Corporate Governance and the diversification discount:

The implications of the Sarbanes-Oxley Act

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Abstract

We examine whether the Sarbanes-Oxley Act has a major role in reducing the diversification discount and enhancing internal capital markets efficiency. The act proposes new rules and regulations on financial practice and reshapes corporate governance to insure alignment of incentives between corporate insiders and investors. We check the relationship between corporate governance variables and the diversification discount. Finally, we conclude the indirect effects of the act in enhancing efficiency and reducing the diversification discount. We find that the level of corporate governance, especially CEO power, affects the efficient allocation of resources and the diversification discount correspondingly. However, we find that the sensitivity of the diversification discount to CEO power decreases significantly after the implementation of the Sarbanes-Oxley Act, which implies that the restrictions and regulations passed by the act enhance corporate governance and limit the misallocation of resources and the diversification discount respectively.

Introduction:

The issue of corporate diversification attracts a lot of attention among academic researchers; many tackle the benefits, costs, and market reactions to corporate diversification as well as the reasons behind it. Martin and Sayrak (2001) document several rounds in the debate concerning the added value of corporate diversification; diversification discount seems to appear, disappear, and even transform to a premium creating a cyclical trend favoring or disfavoring corporate diversification. Although Servaes (1996) admits that the reason behind changes in the diversification discount is still a puzzle, many studies link it to various variables with the most recent pointing to corporate governance variables. In our paper, we check whether or not the trend was in favor of corporate diversification over the period 1996 – 2005. We also investigate the effect of corporate governance variables, especially CEO power, on the diversification discount (premium) and their relative sensitivity and variation over that period with considerable attention to the changes in sensitivity pre- and post-SOX.

Corporate Governance has a great impact on firms' performance; better governed firms outperform their rivals due to the efficiency of their governance structure. One of the most influencing factors in firms' corporate governance is their CEO power. CEO power is a measure of CEO independence in taking investment decisions, where less CEO power suggest that decisions are taken by a coalition of directors rather than solely by the CEO. The presence of a powerful CEO is in some aspects beneficial to the firm. The powerful CEO has the ability to be more flexible and to act quickly to benefit from promising opportunities. He can also be more creative in developing ideas and finding solutions to emerging problems. However, as the firm size increases and the firm becomes more diversified the effect of CEO power turns to be negative.

CEO in a large diversified firm has to take critical decisions involving different and unrelated industries, and more importantly manage efficiently the firm internal capital market through allocating internally generated funds to the most profitable sectors. These allocation decisions are very critical to firm performance as investing in lower tobin's Q projects will lead to value destruction. Initially, the CEO has the incentive to invest in high tobin's Q projects as a

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large part of his compensation is directly related to firm' performance. However, powerful CEOs in firms with poor corporate governance are driven to take wrong investment decisions either to extract some unlawful benefits or as a result of rent-seeking behavior of divisional managers. As the level of diversification increases in large firms, CEOs ability to follow up with the increasing number of different divisions will decrease. In this way, CEOs will rely more on divisional managers to get the insights of their divisions. Accordingly, rent-seeking behavior will emerge in these diversified firms as some divisional managers will spend more time lobbying in order to convince the CEO to direct additional funds towards their poorly performing divisions. These acts will result in an inefficient allocation of resources as the firm will invest funds in less promising projects and consequently the firm will lose value.

In 2002, the Sarbanes-Oxley act was passed as a response to major corporate scandals. The provisions of the act attempt to enhance corporate governance and to put some binding restrictions on CEOs actions in publicly traded firms. CEOs involved in misconduct are more likely to be involved in other forms of destructive behavior. Such behavior involves the misallocation of internally generated funds. Through empowering corporate governance and making the CEO more vulnerable to stricter penalties in case of misconduct, SOX indirectly encourages the CEO to take decisions in the best interest for investors. Such decisions involve a better management of firms' internal capital market. Therefore, we can conclude that the act will indirectly enhance diversified firms' internal capital market and limits value loss in these firms.

Using a sample of 849 diversified firms over the period 1996-2005 we test the sensitivity of the internal capital markets efficiency and the diversification discount to corporate governance variables. We also check the change in sensitivity caused by the implementation of the Sarbanes-Oxley act. We find a positive relationship between poor corporate governance and the diversification discount. We also find that CEO power is the most influencing governance variable on the inefficient allocation of resources and on the diversification discount respectively. Most importantly, we find that the negative effect of CEO power

decreases significantly after the implementation of the act. These findings suggest a major role of the act in limiting the diversification discount.

Our study contributes to the literature in three ways. First of all, our results support previous findings of the relationship between the inefficient internal capital market and the diversification discount. Moreover, our findings stress on the relevance of corporate governance, especially CEO power, in affecting the efficient allocation of resources and therefore in determining the diversification discount. Finally, our study highlights on some hidden benefits of the Sarbanes-Oxley act in reducing the value loss resulted from corporate diversification. By empowering corporate governance and binding CEOs actions, the act directs CEOs into investment decisions creating more firm value.

The rest of the paper is organized as follows. Section 1 contains related literature. Section 2 includes the hypothesis development and the tested hypotheses. Section 3 contains our sample and measures. In Sections 4 we present the results of our empirical analysis. Finally, we conclude in Section 5.

1. Literature Review:

1.1. Conglomerate and Corporate Diversification:

Numerous studies in the finance literature tackle the topic of corporate diversification, and the debate continues on whether diversification creates or destroys value. Corporate diversification gained momentum in late 1960s with the first conglomerate merger wave. At that time, several potential diversification benefits were documented; Lewellen (1971) shows how the coinsurance effect - a result of imperfect correlation between cash flows generated by different divisions - lead to a better debt capacity for diversified firms. This higher debt ability allows diversified firms to benefit from higher leverage levels and better interest tax shields. Another tax advantage was later revealed by Majd and Myers (1987); Majd and Myers state that as long as one or more segments of a conglomerate firm suffer losses in some periods, this conglomerate will pay less tax than its segments would pay separately due to the tax code's

asymmetric treatment of gains and losses. Other benefits include synergy and economies of scale through reducing the fixed cost of production, greater operating efficiency, and more market power. However, the most prominent advantage of conglomerates was revealed to be their "efficient" internal capital markets.

1.2 Internal Capital Markets:

Corporate diversification is considered to be a normal result of a firm growth, allowing the firm to benefit from alternative growth opportunities (Gomes and Livdan 2002) and to efficiently allocate funds generated internally through directing these funds from the least to the most profitable projects. Stein (1997) explains how this efficient allocation of internal resources, also known as internal capital market, can lead to value creation for diversified firms. The importance of these internal capital markets is even more illustrated when external capital markets are costly or less developed (Williamson 1975; Fauver, Houston, and Naranjo 1998). Moreover, due to the conglomerates' ability to create a larger and more efficient internal capital market (Weston 1970) these firms can limit the underinvestment problem (Stulz 1990). However, and despite the potential benefits of internal capital markets, it was later discovered that diversified firms failed most of the time to direct resources to their highest valued projects, creating therefore an inefficient internal capital market. Consequently, this inefficient allocation causes these firms to lose value.

1.3 The Diversification Discount:

In 1980s the diversification trend was reversed as firms entered an era of refocusing as documented by Bhagat, Shleifer and Vishny (1990), and Comment and Jarrell (1995)[1]; this reversal was mainly due to a belief that corporate diversification destroys value[2]. The notion diversification discount was soon introduced by Lang and Stulz (1994) and many later studies have identified that diversified firms sell at a market discount when compared to specialized

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[1] Comment and Jarrell reveal that single business firms increased from 38.1% of exchange-listed firms in 1979 to 55.7% in 1988, and conclude that reduction in corporate diversification results in an increase in firm value.

[2] Other possible reasons for this reversal were discussed; Shliefer and Vishny (1991) conclude that the looser antitrust policy in 1980s has allowed firms to refocus on their core line of business through horizontal mergers and acquisitions. Liebeskind and Opler (1994) argue that this fact was driven by the intensifying global competition.

stand-alone firms (Servaes 1996, Lins and Servaes 1999, Denis, Denis and Yost 2002). Berger and Ofek (1995) reveal that the discount reached an average of 13% to 15% over the period 1986-1991, and that this discount is correlated with the inefficient allocation of resources – investments in low Q segments. Diversified firms were over investing in projects with lower tobin's Q; this inefficiency was mainly due to the agency problem (Rajan, Servaes, and Zingales 2000) and to the rent-seeking behavior of divisional managers (Scharfstein and Stein 2000).

Further studies show that selections bias, endogeneity problems, and measurement errors may be the reasons behind the diversification discount. Whited (2001) explains how the inaccurate measurement of Tobin's Q may give misleading results and concludes that inefficient investment does not cause the diversification discount. Campa and Kedia (2002) show that selection bias and endogeneity problems explain to a large extent the diversification discount. They also state that conglomerate firms sell at a discount prior to the diversification decision. Similar results were also found by Villalonga (2004), where she finds that the diversification discount disappears after using three different treatment effects estimators to control for endogeneity, and selection bias. Mansi and Reeb (2002), conclude that using book values of debt in computing excess value creates a downward bias for diversified firms. Furthermore, Graham, Lemmon and Wolf (2002) show that much of the excess value reduction occurs because diversified firms acquire already discounted business units, and not because diversification destroys value.

1.4 Recent Studies:

Many recent studies note that corporate diversification creates value, and that diversified firms sell at a market premium rather than a market discount. However, some of these studies link the diversification discount to changes in economic conditions supporting the idea of a cyclical trend favoring or disfavoring corporate diversification strategy. In a study on the plant level, Maskimovic and Philips (2002) find that conglomerates are no less or even more productive than focused firms. Akbulut and Matsusaka (2008), after analyzing the effects of 4,764 mergers over the period 1950 – 2006, conclude that corporate diversification improves corporate performance and leads most of the time to value creation. Hovakimian (2009) find that the

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internal capital market efficiency in diversified firms is related to the business cycle and state that internal capital markets efficiency increases during recessions, when external capital market are more restrictive. These results were supported by new findings by Kuppuswamy and Villalonga (2010), where they reveal that diversified firms increased in value relative to stand alone firms during the financial crisis due to the debt coinsurance and to a more efficient internal capital market.

Meanwhile a large number of academic literature on corporate diversification have stressed the relevance of corporate governance in determining the diversification discount. Jiraporn, Kim, Davidson, and Singh (2005) conclude that when shareholders rights are more restricted (weaker corporate governance), the management tend to diversify the firm unwisely resulting in value destruction. Hoechle, Schmid, Walter, and Yermack (2011) find that the diversification discount is affected to a large extent by corporate governance variables. These findings were also consistent with results of similar studies (Masulis, Wang, and Xie, 2007; Sautner, and Villalonga, 2010). Finally, Ammann, Hoechle, and Schmid (2011), stress out on the importance of corporate governance in determining the diversification discount and state that the diversification discount may be due to agency problems rather than to cross-subsidization of divisions.

In this paper, we use a set of variables (focusing on corporate governance variables) to identify the main variables affecting the inefficient allocation of resources and the diversification discount (premium). Consequently, by testing market reactions to corporate inefficiency, we conclude to which extent the diversification discount is explained by the inefficient internal capital markets. And finally, we check whether recent corporate legislation has a great impact on corporate diversification through imposing restrictions and limitations on directors' misconduct. In order to accomplish our task, we use an exogenous event[3] that have a direct effect on firms' corporate governance; The Sarbanes-Oxley Act.

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[3] Many studies have used changes in law as exogenous shocks in order to overcome the endogeneity problem. Giannetti and Laeven (2009), employ a pension reform in Sweden to explore the effects of institutional ownership on performance. While Sautner and Villalonga (2010), use a tax reform in Germany as an exogenous event to discover the link between corporate governance and internal capital markets.

1.5 The Sarbanes-Oxley Act:

The Sarbanes-Oxley Act (also known as SOX) is considered one of the most important securities legislation since 1930s[4]. SOX was passed by the congress on July 25, 2002 as a quick response to major corporate scandals at that time (Enron, Tyco International, WorldCom, and other firms involved in fraudulent acts). The act, that also followed the 2000 dot-com bubble, intended to regain investors' confidence in American Capital Markets through setting new rules and regulations on corporations, corporate directors and auditors.

Since its introduction, the act created a large debate among researchers on its consequences and economic implications (Romano 2005, 2009; Zhang 2007; Li, Pincus and Rego 2007; Leuz 2007; Cohen, Dey and Lys 2008). Most of the researchers stress the negative effects of the act: the high implementation costs (Solomon and Bryan-Low, 2004), and the fact that some small firms are going private to avoid compliance costs associated with SOX (Engel, Hayes and Wang 2007).

In this paper, we do not address further economic benefits or costs of the act. Instead, we test the indirect effects of the Sarbanes-Oxley Act on diversified firms, the internal capital markets, and the diversification discount (premium). The Act proposed new rules and regulations on financial practice and reshaped corporate governance to insure alignment of incentives between corporate insiders and investors. The Act requires more timely disclosure on insider transactions, independence of the audit committee, a majority of independent directors on corporate boards, and certification of the financial statements by both the CEO and the CFO. In addition, the act imposes higher penalty on any officer responsible of manipulating or forging documents. We will check whether such changes affecting firms' corporate governance represent a shifting point in the elimination of the diversification discount, or were just a continuation of a previous trend.

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[4] President G.W. Bush at the signing ceremony of SOX: "the most far-reaching reforms of American business practices since the time of Franklin Delano Roosevelt"

2. Hypotheses:

In our paper, we develop two main hypotheses. In the first hypothesis we link the inefficiency in internal capital market to poor corporate governance and especially to misuse of CEO power. As this inefficient allocation of resources lead to value loss (diversification discount); we link the diversification discount directly to poor corporate governance. Our second hypothesis states that the Sarbanes-Oxley Act has a major role in reducing the diversification discount. This reduction is mainly due to the role of the act in enhancing firms' corporate governance and in limiting the destructive behavior of powerful CEOs represented by the misallocation of firms' resources.

2.1 Governance Structure and Internal Capital Market Efficiency

One of the most important business decisions in diversified firms is the allocation of internally generated funds across different segments. Shin and Stulz (1998) argue that internal capital markets are efficient if resources are directed to the most profitable projects in a way that maximize shareholder wealth. However, internal capital markets inefficiency has arisen due to agency problem and rent seeking behavior in diversified firms (Rajan, Servaes, and Zingales 2000; Scharfstein and Stein 2000); Such inefficiency occurs when poor corporate governance structure allows the CEO to intentionally misallocate resources in order to grab some private benefits. Therefore, in firms with better corporate governance the CEO will be less likely to follow such destructive behavior. As a result, diversified firms with better corporate governance allocate their resources more efficiently and make better investment decision.

Berger and Ofek (1995) find a positive correlation between the diversification discount and the inefficient allocation of resources (investment in low Tobin's Q). It seems like the diversification discount represent the market reaction to such inefficiency. Stock performance reflects investors' perception of current firm performance and their expectations about its future variation. As a result, investors punish firms with bad performance by dropping the stocks of these firms from their portfolios. This act will lead to a decrease in the price of these stocks, which will start selling at a discount compared to other firms with better performance.

Therefore, diversified firms suffering from inefficient allocation of resources will drag a negative market reaction and the stocks of such firms will sell at a discount dragging the market value of the firm below its optimal level.

Moreover, many studies link firms' performance to corporate governance; Gompers, Ishii, and Metrick (2003), and Bebchuk, Cohen and Ferrell (2004) show that firms with better corporate governance and stronger stockholder rights have higher firm value. These findings imply that diversified firms' performance will also be affected by corporate governance structure. Such conclusions were also reached by Masulis, Wang, and Xie, (2007), and Sautner, and Villalonga (2010), and Hoechle, Schmid, Walter, and Yermack (2011). As corporate governance is increasing as a result of corporate legislation and recent trend in ownership structure, all firms including diversified firms will increase in value. At the same time, as diversified firms suffer more from poor corporate governance, the improvement in corporate governance should affect diversified firms' value more than that of focused firms. Therefore, the diversification discount should drop as a result of the change in corporate governance.

***Hypothesis 1**: Poor Corporate Governance and high CEO Power lead the way to the inefficient allocation of resources causing therefore the diversification discount.*

2.2 The Role of the Sarbanes-Oxley Act:

Although of the intended benefits of corporate legislation, it is still considered to be a double edge sword as time reveals indirect benefits and costs for such legislation. The Sarbanes-Oxley Act came as a consequence to major corporate scandals and intended to rebuild investors' confidence and to limit the likelihood of corporate misconduct. SOX, quickly received negative feedback with most of economists pointing to its indirect disadvantages including the high implementation costs. Another indirect cost revealed to be management's time consumption, as officers will have to spend more time monitoring to check whether they are complying with the provisions of the act instead of focusing on their own duties; such time consumption will certainly result in a lower performance for the firm. As indirect costs have emerged, indirect benefits have also emerged. Through imposing several provisions on corporate governance, the

Sarbanes-Oxley enhances the firms' corporate governance leading therefore to better investment decisions and to more efficient allocation of firms' resources. As a result, the Act plays an important role in increasing the excess value of the firm and therefore in the reduction of the diversification discount.

Hypothesis 2**: **The Sarbanes-Oxley Act enhances corporate governance and reduces the negative effects of CEO Power on firm value.

3. Data and Variables

3.1 Data and Methodology

In this section we describe the sample used in our paper and the methodology applied to compute the inefficient allocation of resources, and the diversification discount.

The primary sample used in our analysis is for all the firms over the period 1996-2005 on the active and research files of the COMPUSTAT segment database. COMPUSTAT segment files contain data on separate segments whose sales, assets, or profits exceed 10% of consolidated totals[5]. Following Berger and Ofek (1995), we exclude financial firms and all firms which had at least one segment in the financial services industry (SIC 6000-6999). We also exclude firms having at least one segment in utilities (SIC 4900-4999), as well as American Depository Receipts (ADRs). We limit our sample to firms whose total assets are above $20 million to prevent distortions caused by small firms. Finally, firms reporting multiple segments within the same 3-digit code are excluded from the diversified firms sample and added to stand alone firms. These procedures limit our sample to 19,428 observations of multi-segment firms. Then, we match this sample of diversified firms with Compustat industrial files. Firms that do not have complete data on the Compustat industrial files are excluded from the sample. The Compustat

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[5] Until 1997, U.S. publically traded firms were required by the FASB (SFAS 14) to report such information for both business and geographical segments meeting the 10% criteria. Since 1998, the new regulation (SFAS 131) requires firms to use their own segment breakdown in reporting to reflect the way they organize business activities internally for purposes of allocating resources and evaluating performance.

industrial files are also used to get the industry data, which we will use to compute the diversification discount. Finally, we use Execucomp files in order to get the governance variables used in our analysis. Thus, to be included in our sample, firms must have complete data in all three files, Compustat industrial, segment and Execucomp[6]. After merging data from the three data files, our final sample drops to 849 multi-segment firms with 5,385 observations[7]. Table 1 represents the distribution of multi-segment firms in our sample by the number of 3-digit code segments. 43.47% of the firm-years observations are for two-segment firms, 34.61% for 3-segment firms, 12.59% for 4-segment firms and 7.41% are for 5-segment firms. Only 1.91% of the observations are for 6 or more segment firms.

Table 2 represents summary statistics of the diversified firms' sample. The average firm has $6 billion of assets, $7 billion of annual sales, and a total capital of $13 billion. Furthermore, the average number of segments that a firm operates is about 3 at the 3-digit code. The average level of diversification in our sample is relatively low (1.9), with the 95th percentile corresponding to 3.49.

3.2 Variables Description

3.2.1. Measuring firm diversification:

We use 2 variables to measure the level of diversification of multi-segment firms; the number of segments and the diversification level. The number of segments equals the number of 3-digit code segments operated by the multi-segment firm. While, the diversification level equals the inverse of Herfindahl index of segments' asset-weights. This variable ranges from a minimum of one (the lowest level diversification, the case of a completely focused firm) to a maximum of 10 (the maximum level of diversification, firm operating in 10 different segments with 10% asset weight for each).

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[6] We do not require complete data availability for all measures to maximize the sample size.
[7] When we merge Compustat data with Execucomp data, we lose a large number of observations. We also note that large firms are more represented in our final sample as these firms are more represented on the Execucomp data files.

3.2.2. Measuring Corporate Governance:

We use 10 different variables to measure firms' corporate governance. However, our greatest attention is to CEO power and attributes, as the CEO power determines the flexibility of the CEO in taking solely or jointly investment decisions. The effectiveness of these decisions will be later reflected in the stock price affecting therefore the firm value. The variables are divided into 3 subcategories: CEO Power, Board and Audit Characteristics, and Ownership Structure.

A. CEO Power:

Shliver and Vishney (1989) argue that CEOs' incentive to reduce their personal risk motivates them to diversify the firm in multiple lines of business. Such diversification will allow them to have more market power and to take more critical decisions. One of the most important decisions is the allocation of internally generated resources; such decision has a great impact on the firm's performance. Several studies reveal that the variability in firms' performance is directly related to CEO power as the powerful CEO can make extreme decisions (Adams, Almeida and Ferreira (2005). Moreover, Boumosleh (2007) finds that powerful CEOs – those extracting above optimal pay – have greater impact in allocating financial resources of multi-segment firms as they take solely such decisions. He also finds a negative relationship between CEO power and efficient allocation of resources in diversified firms. Consequently, we expect the CEO power variable to negatively affect corporate governance. The Sarbanes-Oxley Act limits extreme behavior of CEOs through exposing them to greater litigation risks, and imposing more rigid penalties on any executive charged with fraudulent act. According to the act, CEOs and CFOs of all public firms are required to certify financial statements reported to the SEC (Section 302). They are also required to repay any incentive-based compensation or profits resulting from the sale of stock received within 12 months of any restatement due to misconduct (Section 304).

For CEO power we use 3 different variables: CEO power, CEO chair, and CEO compensation. CEO power is a dummy variable that reflects the CEO ability to take independent decisions. The CEO is considered powerful if he is the only insider on the board of directors or if he is the president and the chairman of the board at the same time. The variable

is equal to 1 if the CEO is powerful, 0 otherwise. Total CEO Compensation is equal to: Salary + Bonus + Other Annual + Restricted Stock Grants + Long Term Plan Investment Payouts + Value of Option Grants. Finally, the CEO chair is also a dummy variable equal to 1 if the CEO is at the same time the Chairman of the Board, 0 otherwise.

B. Board and Audit Characteristics:

Board of directors plays a vital role in minimizing agency costs arising from the separation of ownership and control (Fama and Jensen 1983). Board role in monitoring firm performance becomes more challenging when the firm grows and operates in multiple segments; members of the board should be familiar with different industries in which the firm operates in order to investigate investment decisions. So, in diversified firms a larger board of directors should monitor better the allocation of internal resources process, and enhance corporate governance. On the other hand, Fama (1980) identify the composition of the board as an important element in creating an effective board monitoring management actions. The presence of outside directors on the board increases the independence of the board, and improves corporate governance. Such independence is also supported by the provisions of the Sarbanes-Oxley Act, where a majority of outside directors is required on corporate boards. Finally, the frequency of the board meetings is an indicator to the board commitments toward good monitoring of the firms' management. Higher meetings frequency is correlated with better supervision and therefore with better governance.

For board characteristics we use 3 different variables: board size, board independence, and board meeting. Board size is equal to the number of directors on the board. Board independence is equal to the proportion of outside directors on the board. Finally, board meeting is equal to the number of board meetings during the year.

The Audit Committee plays an essential role in improving the credibility of firms' disclosure and reducing the information asymmetry between management and stockholders (Healy and Palepu, 2001). The Sarbanes-Oxley Act imposes several restrictions on external and internal auditing as well. Section 404 of the Act requires that management assess internal controls and that auditors' report on the internal control of their clients. Furthermore, the Act

requires independence of the audit committee; the independence of the audit committee is measured by the proportion of outside directors in the committee. The presence of outside directors should improve auditing quality, and enhance corporate governance.

We use a dummy variable to account for the independence of Audit Committee (dummy variable equals one if the Audit Committee is composed entirely of outside directors and zero otherwise)

C. Ownership Structure:

Ownership structure has had radical changes in the recent years with the emergence of institutional investors as the major player in the US stock market. In this study we are only interested in two main aspects of the ownership structure: Insider Ownership and Institutional Ownership.

Fama and Jensen (1983), argue that higher insider ownership increases firm value, as insiders have an incentive to align their investment decisions with preferences of other stockholders. Furthermore, Megginson, Morgan, and Nail (2000), find that firms with lower level of managerial ownership are more likely to be involved in diversifying activities through stock financed mergers. So, greater insiders' ownership will be beneficial for the firm and will enhance its corporate governance. However, as insiders possess access to private information unavailable to the public (allowing them to snatch above average returns on their stock transactions), legislators has imposed several restrictions on their stock transactions. The Sarbanes-Oxley Act imposes further restrictions on such transactions; according to section 306 insiders are required to report stock transactions involving the firm stock within two days of the transaction.

As a proxy for managerial ownership, we use three variables: insider ownership, directors' ownership, and CEO ownership. Insider ownership is equal to the proportion of common equity held by the firm's directors and officers. Directors' ownership is equal to the proportion of common equity held by directors. Finally, CEO ownership is equal to the proportion of common equity held by the CEO.

Table 3 presents summary statistics of corporate governance variables of the multi-segment firms in our sample. The average diversified firm has 8 board members of whom 65% are outside directors, and who meets 7 times per year. Moreover, average director ownership is 7% of total shares outstanding, while the average ownership of CEO and insiders are 3% and 4% respectively. 78% of the diversified firms have an independent audit committee, 62% are directed by a powerful CEO, and 67% have the CEO also chairing the board of directors. Finally, the average salary of the CEO is $5 million.

3.2.3. Measuring the Diversification Discount:

In order to measure the diversification discount or the loss in value due to diversification, we use a similar approach to that used by Berger and Ofek (1995). We use an excess value measure as we compare the diversified firm market value to the sum of imputed market values of its different segments. In order to do this, we calculate the ratio of market value to assets for each industry. Then, we multiply the multiple segments' assets of a diversified firm by the ratio of their corresponding industries. After adding up these computed values we get the imputed market value of the firm. Finally, we subtract the imputed market value of the firm' segments from the market value of the diversified firm and divide the residual over the market value of the diversified firm. Therefore, if the market value of the diversified firm is greater than the market value of its separate segments we will have a positive excess value or a diversification premium. The diversification discount will arise in the opposite case where the value of the diversified firm is less than the aggregate value of its separate segments treated as stand-alone firms. In this case the diversification will lead to value destruction and the excess value of diversification will be negative.

4. Empirical Results

First of all, we analyze the evolution in corporate governance variables after the implementation of the Sarbanes-Oxley act. We divide our sample into two sub-categories: Pre-

SOX (1996-2001) and Post-SOX (2003-2005)[8]. We can notice from table 5 significant changes as a result of the implementation of the act. The act requires independence of both the board of directors and the audit committee. Consequently, we find that the percentage of outside directors on the board of directors increases from 58% to approximately 70%, whereas the percentage of outside directors on the audit committee – already high prior to the act - increases by only 2%. The board size also increases from an average of 6 to 9 members. Moreover, CEOs power and compensation increase after 2002, and an additional 7% of CEOs become chair of the board. However, we find that insiders' ownership as well as CEO and directors' ownership decrease significantly post-SOX. Consequently, we find some preliminary support for Hypothesis 2 in that the Sarbanes-Oxley Act enhances corporate governance.

Although we can notice an increase in CEO power post-SOX, the provisions of the act impose tightening restrictions on the CEO actions preventing to a large extent destructive behavior and misconduct. Consequently, CEO increasing power does not prevent him from being more vulnerable to stiffer penalties and regulations. Therefore, the CEO has now more incentives to align his objectives with those of the firm's stockholders, and most importantly to use his growing power in increasing firm value.

In the next step we use correlation matrix to study the relationship between corporate governance variables and the efficient allocation of resources measured by Tobin's Q. As we have high correlation between some of the independent variables, we repeat the correlation test several times after eliminating one of the variables of the highly correlated pair. Table 6 presents the correlation matrix between the efficient allocation of resources, 3 governance variables (directors ownership, CEO power and board independence), one measure of diversification (number of segments) and one firm characteristic variable (assets of the firm). We find support to our first hypothesis as we can notice a negative relationship between CEO power and the efficient allocation of resources. Moreover, we find a positive relationship between the other governance variables and the efficient allocation of internal resources. Finally, we note that CEO power is inversely related to firm size measured by its total assets.

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[8] We exclude year 2002 because the passage and implementation of the act took place in that same year.

Less CEO power in large firms leads us to conclude that decisions in large firms are mostly taken by a coalition of directors rather than solely by the CEO.

We proceed to test our hypotheses using multivariate analysis, by regressing the efficient allocation of resources and the excess value in tables 7 and 8 respectively. In table 7, we run three different regressions; the first one covers the entire sample period, while the other ones cover Pre-SOX period (1996-2001) and Post-SOX period (2003-2005) respectively. The results in the three regressions show a negative sensitivity of the firm efficient allocation of resources towards CEO power. Therefore, we can conclude that the higher the CEO power, the lower the internal capital market efficiency. This negative relationship is consistent with our first hypothesis. On the other hand, we notice a significant decrease in the sensitivity of the efficient allocation of resources relative to the CEO power post-SOX. The sensitivity decreases from (-0.123) to (-0.068). This decrease supports our second hypothesis stating that the provisions of the Sarbanes-Oxley Act enhance corporate governance and limits the negative effect of CEO power.

Table 8 presents evidence on the relation between corporate governance and the diversification discount. In this table we use regression to test the relationship between corporate governance and the excess value of the firm. We run three different regressions to the excess value of the diversified firms using the same methodology applied in table 7. This time we find a negative relationship between CEO power and the excess value. This indicates that, all else being equal, diversified firms run by a powerful CEO lose value and that the stocks of such firms are more likely to sell at a market discount. This result is consistent with Hypothesis 1 about the positive relationship between poor corporate governance and the diversification discount. Once again we notice a significant decrease in the sensitivity of the excess value of the firm relative to the CEO power post-SOX; the sensitivity decreases from (-0.166) to (-0.014). Although of the increase in CEO power over the sample period, the negative effect of that power decreases significantly. These findings provide further support to our second hypothesis stating that the provisions of the Sarbanes-Oxley Act reduce the diversification discount through limiting the negative effect of CEO power. We can also notice

the positive relationship between the efficient allocation of resources and the excess value of the firm all over the period 1996-2005. Finally, while repeating multiple regressions using different variables we extract positive relationship between most of corporate governance variables and the excess value of the firm.

5. Conclusion

Diversification benefits (costs) seem to change over time. Changes in corporate diversification variables will also mean that new benefits and costs will still emerge, making a corporate diversification decision less or more attractive to firms. In this paper we examine the sensitivity of the diversification discount to corporate governance variables in light of the Sarbanes-Oxley Act. We find that the diversification discount is explained to a large extent by poor corporate governance, especially by CEO power. Powerful CEOs have the ability to take independent investment decisions and are more inclined towards misallocating resources. However, such behavior has been limited by recent legislations, as the Sarbanes-Oxley Act limits the misconduct of CEOs and enhances corporate governance.

Through dividing our sample to two subcategories: pre-SOX and post-SOX, we study the change in sensitivity of the corporate governance variable over the two time periods. Our results indicate that the negative effect of CEO power (the most relevant corporate governance variable in our analysis) on the efficient allocation of resources and on the excess value of the firm have decreased considerably after the passage of SOX. However, the decrease in the negative effect of CEO power is not due to reduction in that power but rather to the set of restrictions imposed by the act on CEOs behavior. Such decrease has significant economical implications; the limitation of the inefficient allocation of resources allows firms to save unwanted costs and to prevent value destruction associated with corporate diversification. However, future research will have to check whether such indirect benefits of the act are offset by its associated costs, especially its implementation cost.

References:

Adams, R., Almeida, H., Ferreira, D., 2005, Powerful CEOs and their impact on corporate performance. *Review of Financial Studies* 18, 1403-1432.

Akbulut, Mehmet E., and John G. Matsusaka, 2010, 50+ Years of Diversification Announcement, *The Financial Review* 45, 231-262.

Ammann, Manuel, Daniel Hoechle, and Markus Schmid, 2011, Is there Really no Conglomerate Discount? Working paper, Swiss Institute of Banking and Finance.

Bhagat, Sanjai, Andrei Shleifer, and Robert Vishny, 1990, Hostile takeovers in the 1980s: The return to corporate specialization, Brookings Paper on Economic Activity: Microeconomics, 1-72.

Bebchuk, L., A. Cohen, and A. Ferrell. 2004. What matters in corporate governance? Working Paper, Harvard Law School.

Berger, Philip G., and Eli Ofek, 1995, Diversification's Effect on Firm Value, *Journal of Financial Economics* 37, 39–65.

Boumosleh, Anwar, 2007, Internal capital markets and CEO power, Journal of Academy of Business and Economics, 1,

Bumiller, Elisabeth "Bush Signs Bill Aimed at Fraud in Corporations". *The New York Times*, July 31, 2002.

Campa, J.M., Kedia, S., 2002. Explaining the diversification discount. *Journal of Finance* 57, 1731–1762.

Cohen, Daniel, A. Dey and T. Lys, 2008, The Sarbanes Oxley Act of 2002: Implications for Compensation Contracts and Managerial Risk-Taking, Working Paper, NYU.

Comment, R., Jarrell, G., 1995. Corporate focus and stock returns. Journal of Financial Economics 37, 67–87.

Denis, David J., Diane K. Denis, and Kevin Yost, 2002, Global Diversification, industrial diversification, and firm value, Journal of Finance 57, 1951-1979.

Engel, Ellen, Rachel M. Hayes, and Xue Wang, 2008, The Sarbanes-Oxley Act and Firms' Going-Private Decisions, *Journal of Accounting and Economics*, forthcoming.

Fama, E. and M. Jensen, 1983, "Agency Problem and Residual Claims," *Journal of Law and Economics 26*, 327-350.

Fauver, Larry, Joel Houston, and Andy Naranjo, 2002, Capital market development, legal systems, and the value of corporate diversification: A cross-country analysis, Working paper, University of Florida.

Giannetti, Mariassunta, and Luc Laeven, 2009, Pension reform, ownership structure, and corporate governance: Evidence from a Natural Experiment, Review of Financial Studies, 22(10), 4091–4127.

Gomes, J. and D. Livdan, 2004, "Optimal Diversification: Reconciling Theory and Evidence", Journal of Finance 59 507 – 535

Gompers, P., J. Ishii, and A. Metrick. 2003. Corporate governance and equity prices. Quarterly Journal of Economics 118 (February): 107-155.

Graham, John R., Michael L. Lemmon, and Jack G. Wolf, 2002, Does corporate diversification destroy value?, The Journal of Finance 57, 695 – 720.

Healy, P., and K. Palepu, 2001. Information Asymmetry, Corporate Disclosure, and the Capital Markets: a Review of the Empirical Disclosure Literature," *Journal of Accounting and Economics 31*, 405–444.

Hoechle, D., Schmid, M., Walter, I., Yermack, D., 2011, How much of the diversification discount can be explained by poor corporate governance? Journal of Financial Economics, forth coming.

Hovakimian, Gayané, 2009, Financial Constraints and Investment Efficiency: Internal Capital Allocation across the Business Cycle, working paper, Fordham University.

Jiraporn, Pornsit & Kim, Young Sang & Davidson, Wallace N. & Singh, Manohar, 2006. Corporate governance, shareholder rights and firm diversification: An empirical analysis, Journal of Banking & Finance, 30, 947-963.

Kuppuswamy, Venkat, and Belén, Villalonga, 2010, Does Diversification Create Value in the Presence of External Financing Constraints? Evidence from the 2008–2009 Financial Crisis. Working Paper, *Harvard Business School*.

Lang, Larry, and Rene Stulz, 1994, Tobin's Q, corporate diversification and firm performance. *Journal of Political Economy* 102, 1248-1280.

Lewellen, Wilbur G., 1971, "A pure financial rationale for the conglomerate merger", *Journal of Finance*, 26, 521-537.

Leuz, C. 2007. Was the Sarbanes-Oxley Act of 2002 really this costly? A Discussion of Evidence from Event Returns and Going-Private Decisions. *Forthcoming, Journal of Accounting and Economics*.

Li, H., M. Pincus, and S. Rego. 2007. Market Reaction to Events Surrounding the Sarbanes-Oxley Act of 2002 and Earnings Management. *Forthcoming, Journal of Law & Economics.*

Liebeskind, Julia P., and Tim C. Opler, 1994, Corporate diversification and agency costs: Evidence from privately held firms, Working paper, Ohio State University.

Lins, Karl and Henri Servaes, 1999. International evidence on the value of corporate diversification, Journal of Finance, 54, 2215-2239.

Majd, S. and Stewart C. Myers, 1987. Tax asymmetries and corporate income tax reform, in Martin Feldstein, Ed., effects of taxation on capital accumulation, University of Chicago Press, Chicago.

Mansi, S.A., Reeb, D.M., 2002. Corporate diversification: What gets discounted? Journal of Finance 57, 2167-2183.

Martin, John D. and Akin Sayrak 2003, "Corporate diversification and shareholder value: a survey of recent literature", Journal of Corporate Finance, 9, 37-57.

Maksimovic, Vojislav and Gordon Phillips 2002, "Do Conglomerate Firms Allocate Resources Inefficiently Across Industries? Theory and Evidence," Journal of Finance 57, 721-767.

Masulis, R.W., Wang, C., Xie, F., 2007. Corporate governance and acquirer returns. Journal of Finance 62, 1851-1889.

Megginson, W.L., Morgan, A., Nail, L., 2000. Changes in Corporate Focus, Ownership Structure, and Long-Run Merger Returns. Unpublished manuscript, Michael Price College of Business, University of Oklahoma

Rajan, R., Servaes, H., Zingales, L., 2000. The cost of diversity: The diversification discount and inefficient investment. *Journal of Finance* 55, 35–80.

Romano, R., 2004. The Sarbanes-Oxley Act and the making of quack corporate governance. Working paper, Yale University, NBER and ECGI.

Romano, R., 2009. Does the Sarbanes-Oxley Act Have a Future? Working paper, Yale University.

Sautner, Zacharias, and Belén Villalonga, 2010. Corporate Governance and Internal Capital Markets. Working paper, *Harvard Business School*.

Scharfstein, D., Stein, J., 2000. The dark side of internal capital markets: Divisional rent seeking and inefficient investment. *Journal of Finance* 55, 2537–2564.

Servaes, Henri, 1996, "The value of Diversification during the Conglomerate Merger Wave", *Journal of Finance*, Vol. LI no.4 1201-1225.

Shin, Hyun-Han, and René Stulz, 1998, Are internal capital markets efficient?, *Quarterly Journal of Economics* 113, 531–553.

Shleifer, A. and R. Vishny, 1989, "Managerial Entrenchment: The Case of Manager-Specific Investments," Journal of Financial Economics 25(1): 123-139.

Shleifer, Andrei, and Robert Vishny, 1991, The takeover wave of the 1980s, Journal of Applied Corporate Finance 4, 49–56.

Solomon, D. and C. Bryan-Low, 2004. Companies complain about cost of corporate-governance rules. *Wall Street Journal*, Feb. 10.

Stein, J., 1997. Internal capital markets and the competition for corporate resources. Journal of Finance 52, 111-133.

Stulz, R.M., 1990. Managerial discretion and optimal financing policies. Journal of Financial Economics 26, 3-27.

Villalonga, Belen, 2004, "Does diversification cause the "diversification discount" *Financial Management* 33, 5-28

Weston, J. Fred, 1970, The Nature and Significance of Conglomerate Firms, *St. John's Law Review* 66.

Whited Toni, 2001, "Is it efficient investment that causes the diversification discount?" *Journal of Finance* 56, 1667-1692.

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

Zhang, I., X. 2007. Economic Consequences of the Sarbanes Oxley Act of 2002. *Forthcoming, Journal of Accounting and Economics.*

Table 1

Diversified firms distribution by number of 3-digit reported segments

Summary statistics for a sample of 5,385 observations of multi-segment firms with total assets of more than $20 million and with no segments in the financial or the utility industry; the number of available observations for diversified firms presents the sample firms with fiscal year 1996-2005 data on Compustat industrial, segment and Execucomp. The sample is divided on the basis of the number of reported segments with different 3 digit codes.

Number of Segments	Number of Observations	Number of Firms	Percentage
2	2341	456	43.47%
3	1864	251	34.61%
4	678	91	12.59%
5	399	41	7.41%
More than 5	103	10	1.91%

Table 2

Firm characteristics: Descriptive Statistics

Summary statistics for the characteristics of the 849 multi-segment firms in our sample; Assets represents the book value of total assets in millions of dollars. *Sales* represents the value of annual sales expressed in millions of dollars. Capital is the market value of equity of a firm expressed by the product of shares outstanding by the closing price at the end of the fiscal year. Diversification Level is the inverse of the Herfindahl index of segments' asset-weights; a higher index value corresponds to a higher level of diversification. Number of Segments is equal to the 3-digit segments operated by the multi-segment firm. If all the segments operated by the firm are within the same 3-digit code, the firm is considered a focused firm. Tobin's Q is the market value of assets divided by the book value of assets. The market value of assets equals the book value of assets plus the market value of equity less the book value of equity.

Variable	Median	Mean	Std. Dev.	5%	95%
Assets (millions)	1608.39	5873.76	15723.52	219.27	23148.00
Sales (millions)	2001.84	7347.49	21023.35	298.24	27479.40
Capital (millions)	2980.25	13321.85	35080.53	408.99	61901.86
Diversification Level	1.77	1.90	0.76	1.06	3.49
Number of Segments	2	2.67	0.90	2	5
Tobin's Q	1.50	1.78	0.96	0.95	3.56

Table 3
Governance variables and definitions

Variable	Description
Board Size	The number of directors on the board
Number of Board Meetings	The number of board meetings during the year
Board Independence	The proportion of outside directors on the board
Audit Independence	Dummy variable equals one if the Audit Committee is composed entirely of outside directors and zero otherwise
Insider Ownership	The proportion of common equity held by the firm's directors and officers
Directors Ownership	The proportion of common equity held by directors
CEO Ownership	The proportion of common equity held by the CEO
CEO Power	Dummy variable equals one if the CEO is powerful and zero otherwise
CEO Compensation	Total Compensation in thousands of USD (Salary + Bonus + Other Annual + Restricted Stock Grants + LTIP Payouts + All Other + Value of Option Grants)
CEO Chair	Dummy variable equals one if the CEO is at same time serving as Chairman of the Board and zero otherwise

Table 4

Corporate Governance characteristics: Descriptive Statistics

Summary statistics of ownership variables of the firms in our sample; Board Size represents the number of directors on the board. Number of Board Meetings refers to the number of board meetings during the fiscal year. Board Independence is measured by the proportion of outside directors on the board of directors. Audit Independence is a dummy variable equals one if the Audit Committee is composed entirely of outside directors and zero otherwise. Insider Ownership is equal to the proportion of common equity held by the firm's directors and officers. Directors Ownership is equal to the proportion of common equity held by the firm's directors. CEO Ownership is equal to the proportion of common equity held by the firm's CEO. CEO Power is a measure of the CEO ability to take independent decisions within the firm; it is equal to a dummy variable which takes a value of one if the CEO is powerful and zero otherwise. CEO Compensation corresponds to the total Compensation in thousands of dollars (Salary + Bonus + Other Annual + Restricted Stock Grants + LTIP Payouts + All Other + Value of Option Grants) paid to the CEO during the fiscal year. Finally, CEO Chair is a dummy variable equals to one if the CEO is at the same time serving as the Chairman of the Board of Directors and zero otherwise.

Governance Variables	Median	Mean	Std. Dev.	5%	95%
Board Size	8	8.11	2.87	0	13
Number of Board Meetings	7	7.16	2.60	4	12
Board Independence	0.67	0.65	0.20	3	0.9
Audit Independence	1	0.78	0.43	0.29	1
Insider Ownership	0.01	0.04	0.09	0	0.21
Directors Ownership	0.01	0.07	0.16	0	0.31
CEO Ownership	0.04	0.03	0.09	0	0.13
CEO Power	1	0.62	0.48	0	1
CEO Compensation(000)	2951.47	5448.06	8412.58	504.95	17873.05
CEO Chair	1	0.67	0.47	0	1

Table 5
Change in Corporate Governance Variables

Evolution of the corporate governance variables over the period 1996-2005; the period is divided into two subcategories: Pre-SOX and Post-SOX. *Pre-SOX* refers to the period preceding the act (1996-2001). Post-SOX refers to the period subsequent to the act (2003-2005). Year 2002 is excluded from the sample because the passage and implementation of the act took place in that same year. *Board Size* represents the number of directors on the board. *Number of Board Meetings* refers to the number of board meetings during the fiscal year. *Board Independence* is measured by the proportion of outside directors on the board of directors. *Audit Independence* is a dummy variable equals one if the Audit Committee is composed entirely of outside directors and zero otherwise. *Insider Ownership* is equal to the proportion of common equity held by the firm's directors and officers. *Directors Ownership* is equal to the proportion of common equity held by the firm's directors. CEO Ownership is equal to the proportion of common equity held by the firm's CEO. *CEO Power* is a measure of the CEO ability to take independent decisions within the firm; it is equal to a dummy variable which takes a value of one if the CEO is powerful and zero otherwise. *CEO Compensation* corresponds to the total Compensation in thousands of dollars (Salary + Bonus + Other Annual + Restricted Stock Grants + LTIP Payouts + All Other + Value of Option Grants) paid to the CEO during the fiscal year. CEO Chair is a dummy variable equals to one if the CEO is at the same time serving as the Chairman of the Board of Directors and zero otherwise.

Governance Variables	Pre-SOX		Post-SOX		Difference	
	Median	Mean	Median	Mean	Median	Mean
Board Size	7	6.451	9	9.151	2.000	2.700[a]
Number of Board Meetings	7	7.269	7	7.401	0.000	0.132[b]
Board Independence	0.620	0.583	0.714	0.697	0.094	0.114[a]
Insider Ownership	0.006	0.041	0	0.018	-0.006	-0.023[a]
Directors Ownership	0.013	0.063	0	0.030	-0.013	-0.033[a]
CEO Ownership	0.003	0.028	0	0.012	-0.003	-0.016[a]
Audit Independence	1	0.802	1	0.824	0.000	0.022[a]
CEO Power	1	0.548	1	0.636	0.000	0.088[a]
CEO Compensation(000)	2044	4534	2942	5123	898	589[a]
CEO Chair	1	0.577	1	0.643	0.000	0.066[a]

a: 5% significance level
b:10% significance level

Table 6
Correlation Matrix

Pearson correlation matrix between the efficient allocation of resources, one firm characteristic variable (assets of the firm), one measure of diversification (number of segments) and 3 governance variables (directors' ownership, CEO power and board independence); Assets represents the book value of total assets in millions of dollars. Number of Segments is equal to the 3-digit segments operated by the multi-segment firm. Directors Ownership is equal to the proportion of common equity held by the firm's directors. *CEO Power* is a measure of the CEO ability to take independent decisions within the firm; it is equal to a dummy variable which takes a value of one if the CEO is powerful and zero otherwise. *Board Independence* is measured by the proportion of outside directors on the board of directors.

	Assets	Tobin's Q	Number of Segments	Directors Ownership	CEO Power	Board Independence
Assets	1					
Tobin's Q	0.06	1				
Number of Segments	0.11	-0.01	1			
Directors Ownership	-0.04	0.02	-0.03	1		
CEO Power	-0.12	-0.07	-0.02	-0.07	1	
Board Independence	0.08	0.04	0.08	-0.25	0.16	1

Table 7
Effect of CEO power on the Efficient Allocation of Resources

Three regression tables covering the entire sample, the Pre-SOX and the Post-SOX period; the entire sample period covers the years 1996-2005. The Pre-SOX period refers to the period preceding the act (1996-2001). The Post-SOX period refers to the period subsequent to the act (2003-2005). Year 2002 is excluded from the sample because the passage and implementation of the act took place in that same year. The dependant variable in these regressions is the efficient allocation of resources; independent variables include Log of Assets, CEO Power, Audit Independence, and Number of Segments. Log of Assets is the natural log of the book value of total assets. CEO Power is a measure of the CEO ability to take independent decisions within the firm; it is equal to a dummy variable which takes a value of one if the CEO is powerful and zero otherwise. Audit Independence is a dummy variable equals one if the Audit Committee is composed entirely of outside directors and zero otherwise. Number of Segments is equal to the 3-digit segments operated by the multi-segment firm.

N	Total Sample	Pre-SOX	Post-SOX
Log (Assets)	0.065	0.094	0.011
	4.94	4.76	0.58
CEO Power	-0.117	-0.123	-0.068
	-3.07	-2.21	-1.21
Audit Independence	-0.057	-0.121	0.84
	-1.28	9.78	1.19
Number of Segments	-0.047	-0.053	-0.049
	-2.22	-1.65	-1.69
N	2769	1611	851
R2	0.01	0.02	0.01

Table 8
Effect of CEO power on the Excess Value

Three regression tables covering the entire sample, the Pre-SOX and the Post-SOX period; the entire sample period covers the years 1996-2005. The Pre-SOX period refers to the period preceding the act (1996-2001). The Post-SOX period refers to the period subsequent to the act (2003-2005). Year 2002 is excluded from the sample because the passage and implementation of the act took place in that same year. The dependant variable in these regressions is the excess value; independent variables include Log of Assets, CEO Power, Tobin's Q, and Board Independence. *Log of Assets* is the natural log of the book value of total assets. *CEO Power* is a measure of the CEO ability to take independent decisions within the firm; it is equal to a dummy variable which takes a value of one if the CEO is powerful and zero otherwise. *Tobin's Q* is the market value of assets divided by the book value of assets. The market value of assets equals the book value of assets plus the market value of equity less the book value of equity. *Board Independence* is measured by the proportion of outside directors on the board of directors.

N	Total Sample	Pre-SOX	Post-SOX
Log (Assets)	-0.003	-0.017	0.014
	-0.38	-1.33	1.27
CEO Power	-0.112	-0.166	-0.014
	-4.43	-4.61	-0.38
Tobin's Q	0.174	0.157	0.237
	13.95	9.78	11.38
Board Independence	0.246	0.15	0.013
	4.06	1.9	0.11
N	2769	1611	851
R2	0.07	0.07	0.13