and the horizontal axis is the data scale. A least-squares line is fit to the plotted points and drawn on the plot for reference. The line forms an estimate of the cumulative distribution function for the population from which data are drawn. A straight (or close to straight) line indicates normality, and a lot of curvature indicates non-normal data.

**FIGURE 3 (cont.)**

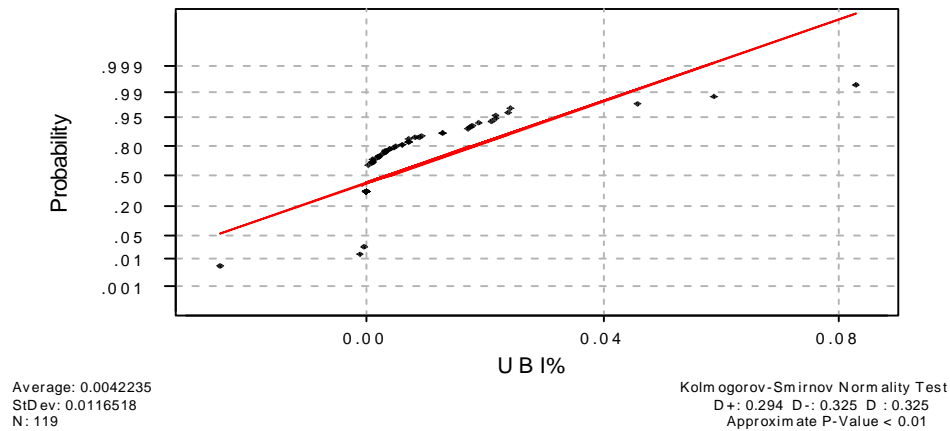
**Normal Probability Plots**

**JV and Non-JV NP Hospitals (cont.)**

**K-S Normal Probability Plot**



**K-S Normal Probability Plot**



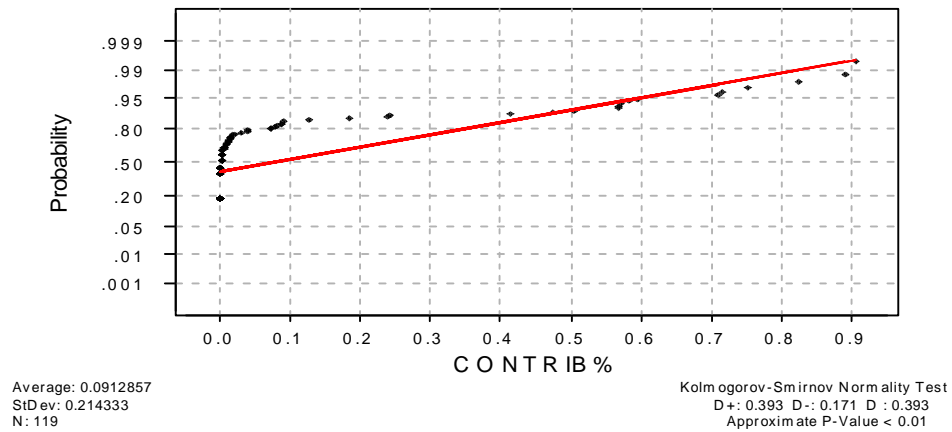


**FIGURE 3 (cont.)**

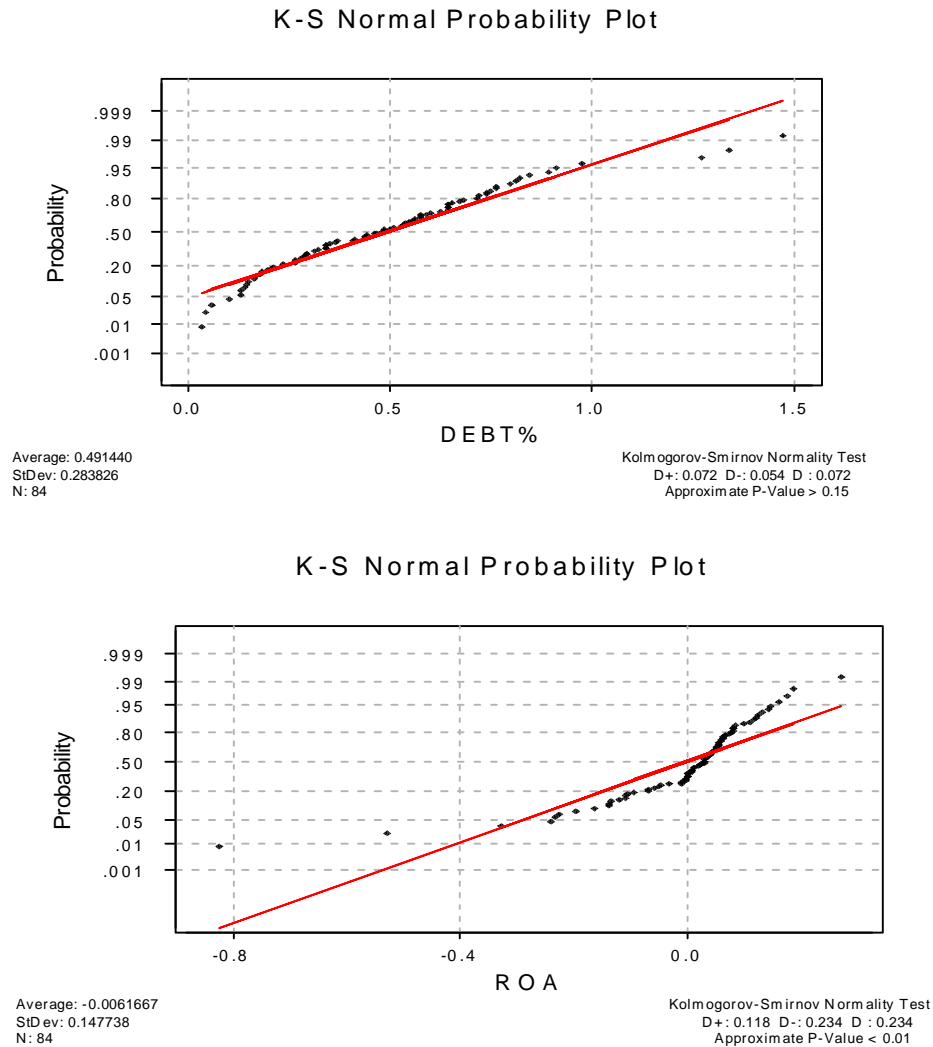
**Normal Probability Plots**

**JV and Non-JV NP Hospitals (cont.)**

**K-S Normal Probability Plot**



**FIGURE 4**  
**NORMAL PROBABILITY PLOTS \***  
**JV AND FP HOSPITALS**



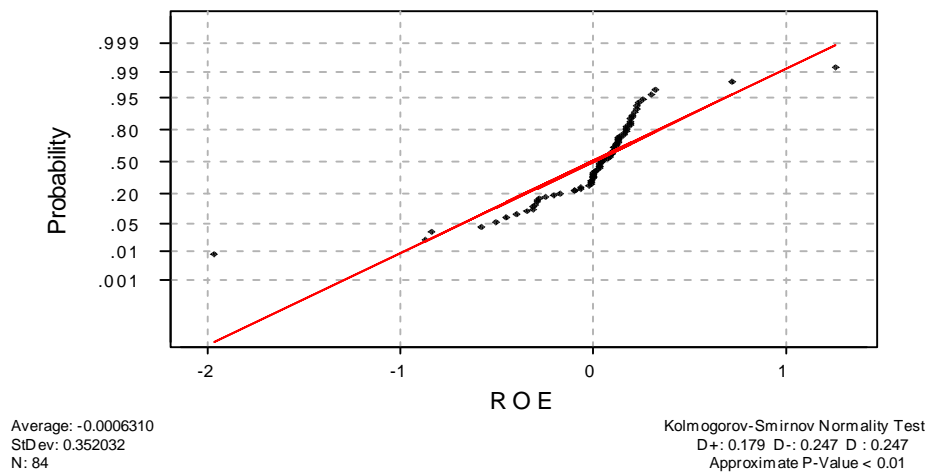
\* The vertical axis has a probability scale and the horizontal axis is the data scale. A least-squares line is fit to the plotted points and drawn on the plot for reference. The line forms an estimate of the cumulative distribution function for the population from which data are drawn. A straight (or close to straight) line indicates normality and a lot of curvature indicates non-normal data.

**FIGURE 4 (cont.)**

**Normal Probability Plots**

**JV and FP Hospitals (cont.)**

**K-S Normal Probability Plot**



**Table 1**  
**Characteristic Differences Between For-Profit and Nonprofit Organizations**

<b>For-Profit</b>	<b>Nonprofit</b>
Corporations owned by investors	Corporations without owners or owned by "members"
Can distribute some proportion of profits (net revenues less expenses) to owners	Cannot distribute surplus (net revenues less expenses) to those who control the organization
Pay property, sales, income taxes	Generally exempt from taxes
Sources of capital include: <ul style="list-style-type: none"> <li>a. Equity capital from investors</li> <li>b. Debt</li> <li>c. Retained Earnings (including depreciation and deferred taxes)</li> <li>d. Return-on-equity payments from third-party payers (i.e. Medicare)</li> </ul>	Sources of capital include: <ul style="list-style-type: none"> <li>a. Charitable Contributions</li> <li>b. Debt</li> <li>c. Retained Earnings (including depreciation)</li> </ul>
Management ultimately accountable to stockholders	Management accountable to voluntary, often self-perpetuating boards
<i>Purpose:</i> Has legal obligation to enhance the wealth of shareholders within the boundaries of law; does so by providing services	<i>Purpose:</i> Has legal obligation to fulfill stated mission (provide services, teaching, research, etc.); must maintain economic viability to do so
Revenues derived from sale of services	Revenues derived from sale of services and from charitable contributions
<i>Mission:</i> Usually stated in terms of growth, efficiency, and quality	<i>Mission:</i> Often stated in terms of charity, quality, and community service, but may also pursue growth
Mission and structure can result in more streamlined decision making and implementation of major decision	Mission and diverse constituencies often complicate decision making and implementation

Source: *For-Profit Enterprise in Health Care* 1986 National Academy Press

**Table 2**  
**Literature Review Summary**

<b>Variable</b>	<b>Measurement</b>	<b>Finding</b>	<b>Study</b>
Debt	Debt to Asset Ratio	FP hospitals have higher debt than NP hospitals	Watt et al. (1986)
	Current Ratio	No statistically significant difference between FP and NP hospitals	
Profitability	Return on Assets (ROA)	FP hospitals are more profitable than NP hospitals	Gentry & Penrod (2000)
	Return on Equity (ROE)		Hoerger (1991) Watt et al. (1986) Pattison (1986) Pattison & Katz (1983)
Commercial Activity	Contributions & Grants Ratio	NP organizations less likely to engage in commercial activity when relying on public donations	Cordes & Weisbrod (1998)
	Filing of 990-T Tax Return	Larger NP hospitals report unrelated business income	

FP denotes for-profit

NP denotes nonprofit

**Table 3**  
**Hypotheses Summary**

**Comparison 1:      JV NP Hospitals vs. FP Hospitals**

<b>Financial Construct</b>	<b>Measurement</b>	<b>Hypothesis</b>	<b>Direction</b>
Debt	DEBT%	H <sub>1</sub>	FP > JV NP
Profitability	ROA ROE	H <sub>2</sub>	FP > JV NP

**Comparison 2:      JV NP Hospitals vs. Non-JV NP Hospitals**

<b>Financial Construct</b>	<b>Measurement</b>	<b>Hypothesis</b>	<b>Direction</b>
Debt	DEBT%	H <sub>3</sub>	JV > Non-JV NP
Profitability	ROA ROFB	H <sub>4</sub>	JV > Non-JV NP
Commercial Activity	UBI% CONTRIB% <sup>(1)</sup>	H <sub>5</sub>	JV > Non-JV NP

<sup>(1)</sup> It is expected that JV NP hospitals will report lower CONTRIB% than Non-JV NP hospitals due to the inverse relationship found by Cordes & Weisbrod (1998) between donations and commercial activity revenue

Definitions:

FP = for-profit hospital

JV NP = nonprofit hospitals engaging in joint ventures

Non-JV NP = nonprofit hospitals that do not engage in joint ventures

DEBT% = Total Liabilities / Total Assets

ROA = Net Income / Average Total Assets

ROE = Net Income / Average Stockholders' Equity

ROFB = Net Income / Average Fund Balance

UBI% = Total Unrelated Business Income / Total Revenue

CONTRIB% = Total Contributions / Total Revenue

**Table 4**  
**Total Sample Sizes**

<b>Year</b>	<b>JV NP Hospitals</b>	<b>%</b>	<b>Non-JV NP Hospitals</b>	<b>%</b>	<b>For-Profit Hospitals</b>	<b>%</b>
<b>1994</b>	5	22%	22	22%	21	35%
<b>1995</b>	6	26%	25	26%	25	40%
<b>1996</b>	12	52%	49	52%	15	25%
<b>Total</b>	23	100%	96	100%	61	100%

**Table 5**  
**Tests of Equal Variances**

**Panel A:**

JV and FP Sample: N = 84

Variable	F Value	p-value
DEBT%	1.79	0.1328
ROA	4.19	0.0005 *
ROE	5.83	<0.0001 *

**Panel B:**

JV and Non-JV NP Sample: N = 119

Variable	F Value	p-value
DEBT%	1.79	0.1188
ROA	1.46	0.3139
ROFB	1.36	0.4181
UBI%	2.41	0.0212 **
CONTRIB%	1.42	0.3464

\* Significant at the 0.001 level

\*\* Significant at the 0.05 level

**Definition of Variables:**

DEBT% = Total Liabilities / Total Assets

ROA = Net Income / Average Total Assets

ROE = Net Income / Average Stockholders' Equity

ROFB = Net Income / Average Fund Balance

UBI% = Total Unrelated Business Income / Total Revenue

CONTRIB% = Total Contributions / Total Revenue



**Table 6**  
**Tests for Normality**

**Kolmogorov-Smirnov Normality Test**

**Panel A:**

**JV and FP Sample: N = 84**

Variable	Average	Std. Dev.	D	p-value
DEBT%	49.14%	28.38%	0.0721	>0.15
ROA	-0.62%	14.77%	0.2236	<0.01
ROE	-0.06%	35.20%	0.2352	<0.01

**Panel B:**

**JV and Non-JV Sample: N = 119**

Variable	Average	Std. Dev.	D	p-value
DEBT%	38.95%	28.47%	0.0883	0.022
ROA	4.95%	9.59%	0.1531	<0.01
ROFB	8.29%	18.98%	0.1828	<0.01
UBI%	0.42%	1.17%	0.3341	<0.01
CONTRIB%	9.13%	21.43%	0.3941	<0.01

Definition of Variables:

DEBT% = Total Liabilities / Total Assets

ROA = Net Income / Average Total Assets

ROE = Net Income / Average Stockholders' Equity

ROFB = Net Income / Average Fund Balance

UBI% = Total Unrelated Business Income / Total Revenue

CONTRIB% = Total Contributions / Total Revenue

**Table 7**  
**Descriptive Statistics**

**Full Sample**

**Panel A: JV NP Hospitals (N=23)**

Variable	Mean	Standard Deviation	Median	Minimum	Maximum
DEBT%	40.06%	22.30%	46.14%	3.44%	76.42%
ROA	1.63%	8.10%	2.75%	-23.33%	13.11%
ROFB	2.90%	16.61%	8.72%	-57.82%	23.62%
UBI%	0.55%	0.80%	0.13%	-0.05%	2.44%
CONTRIB%	4.49%	18.46%	0.30%	0.00%	89.06%

**Panel B: Non-JV NP Hospitals (N=96)**

Variable	Mean	Standard Deviation	Median	Minimum	Maximum
DEBT%	38.68%	29.86%	37.10%	0.00%	130.71%
ROA	5.74%	9.79%	4.63%	-25.93%	46.56%
ROFB	9.58%	19.36%	9.58%	-57.62%	97.10%
UBI%	0.39%	1.24%	0.00%	-2.53%	8.34%
CONTRIB%	10.24%	22.03%	0.32%	0.00%	90.59%

Definition of Variables:

DEBT% = Total Liabilities / Total Assets

ROA = Net Income / Average Total Assets

ROE = Net Income / Average Stockholders' Equity

ROFB = Net Income / Average Fund Balance

UBI% = Total Unrelated Business Income / Total Revenue

CONTRIB% = Total Contributions / Total Revenue

**TABLE 7 (cont.)****Descriptive Statistics****Full Sample****Panel C: FP Hospitals (N=61)**

Variable	Mean	Standard Deviation	Median	Minimum	Maximum
DEBT%	52.58%	29.81%	50.02%	5.92%	147.31%
ROA	-1.47%	16.59%	2.75%	-82.39%	26.86%
ROE	-1.18%	40.10%	4.23%	-196.32%	125.80%

## Definition of Variables:

DEBT% = Total Liabilities / Total Assets

ROA = Net Income / Average Total Assets

ROE = Net Income / Average Stockholders' Equity

ROFB = Net Income / Average Fund Balance

UBI% = Total Unrelated Business Income / Total Revenue

CONTRIB% = Total Contributions / Total Revenue

**Table 8**  
**Pearson / Spearman Correlation Matrices**

**JV and FP Hospital Sample**

**Panel A: FULL SAMPLE (N = 84)**

	<b>DEBT%</b>	<b>ROA</b>	<b>ROE</b>
<b>DEBT%</b>	1.00000	-0.16799 (0.12)	0.05360 (0.62)
<b>ROA</b>	-0.16698 (0.12)	1.00000	0.77232 (<0.0001)
<b>ROE</b>	-0.07348 (0.50)	0.71625 (<0.0001)	1.00000

**Panel B: JV SAMPLE (N = 23)**

	<b>DEBT%</b>	<b>ROA</b>	<b>ROE</b>
<b>DEBT%</b>	1.00000	-0.20652 (0.34)	-0.02372 (0.91)
<b>ROA</b>	-0.14111 (0.52)	1.00000	0.93083 (<0.0001)
<b>ROE</b>	0.03773 (0.86)	0.94809 (<0.0001)	1.00000

Definition of Variables:

DEBT% = Total Liabilities / Total Assets

ROA = Net Income / Average Total Assets

ROE = Net Income / Average Stockholders' Equity; Net Income / Average Fund Balance for the JV sample

**TABLE 8 (cont.)****Pearson / Spearman Correlation Matrices****JV and FP Hospital Sample****Panel C: FP SAMPLE (N = 61)**

	<b>DEBT%</b>	<b>ROA</b>	<b>ROE</b>
<b>DEBT%</b>	1.00000	-0.15786 (0.22)	0.02782 (0.83)
<b>ROA</b>	-0.15515 (0.23)	1.00000	0.73125 (<0.0001)
<b>ROE</b>	-0.07736 (0.55)	0.69891 (<0.0001)	1.00000

Definition of Variables:

DEBT% = Total Liabilities / Total Assets

ROA = Net Income / Average Total Assets

ROE = Net Income / Average Stockholders' Equity; Net Income / Average Fund Balance for the JV sample

**Table 9**  
**Pearson / Spearman Correlation Matrices**  
**JV and Non-JV NP Hospital Sample**

**Panel A: FULL SAMPLE (N = 119)**

	<b>DEBT%</b>	<b>ROA</b>	<b>ROFB</b>	<b>UBI%</b>	<b>CONTRIB%</b>
<b>DEBT%</b>	1.00000 ( $<0.05$ )	-0.20880 ( $<0.05$ )	0.04641 (0.61)	0.24247 ( $<0.01$ )	-0.11581 (0.20)
<b>ROA</b>	-0.23926 ( $<0.01$ )	1.00000	0.85850 ( $<0.0001$ )	-0.01781 (0.84)	0.20192 ( $<0.05$ )
<b>ROFB</b>	-0.02164 (0.81)	0.7520 ( $<0.0001$ )	1.00000	0.01456 (0.87)	0.18781 ( $<0.05$ )
<b>UBI%</b>	0.02723 (0.76)	0.02969 (0.74)	-0.03649 (0.69)	1.00000	-0.10858 (0.23)
<b>CONTRIB%</b>	-0.32759 ( $<0.0001$ )	0.29408 ( $<0.01$ )	0.13481 (0.14)	-0.12664 (0.16)	1.00000

**Panel B: JV SAMPLE (N = 23)**

	<b>DEBT%</b>	<b>ROA</b>	<b>ROFB</b>	<b>UBI%</b>	<b>CONTRIB%</b>
<b>DEBT%</b>	1.00000 (0.34)	-0.20652 (0.34)	-0.02372 (0.91)	0.36032 ( $<0.10$ )	-0.03418 (0.87)
<b>ROA</b>	-0.14111 (0.52)	1.00000	0.93083 ( $<0.0001$ )	-0.09437 (0.66)	0.24071 (0.26)
<b>ROFB</b>	0.03773 (0.86)	0.94809 ( $<0.0001$ )	1.00000	-0.04794 (0.82)	0.29421 (0.17)
<b>UBI%</b>	0.19543 (0.37)	-0.48653 ( $<0.05$ )	-0.46660 ( $<0.05$ )	1.00000	0.40827 ( $<0.05$ )
<b>CONTRIB%</b>	-0.27050 (0.21)	0.15255 (0.48)	0.10495 (0.63)	-0.13488 (0.53)	1.00000

**TABLE 9 (cont.)****Pearson / Spearman Correlation Matrices****JV and Non-JV NP Hospital Sample****Panel C: NON-JV SAMPLE (N = 96)**

	<b>DEBT%</b>	<b>ROA</b>	<b>ROFB</b>	<b>UBI%</b>	<b>CONTRIB%</b>
<b>DEBT%</b>	1.00000 (0.00)	-0.19892 (0.05)	0.07188 (0.48)	0.21399 (0.05)	-0.12288 (0.23)
<b>ROA</b>	-0.25377 (0.01)	1.00000 (0.00)	0.84865 (0.0001)	0.01644 (0.87)	0.17818 (0.10)
<b>ROFB</b>	-0.02762 (0.78)	0.71321 (0.0001)	1.00000 (0.00)	0.03940 (0.70)	0.16408 (0.11)
<b>UBI%</b>	0.00739 (0.94)	0.10475 (0.30)	0.02667 (0.79)	1.00000 (0.00)	-0.20144 (0.05)
<b>CONTRIB%</b>	-0.33660 (0.01)	0.30243 (0.01)	0.12467 (0.22)	-0.12054 (0.24)	1.00000 (0.00)

## Definition of Variables:

DEBT% = Total Liabilities / Total Assets

ROA = Net Income / Average Total Assets

ROFB = Net Income / Average Fund Balance

UBI% = Total Unrelated Business Income / Total Revenue

CONTRIB% = Total Contributions / Total Revenue

**Table 10**  
**Location Comparisons**  
**JV and FP Hospital Sample**

Variable	Type <sup>(a)</sup>	Mean	t <sup>(b)</sup>	p-value	Median	W <sup>(c)</sup>	p-value
DEBT%	FULL	49.14%	1.83	0.035*	48.32%	808	0.045*
	JV	40.06%			46.14%		
	FP	52.58%			50.02%		
ROA	FULL	-0.62%	-1.14	0.128	2.75%	1026	0.315
	JV	1.63%			2.75%		
	FP	-1.47%			2.75%		
ROE	FULL	-0.06%	-0.66	0.256	5.15%	966	0.456
	JV	2.90%			8.72%		
	FP	-1.18%			4.23%		

\* Significant at the 0.05 level

(a) FULL = entire sample of JV and FP hospitals; N = 84  
JV = nonprofit joint venture hospitals; N = 23  
FP = for-profit hospitals; N = 61

(b) A one-tailed t-test of mean differences between JV and FP hospitals, with all variables testing FP>JV

t values calculated using the unequal variance t-test (Satterthwaite method) for all variables except DEBT%, which is based on the pooled t-test

(c) Wilcoxon Rank Sum test statistic; p-values based on a two-tailed test

Definition of Variables:

DEBT% = Total Liabilities / Total Assets

ROA = Net Income / Average Total Assets

ROE = Net Income / Average Stockholders' Equity



**Table 11**  
**Location Comparisons**  
**JV and Non-JV NP Hospital Sample**

Variable	Type <sup>(a)</sup>	Mean	t <sup>(b)</sup>	p-value	Median	W <sup>(c)</sup>	p-value
DEBT%	All NP	38.95%	-0.21	0.4177	37.39%	1458	0.3010
	JV	40.06%			46.14%		
	Non-JV	38.68%			37.10%		
ROA	All NP	4.95%	1.86	0.0324*	4.51%	1127	0.0446*
	JV	1.63%			2.75%		
	Non-JV	5.74%			4.63%		
ROFB	All NP	8.29%	1.52	0.0652**	9.00%	1153	0.0637**
	JV	2.90%			8.72%		
	Non-JV	9.58%			9.58%		
UBI%	All NP	0.42%	-0.77	0.2238	0.00%	1652	0.0219*
	JV	0.55%			0.13%		
	Non-JV	0.39%			0.00%		
CONTRIB%	All NP	9.13%	1.16	0.1247	0.30%	1308	0.3144
	JV	4.49%			0.30%		
	Non-JV	10.24%			0.32%		

\* Significant at the 0.05 level

\*\* Significant at the 0.10 level

(a) All NP = entire sample of JV and Non-JV hospitals; N = 119

JV = nonprofit joint venture hospitals; N = 23

Non-JV = nonprofit non-joint venture hospitals; N = 96

(b) A one-tailed t-test of mean differences between JV and Non-JV hospitals, with all variables testing JV > Non-JV

t values calculating using the pooled t-test for all variables except UBI%, which is based on the unequal variance t-test (Satterthwaite method)

(c) Wilcoxon Rank Sum test statistic; p-values based on a two-tailed test

Definition of Variables:

DEBT% = Total Liabilities / Total Assets

ROA = Net Income / Average Total Assets

ROFB = Net Income / Average Fund Balance

UBI% = Total Unrelated Business Income / Total Revenue

CONTRIB% = Total Contributions / Total Revenue

**Table 12**  
**Analysis of Variance**  
**JV and FP Hospital Sample**

DEBT%:

Source	DF	Sum of Squares	Mean Square	F Value	p-value	
STATUS	1	0.2612	0.2612	3.45	0.0669	**
SIZE	1	0.2978	0.2978	3.93	0.0507	*
STATUS*SIZE	1	0.0726	0.0726	0.96	0.3304	NS
Error	80	6.0548	0.0757			
Corrected Total	83	6.6864				

ROA:

Source	DF	Sum of Squares	Mean Square	F Value	p-value	
STATUS	1	0.0161	0.0161	0.72	0.3986	NS
SIZE	1	0.0000	0.0000	0.00	0.9600	NS
STATUS*SIZE	1	0.0119	0.0119	0.53	0.4675	NS
Error	80	1.7829	0.0222			
Corrected Total	83	1.8109				

ROE:

Source	DF	Sum of Squares	Mean Square	F Value	p-value	
STATUS	1	0.0278	0.0278	0.22	0.6423	NS
SIZE	1	0.0099	0.0099	0.08	0.7816	NS
STATUS*SIZE	1	0.0107	0.0107	0.08	0.7731	NS
Error	80	10.2375	0.1279			
Corrected Total	83	10.2859				

\* Significant at the 0.05 level

\*\* Significant at the 0.10 level

NS = Not statistically significant

Definition of Variables:

STATUS = hospital type; "1" for JV NP hospital and "0" for FP hospital

SIZE = hospital size; "1" for large, "0" for small

**Table 13**  
**Analysis of Variance**  
**JV and Non-JV NP Hospital Sample**

DEBT%:

Source	DF	Sum of Squares	Mean Square	F Value	p-value	
STATUS	1	0.0035	0.0035	0.04	0.8360	NS
SIZE	1	0.0797	0.0797	0.97	0.3274	NS
STATUS*SIZE	1	0.0044	0.0044	0.05	0.8184	NS
Error	115	9.4788	0.0824			
Corrected Total	118	9.5664				

ROA:

Source	DF	Sum of Squares	Mean Square	F Value	p-value	
STATUS	1	0.0313	0.0313	3.45	0.0657	**
SIZE	1	0.0047	0.0047	0.52	0.4718	NS
STATUS*SIZE	1	0.0072	0.0072	0.80	0.3732	NS
Error	115	1.0421	0.0090			
Corrected Total	118	1.0853				

ROFB:

Source	DF	Sum of Squares	Mean Square	F Value	p-value	
STATUS	1	0.0827	0.0827	2.30	0.1320	NS
SIZE	1	0.0019	0.0019	0.05	0.8164	NS
STATUS*SIZE	1	0.0355	0.0355	0.99	0.3224	NS
Error	115	4.1306	0.0359			
Corrected Total	118	4.2507				

\*\* Significant at the 0.10 level

NS = Not statistically significant

Definition of Variables:

STATUS = hospital type; "1" for JV NP hospital and "0" for FP hospital

SIZE = hospital size; "1" for large, "0" for small

**TABLE 13 (cont.)****Analysis of Variance****JV and NON-JV NP Hospital Sample**

UBI%:

Source	DF	Sum of Squares	Mean Square	F Value	p-value	
STATUS	1	0.0001	0.0001	0.34	0.5594	NS
SIZE	1	0.0000	0.0000	0.15	0.7014	NS
STATUS*SIZE	1	0.0000	0.0000	0.10	0.7528	NS
Error	115	0.0160	0.0001			
Corrected Total	118	0.0161				

CONTRIB%:

Source	DF	Sum of Squares	Mean Square	F Value	p-value	
STATUS	1	0.0614	0.0614	1.37	0.2436	NS
SIZE	1	0.2114	0.2114	4.73	0.0317	*
STATUS*SIZE	1	0.0104	0.0104	0.23	0.6301	NS
Error	115	5.1375	0.0446			
Corrected Total	118	5.4207				

\* Significant at the 0.05 level

NS = Not statistically significant

Definition of Variables:

STATUS = hospital type; "1" for JV NP hospital and "0" for FP hospital

SIZE = hospital size; "1" for large, "0" for small

**Table 14**  
**Logistic Regression**  
**JV and FP Hospital Sample**

Model:

1

$$P(Y_i) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 \text{DEBT}\%_i + \beta_2 \text{ROA}_i + \beta_3 \text{ROE}_i + \beta_4 \text{ASSETS}_i)}}$$

	<u>Chi-Square</u>	<u>Pr &gt; ChiSq</u>
Likelihood Ratio	8.1544	0.0861

Variable	Parameter Estimate	Standard Error	Pr>ChiSq
Intercept	-0.2148	0.4930	0.6631
DEBT%	-0.9632	1.0100	0.3402
ROA	1.1906	3.0639	0.6976
ROE	0.0118	1.1987	0.9922
ASSETS	-507E-12	4.11E-10	0.2170

Where:

$Y_i$  = dummy variable to designate organizational form; coded as 1 for JV NP hospital and 0 for FP hospital.

$\text{DEBT}\%_i = \text{Total Liabilities} / \text{Total Assets}$

$\text{ROA}_i = \text{Net Income} / \text{Average Total Assets}$

$\text{ROE}_i = \text{Net Income} / \text{Average Stockholders' Equity}$

$\text{ASSETS}_i = \text{Total Assets at the end of the year}$

**Table 15**  
**Logistic Regression**  
**JV and Non-JV NP Hospital Sample**

Model:

1

$$P(Y_i) = \frac{e^{-(\beta_0 + \beta_1 \text{DEBT}\%_i + \beta_2 \text{ROA}_i + \beta_3 \text{ROFB}_i + \beta_4 \text{UBI}\%_i + \beta_5 \text{CONTRIB}\%_i + \beta_6 \text{ASSETS}_i)}}{1 + e^{-(\beta_0 + \beta_1 \text{DEBT}\%_i + \beta_2 \text{ROA}_i + \beta_3 \text{ROFB}_i + \beta_4 \text{UBI}\%_i + \beta_5 \text{CONTRIB}\%_i + \beta_6 \text{ASSETS}_i)}}$$

	<u>Chi-Square</u>	<u>Pr &gt; ChiSq</u>
Likelihood Ratio	16.0871	0.0133

Variable	Parameter Estimate	Standard Error	Pr>ChiSq
Intercept	-1.3715	0.4970	0.0058 *
DEBT%	-0.8807	0.9727	0.3652
ROA	-6.3124	5.1159	0.2172
ROFB	0.3088	2.4287	0.8988
UBI%	0.1578	23.3559	0.9946
CONTRIB%	-0.5705	1.6631	0.7316
ASSETS	2.995E-9	1.037E-9	0.0039 *

\* Significant at the 0.01 level

**TABLE 15 (cont.)**  
**Logistic Regression**  
**JV and Non-JV NP Hospital Sample**

Panel (B): Stepwise Selection Procedure Results

Variable	Parameter Estimate	Standard Error	Pr>ChiSq	
Intercept	-1.7382	0.3065	<0.0001	*
ROA	-5.6242	2.8566	0.0490	**
ASSETS	2.852E-9	9.67E-10	0.0032	*

\* Significant at the 0.01 level

\*\* Significant at the 0.05 level

Where:

$Y_i$  = dummy variable to designate organizational form; coded as 1 for JV NP hospital and 0 for Non-JV NP hospital.

$DEBT\%_i$  = Total Liabilities / Total Assets

$ROA_i$  = Net Income / Average Total Assets

$ROFB_i$  = Net Income / Average Fund Balance

$UBI\%_i$  = Total Unrelated Business Income / Total Revenue

$CONTRIB\%_i$  = Total Contributions / Total Revenue

$ASSETS_i$  = Total Assets at the end of the year

**Table 16**  
**Summary of Findings**  
**p-values for each statistical method**

**Panel A: Comparison 1 - JV NP vs. FP Hospitals**

H<sub>1</sub>: FP > JV NP  
H<sub>2</sub>: FP > JV NP

<b>Financial Construct</b>	<b>Measurement</b>	<b>Hypothesis</b>	<b>t-test</b>	<b>Wilcoxon</b>	<b>ANOVA</b>	<b>Logistic</b>
Debt	DEBT%	H <sub>1</sub>	0.035*	0.045*	0.0669**	0.3402
Profitability	ROA	H <sub>2</sub>	0.128	0.315	0.3986	0.6976
	ROE		0.256	0.456	0.6423	0.9922

\* Significant at the 0.05 level

\*\* Significant at the 0.10 level

**Definitions:**

FP = for-profit hospital

JV NP = nonprofit hospitals engaging in joint ventures

DEBT% = Total Liabilities / Total Assets

ROA = Net Income / Average Total Assets

ROE = Net Income / Average Stockholders' Equity



**Table 16 (cont.)**

**Summary of Findings**

**p-values for each statistical method**

**Panel B: Comparison 2 - JV NP vs. Non-JV NP Hospitals**

- H<sub>3</sub>: JV NP > Non-JV NP  
H<sub>4</sub>: JV NP > Non-JV NP  
H<sub>5</sub>: JV NP > Non-JV NP

<b>Financial Construct</b>	<b>Measurement</b>	<b>Hypothesis</b>	<b>t-test</b>	<b>Wilcoxon</b>	<b>ANOVA</b>	<b>Logistic</b>
Debt	DEBT%	H <sub>3</sub>	0.4177	0.3010	0.8360	0.3652
Profitability	ROA	H <sub>4</sub>	0.0324*	0.0446*	0.0657**	0.2172
	ROFB		0.0652**	0.0637**	0.1320	0.8988
Commercial Activity	UBI%	H <sub>5</sub>	0.2238	0.0219*	0.5594	0.9946
	CONTRIB%		0.1247	0.3144	0.2436	0.7316

\* Significant at the 0.05 level

\*\* Significant at the 0.10 level

**Definitions:**

JV NP = nonprofit hospitals engaging in joint ventures

Non-JV NP = nonprofit hospitals that do not engage in joint ventures

DEBT% = Total Liabilities / Total Assets

ROA = Net Income / Average Total Assets

ROFB = Net Income / Average Fund Balance

UBI% = Total Unrelated Business Income / Total Revenue

CONTRIB% = Total Contributions / Total Revenue

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## APPENDIX A

### Dow Jones News Retrieval Sample Selection for JV NP Hospitals

The web-based version of Dow Jones Interactive ([www.djnr.com](http://www.djnr.com)) was used to identify the JV NP hospital sample. The 'Publications Library' of the Dow Jones News Retrieval System includes over 6,000 newswires, newspapers, magazines, and trade journals. A keyword search of the Publications Library was performed for all publications and all dates (which includes current and previous year, current and previous month, and current day). The following keyword searches were performed:

Keywords	Article Results
(joint venture) same <sup>1</sup> (hospital)	7,845
(joint venture) same (nonprofit hospital)	73
(joint venture) same (for-profit hospital)	196
(joint venture) and <sup>2</sup> (nonprofit hospital)	239
(joint venture) and (for-profit hospital)	784

<sup>1</sup> 'same' indicates search for keywords/phrases within the same paragraph

<sup>2</sup> 'and' indicates search for keywords/phrases in the same article

All of the resulting articles were read for specific content. Only those articles that contained the announcement of a joint venture between a nonprofit and for-profit hospital were selected for sample inclusion. Hospitals announcing joint ventures with for-profit hospitals were the focus of the search because emphasis of this study is on the basic (i.e. innate) financial characteristics of nonprofit hospitals choosing to engage in these types of activities. This approach is based on the IRS's argument that JV NP hospitals may exhibit some innately different financial characteristics from other nonprofit hospitals. The actual success or failure of the joint venture is not a focus of the study, thus it was not a consideration when analyzing the resulting articles.

This analysis process resulted in 48 nonprofit hospitals announcing a joint venture with a for-profit partner. From this sample of 48 observations, 25 hospitals were eliminated. Hospitals

were eliminated from the sample for the following reasons: the identified nonprofit partner was not really a hospital, the announced joint venture did not occur within the examined time frame of 1994 through 1996, or tax return data for the organization was missing from the National Center for Charitable Statistics (NCCS) database. This approach resulted in a final JV NP hospital sample size of 23 observations.

## **APPENDIX B**

### **Sample Firms**

#### **JV NP Hospitals**

ARLINGTON HEALTH FOUNDATION  
BAPTIST HEALTHCARE SYSTEM, INC.  
BETHANY MEDICAL CENTER  
HENRY MAYO NEWHALL MEMORIAL HOSPITAL  
HILLCREST HEALTHCARE SYSTEM  
HOWARD COUNTY GENERAL HOSPITAL INC.  
INTEGRIS HEALTH, INC.  
MT. SINAI MEDICAL CENTER  
MOUNT CARMEL HEALTH  
NORTHWEST HOSPITAL  
ORLANDO REGIONAL HEALTHCARE SYSTEM, INC.  
PHOEBE PUTNEY HEALTH SYSTEMS, INC.  
REDLANDS COMMUNITY HOSPITAL  
RIVERSIDE COMMUNITY HOSPITAL  
ST. ANTHONY HOSPITAL  
ST. DAVID'S HOSPITAL  
ST. JOSEPHS HOSPITAL OF PARKERSBURG  
SAMARITAN HEALTH SYSTEM  
SCRIPPS HEALTH  
SHARP MEMORIAL HOSPITAL  
SHARP HOSPITALS FOUNDATION  
SISTERS OF CHARITY OF THE INCARNATE WORK  
WINTER PARK MEMORIAL HOSPITAL

#### **Non-JV NP Hospitals**

ABINGTON MEMORIAL HOSPITAL FDN  
ACADIA HOSPITAL CORP  
ARCHSTONE FDN  
ARKANSAS VALLEY REGIONAL MEDICAL CENTER  
BELLIN MEMORIAL HOSPITAL  
BENEFIS HEALTH CARE  
BETSY JOHNSON MEMORIAL HOSP INC



BON SECOURS OF MICHIGAN FDN  
BURLINGTON MEDICAL CENTER FOUNDATION CORPORATION  
CAROLINA MEDICORP INC  
CENTRAL MICHIGAN COMMUNITY HOSPITAL  
CHILDREN'S HEALTH FDN INC  
COMMUNITY GENERAL OSTEOPATHIC HOSPITAL  
CRAVEN REGIONAL MEDICAL CENTER  
CROUSE IRVING MEMORIAL FOUNDATION INC  
CUMBERLAND MEDICAL CENTER  
EASTER SEAL SOCIETY OF DEL-MAR INC  
EMORY-ADVENTIST INC  
GOOD SAMARITAN HOSP UNITED STATES CATHOLIC CONFER  
GRACE HOSPITAL  
GRACE LUTHERAN FDN INC  
GREAT PLAINS REGIONAL MEDICAL CENTER  
GREATER SOUTHEAST COMMUNITY CENTER FOR THE AGING  
HARTFORD HEALTH CARE CORPORATION  
HEALTH VENTURES  
HILLCREST HEALTHCARE CORP  
HMS-PBBH SFCC RADIOLOGY FDN INC  
HOSPITAL HILL HEALTH SERVICES CORP  
INTERNATIONAL CENTER FOR THE DISABLED INC  
INTERSTATE MEDICAL CENTER  
ISAAC H TUTTLE FUND  
JOHNS HOPKINS HOSPITAL INC  
JOHNSON MEMORIAL HOSPITAL  
KINGS DAUGHTERS HOSP  
LEGACY HEALTH SYSTEM  
LIBERTY RIVERSIDE HEALTHCARE INC  
LOURDES HOSPITAL INC  
MAGEE-WOMENS HEALTH FOUNDATION  
MARTHAS VINEYARD HOSP INC  
MASONIC CHARITY FDN OF CONNECTICUT  
MEMORIAL HOSP OF WM F & GERTRUDE F JONES INC  
MERCY CENTER FOR HEALTH CARE SERVICES  
MERCY MEDICAL CENTER  
METHODIST CHURCH HOME FOR AGED CITY OF NEW YORK  
METHODIST HOSPITAL  
METHODIST HOSPITAL OF DYERSBURG  
MIRIAM HOSPITAL  
NAVAPACHE HEALTHCARE ASSN INC  
NEW BRUNSWICK AFFILIATED HOSPITALS INC  
NORTHEASTERN REGIONAL HOSPITAL  
NORTHWEST GEORGIA HEALTH SYSTEM INC  
ONEIDA HEALTH CARE CORPORATION  
OVERLOOK HOSPITAL FOUNDATION

PASADENA HOSP ASSN LTD  
 PHILADELPHIA HAT SOCIETY  
 PHOENIX BAPTIST HOSPITAL AND MEDICAL CENTER INC  
 PLANNED PARENTHOOD OF ORANGE & DURHAM COUNTIES INC  
 PRESBYTERIAN FDN FOR PHILADELPHIA  
 PRESBYTERIAN HOSPITAL FDN  
 QUEEN OF PEACE HOSPITAL  
 RESEARCH FOUNDATION  
 RESURRECTION AMBULATORY CARE SERVICES  
 ROANOKE-CHOWAN HOSPITAL INC  
 ROSALIND & JOSEPH GURWIN JEWISH GERIATRIC CTR INC  
 SADDLEBACK MEMORIAL MEDICAL CENTER  
 SAINT THOMAS HOSPITAL  
 SAINT VINCENT HEALTH CENTER  
 SALEM HOSPITAL  
 SALINAS VALLEY MEMORIAL HOSP DIST  
 SENTARA LIFE CARE CORPORATION  
 SISTERS OF CHARITY OF THE INCARNATE WORD  
 SISTERS OF THE THIRD ORDER OF ST FRANCIS  
 SOUTH SHORE HEALTH & EDUCATIONAL CORP  
 SPRINGFIELD MEDICAL CARE SYSTEMS INC  
 ST. BARNABAS CHARITABLE FOUNDATION INC  
 ST. FRANCIS HEALTH CARE SERVICES  
 ST. FRANCIS HOSPITAL-BEACON  
 ST. JOSEPH HOSPITAL INC  
 ST. JOSEPH MANOR NURSING & EXTENDED CARE FACILITY  
 ST. JOSEPHS HOSP & HEALTH CTR  
 ST. JOSEPHS HOSP INC  
 ST. MARYS MEDICAL CENTER  
 ST. LUKES METHODIST HOSPITAL  
 ST. MARY OF THE PLAINS HOSPITAL  
 ST. PAUL MEDICAL CENTER  
 ST. SIMEONS EPISCOPAL HOME  
 SUN COAST HOSPITAL INC  
 TORONTO HOSPITAL  
 TRI-CITY HEALTH CENTRE INC  
 TRINITY MEMORIAL HOSPITAL  
 TRUMBULL MEMORIAL HOSPITAL  
 TRUST ESTATE JOSEPH PAIKO JR  
 UNITED CARE CORPORATION  
 UNITED METHODIST RETIREMENT COMMUNITIES INC  
 WADLEY REGIONAL MEDICAL CTR FDN  
 WELLNESS INC  
 WYTHE COUNTY COMMUNITY HOSPITAL INC  
 ZURBRUGG MEMORIAL HOSPITAL

FP Hospitals

AMERICAN HEALTHCORP INC  
AMERICAN HOSPITAL MANAGEMENT CORP  
AMERICAN MEDICAL HOLDINGS INC  
AMERICAN SHARED HOSPITAL SERVICES  
AMSURG CORP  
BEVERLY ENTERPRISES, INC.  
CARE GROUP, INC.  
CHAMPION HEALTHCARE CORP  
COLUMBIA HCA HEALTHCARE CORP  
COLUMBIA PSYCHIATRIC CENTERS  
COMMUNITY PSYCHIATRIC CENTERS  
COMPREHENSIVE CARE CORP  
CONTINUCARE CORP  
CORAM HEALTHCARE CORPORATION  
DIALYSIS CORP OF AMERICA  
HALLMARK HEALTHCARE CORP  
HEALTH MANAGEMENT ASSOCIATES  
HEALTH MANAGEMENT ASSOCIATION INC  
HEALTHTRUST INC THE HOSPITAL CO  
INTELLIGENT SYSTEMS CORP  
MHM SERVICES INC.  
NATIONAL MEDICAL ENTERPRISES INC  
NEXTHEALTH INC  
OPTIMUMCARE CORP  
ORNDA HEALTHCORP  
PARACELSUS HEALTHCARE CORP  
PEDIATRIX MEDICAL GROUP INC  
QUORUM HEALTH GROUP INC  
RAMSAY HEALTH CARE INC  
TENET HEALTHCARE CORP  
TRANSITIONAL HOSPITALS CORP  
UNIVERSAL HEALTH SERVICES INC.

## **VITA**

### **Pamela C. Smith**

Pamela C. Smith was born in Chicago, Illinois in 1970. She graduated from Christiansburg High School after her family moved to Christiansburg, Virginia in 1984.

After graduating from the University of Virginia with a Bachelor of Science in Accounting in 1992, Pamela started the Masters of Accountancy program at Virginia Tech. Upon receiving her Masters degree in Accounting, with a concentration in Taxation, Pamela worked for Arthur Andersen in Washington, DC from 1994 - 1997.

Pamela has accepted an Assistant Professor of Accounting position at the University of Texas at San Antonio in San Antonio, Texas.