

Critical Inquiry

**An Exploratory social network analysis of 2010 Fortune 500 companies: The impact of interlocking directorships on companies’ performance**

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2010

**2010**

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**Abstract**

This paper adopts the approach of the social network analysis to investigate the factors which impact the Fortune 500 companies’ financial performance. In particular, this research studied the interlocks amongst the companies and its power deriving from the companies’ centrality as determinants of the companies’ performance. Empirical results showed that there is a positive impact of company interlocks on profitability, but there is no impact of the companies’ power due to its centrality on its profitability. We argued that the positive impact of company interlocks on profitability can be explained by the resource dependence theory. Our literature review yielded no prior research on the impact of power of influence on companies’ profitability; and in this paper, we showed empirically that this relationship was inconsequential.

**Keywords**

Boards of directors, Fortune 500, interlocking directorships, networks, profitability, power, resource dependence theory, social network analysis

1. **Introduction**

Board of directors is considered as shareholders’ representatives who are responsible for protecting their interests by monitoring situations and advising the top management (Schonlau & Singh, 2009). The board of directors has the ability to influence important decisions and previous studies have discussed how board size, board independence, directors’ ages, and busy directors have affected firm performance (Fich & Shivdasani, 2006; Hermalin & Weisbach, 2003) The directors are also viewed as the strategic resources readily available to companies (Smith, 2009).

Directors can hold several directorships in different companies, and such a director therefore constitutes a link between the companies he serves. A directorship interlock, in its simplest form, occurs when the director of one company sits on the board of directors of other companies (Tan & Lee, 2006). If a director of one company is also a director of one or more other companies, then these companies are interlocked by this director’s connection, even though there may be no formal relationship between the companies. As such, there has been much research on interlocks ranging from network of interlocked companies to influence on companies strategy and performance (Non & Franses, 2007).

Fortune 500 is a list compiled by Fortune magazine ranking the top 500 closely held and public corporations of the US as measured by their gross revenue. There are also similar lists such as the Forbes Top 500 Private Companies, Fortune Global 500, and Financial Times 500. Each list takes into account the different ranking criteria, but Fortune 500 is deemed to be the most prestigious (USPages, 2010). In today's business world the corporations that make up the Fortune 500 wield enormous power and influence government policy on a regular basis, as is evidenced by the appointment of Henry M Paulson, CEO of Goldman Sachs, being the Treasury Secretary for the United States. After the 2008 financial crisis, the financial situation is still undergoing recovery, and slowly building up confidence in the consumers. For 2009, the Fortune 500 lifted earnings 335%, to $391 billion, which was a $301 billion jump and is also the second largest increase in the Fortune 500’s 56-year history, approaching the increase in the robust recovery of 2003. For 2009, the Fortune 500 companies raised their return on sales from less than 1% to 4%, and that was close to the Fortune 500's 4.7% historical average (Tully, 2010).

Independent of any debate about the purpose and purview of the company, to understand the determinants of a company’s financial performance is a central interest for all research that are focused on the business (Daniels & Patrick, 2001). There have been much numerous researches done in an attempt to explain a company’s financial performance, but what we have found lacking is the use of company interlocks as a function of interlocking directorships, applied in the context of Fortune 500 companies in order to establish a possible relation with a company’s financial performance. According to (Schonlau & Singh, 2009), board networks facilitate the flow of information within and between companies and hence directorship interlocks may increase profitability. Moreover, interlocks may be due to the presence of high quality directors on the board and the qualities of these directors may contribute to a higher profitability (Rommens, Cuyvers, & Deloof, 2007). On the other hand, it could also be argued that directors can be quite busy with work (Ferris, Jagannathan, & Pritchard, 2003); a director sitting on multiple boards would potentially be a non-effective monitor as there would be time constraints on his schedule (Schonlau & Singh, 2009). Thus, we are interested to study the impact of these interlocks on the Fortune 500 Companies.

Studies of the centrality of individuals or organizations in social networks are a way to identify visible, important actors in systems of social relations. Linton Freeman introduced the 3 centrality measures which are degree, closeness and betweeness centrality (Freeman, 1978); Philip Bonacich proposed a modification of the degree centrality approach that has been widely accepted as superior to the original centrality measures (Bonacich, 1987) as it deems those companies which were connected to highly networked ones possess more power. Hence in our paper, we seek to study the impact of this power on the companies’ profitability.

This research attempts to employ the use of social network analysis to analyze the relationship between interlocking directorships and companies’ power among the listed companies on Fortune 500 and their financial performance. A company’s performance is one of the common themes in strategy research and financial measurements have been used extensively in measuring performance (Maltz, Shenhar, & Reilly, 2003). Gupta and Govindarajan, Stimpert and Duhaime, Zahra and Ketchen, Thomas and Snow (Gupta & Govindarajan, 1984; Ketchen, Thomas, & Snow, 1993; Stimpert & Duhaime, 1997; Stuart & Yim, 2010; Zahra, 1996) used measurements of profits in their researches to analyze a company’s financial performance, also, it has been documented that the profits of US$610 billion, jointly earned by the 2005 Fortune 500 corporations, was equivalent to the entire annual economic output of the emerging economies of Brazil, India or South Korea (USPages, 2010) hence as a function of financial performance, we proposed to explain the relation established above using the profits of a company, controlling for age of the companies, the sector of the companies and the size of the company. A company’s financial performance is a function of innumerable variables and while we recognized that a company’s financial aspect as being multivariate and multi-dimensional, the aim of this research, being an exploratory one, represents a companies’ financial performance using its profitability. In the interest of this research, traditional financial indicators like stock returns and equity ratios (Stuart & Yim, 2010) were not used as these indicators were not considered for entry into the Fortune 500 list.

1. **Literature Review**

There have been many empirical studies done in the field of interlocking directorships and there are considerable amount of literature available. Research on interlocking directorships has gained increasing prominence within the field of organizations, but it has come under increasing criticism as well.

* 1. **Interlocking directorships**

A director interlock exists when a director simultaneously sits on the board of 2 or more different companies. A link between two companies is said to exist when an individual sits on the boards of both companies (Mizruchi, 1996). If a director of one company is also a director of one or more companies, then these companies are said to be interlocked by virtue of this director’s connection, even though there is no formal or actual relationship between them (Smith, 2009). The number of linkages is always counted, so the focus is on dyadic relationships. If a second individual also sits on the boards of the two organizations, a second link exists. This type of network is commonly referred to as an affiliation network (Wasserman & Faust, 1994).

Interlocking directorships are generally seen as beneficial to organizations. They are a central case of interpersonal linkage between companies at board level (Heracleous & Murray, 2001). These directors at their position and with the potential to influence organizational strategy, they carry the responsibility to achieve the organization’s goals.

However, interlocking directorships have also been seen to have adverse implications. Firstly, the high level power relationships of interlocking directorships can be exploited among the organizations (Roy, Fox, & Hamilton, 1994). According to (Carroll, Stening, & Stening, 1990), interlocking directors have been referred to as sinister due to their association with anti-competitive and illegal behavior. Furthermore, the US Congress considered that interlocking directors could be abused by unethical business as a means to facilitate and restrict competition in markets and in 1914, the Clayton Anti-Trust Act was passed to prohibit interlocks between companies deemed to be operating in the same markets (Mizruchi, 1996).

* + 1. **Regulations on Interlocking Directorships**

The Clayton Antitrust Act was passed by the U.S. Congress as an amendment to clarify and supplement the Sherman Antitrust Act of 1890. The Sherman Act seeks to limit and minimize monopolistic behavior amongst companies, in particular that of competing companies. The Clayton Antitrust Act was then introduced to supplement the Sherman Antitrust Act, as it prohibited exclusive sales contracts, local price cutting to freeze out competitors, rebates, and interlocking directorates in corporations capitalized at US$1million or more in the same field of business and inter-corporate stock holdings (The Columbia Encyclopedia, 2008).

Although the United States has antitrust laws in place so as to prohibit interlocking directorships amongst companies, interlocking directorships were still prevalent for a few reasons.

Firstly, antitrust laws from the Clayton Antitrust Act do not prohibit interlocks between companies of different sectors. Thus, directors are able to sit on boards of different companies according to their interest.

Secondly, the violation of the Clayton Antitrust Act in specific sections does not carry a punishable penalty under the law. If a director is found guilty of violations of the Clayton Act, the Act, which is animated by the Supreme Courts of the United States, will then issue the director a notification, of which the violation will be dissolved once the director concerned voluntarily steps down from the board(s).

Thirdly, the needs and benefits of a free marketplace, of which the United States advocates and thrives on, come in competition with the antitrust laws, which possibly explains why the Clayton Act under certain sections does not carry with it a penalty (Schoorman, Bazerman, & Atkin, 1981).

In the interest of this research paper, we have assumed that there exist no violations of the Clayton AntiTrust Act amongst the 2010 Fortune 500 Companies.

* 1. **Theories of interlocking directorates and profitability**

The empirical research on the effects of interlocks on companies’ performance has been quite a mixture (Marielle & Philip, 2007). The studies of relationships between interlocks and profitability have yielded a spectrum of conclusions (Phillip, Soo, & Siang, 2003). In our review, four main opposing views on the effect of interlocking directorships on a company’s performance were distilled, namely, the number of director interlocks were either positively, negatively or unrelated to the company’s profitability. In addition to the above three views, empirical studies has also found a curvilinear relation between director interlocks and profitability. We will be discussing, in the following section, the views founded on the basis of empirical works and researches performed by various authors.

* + 1. **Interlocking directorships have a negative impact on company’s profitability**

The theory of class integration is defined as the mutual protection of the interests of a social class by its members (Koeing & Gogel, 1981) (Phillip, et al., 2003). The class integration theorists advocate the view that director interlocks occur in order to protect the interests of members of a social class, and hence have negative impact on a company’s financial performance (Nguyen-Dang, 2007) (Devos, Prevost, & Puthenpurackal, 2009). The upper class cohesion theory (Useem, 1979) holds that members of a closely-knitted group performed worse in decision making as they strive for a common outcome, suffering from a reduction in independent critical thinking (Mullen et al, 1994) and this lack of diversity amongst members of the group has been shown to limit a company’s performance (Carter et al., 2003). Also, the busyness hypothesis coined by (Ferris, et al., 2003) states that multiple directorships placed an excessive burden on directors, resulting in diminishing company performance (Fich & Shivdasani, 2006).

* + 1. **Interlocking directorships have a positive impact on company’s profitability**

In contrast, as described earlier, the resource dependency theory holds that interlocks exist to coordinate the inter-organizational exchange of resources such as capital, information, and market access to buffer the effects of environmental uncertainty (J. Pfeffer & G. Salancik, 1978). This leads to a reduction of a company’s uncertainty and results in director interlocks having a positive effect on company performance. This view is confirmed by (Schoorman, et al., 1981) whose work document that the reduction of uncertainty through interlocking is a profit maximizing strategy for companies (Schoorman, et al., 1981). Also, (G. Davis, 1991) sheds light on interlocking directorships as providing a platform for companies to share information on business practices and in so doing, impact the companies’ performance positively.

* + 1. **Interlocking directorships have no impact on company’s profitability**

The management control theory sees interlocking directorships as a form of managerial control and this theory states that the existence of directors on boards were so that the higher management can exercise control over them (Hagan & Green, 2002). Under this view, interlocks were deemed to be a passive force, one which is unable to influence companies’ performance of which part of the measure accesses profitability. In the works of (Penning, 1980), the association between a company’s interlocks and its profitability were found to be negligible. Also, in the works of Da Silva Rosa et al, their empirical research failed to show any significant association between interlocks and company financial performance measures (Rosa, Etheridge, & Izan, 2008).

* + 1. **Interlocking directorships have a curvilinear relation with company’s profitability**

In the research of (Bunting, 1976), he found that there is a curvilinear relationship between interlocking directorships and companies’ profitability. Profitability increases with increasing interlocks up to an optimum point, after which profitability begins to decline with increasing interlocks. (Richardson, 1987) confirms this view when his works found bankers joining a board whenever a company is in financial turmoil; where profits are at a minimum that interlocks occurred. Also, (Mizruchi, 1996) suggested that interlocks occur amongst boards of well-performing companies (Meeusen & Cuyvers, 1985) and decline when monitoring of company’s performance found it to be in financial difficulty (Richardson, 1987).

* 1. **Centrality and Power of influence**

There have been a number of studies that have employed interlocking board memberships among cooperation as indicators of control (Fennema & Schijf, 1979; Penning, 1980; Useem, 1979). However, several theorists argued that interlocking involves “cooptation” of other interests rather than submission to them (Allen, 1974; J. Pfeffer & G. Salancik, 1978; Thompson & McEwen, 1958). Hence, as boards of directors are often represented by a plurality of interests, thus, a more accurate description of interlocking would be it permits influence rather than control (Mizruchi & Bunting, 1981).

Studies of the centrality of individuals or organizations in social networks are a way to identify visible, important actors in systems of social relations (Aguilera, 1998). In (Freeman, 1978)’s influential paper, he introduced three distinct measure of centrality – Degree, Closeness and Betweeness whilst (Bonacich, 1987) introduced the eigenvector centrality as a modification of the degree centrality approach. In the context of this paper, centrality measures thus help to quantify the connectedness of the director on the network of all directors. Prior research had shown that central positions within social networks usually have better access to information flowing in the network (Schonlau & Singh, 2009). In contrast to the internal connections within the organization, it may only show how the directors are connected to the others, centrality measures will then help to characterize the overall embeddedness of the director in the network of directors.

Linton Freeman introduced the three centrality measures which are degree, closeness and betweeness centrality (Freeman, 1978). Firstly, degree centrality is the simplest measure of centrality. According to (Milakovic, Alfarano, & Lux, 2008), directors who are highly connected as compared to their peers are in an advantageous position if they are able to influence many of their peers, or if they have better access to resources through their many links. However, degree centrality only takes immediate ties of directors into account and it lacks information about the distance to directors that are not immediate neighbors (Milakovic, et al., 2008).

Secondly, closeness centrality is the extent to which a person lies at short distances to many other people in the network (Liebowitz, 2007). Individuals are highly central with respect to closeness tend to receive more information than others (Cross & Parker, 2004). Thus, with being more resourceful, the companies will benefit from the closeness of these directors.

Thirdly, betweeness centrality measures how important an individual or company is in connecting other individuals or company to each, it is also interpreted as how well-situated a particular company is in terms of the network paths that it lies on (Lacker, So, & Wang, 2010). Thus, betweeness centrality measures emphasizes on the network path of the companies. However, to infer from Freeman’s centrality measures, it argues that directors who have more connections are more likely to be powerful as they can directly affect more other directors; but having the same degree does not necessarily make the directors equally important (Hanneman & Riddle).

Philip Bonacich proposed a modification of the degree centrality approach that has been widely accepted as superior to the original centrality measures (Bonacich, 1987). Bonacich argued that one’s centrality is a function of how many function of how many connections one has and how many the connections the actors in the neighborhood had (Hanneman & Riddle). Therefore, this measure assigns scores of relative importance to directors in the network and it is based on the principle that connections to directors with high scores contribute more to a director’s score than equal connections to peers with low scores. (Milakovic, et al., 2008) highlighted that the idea behind eigenvector centrality is that the quality of links is important, as directors who are connected to many influential peers can be expected to be important themselves. Thus, the Bonacich’s centrality measure best reflect our theoretical arguments which weight the company’s centrality by the centrality of its interlock directorships and give the company a higher prominence score if its connected ties are more central in the network.

We establish here that the number of interlocks differ from power measurements in two ways:

1. Interlock is a measure of the absolute count of directors which sits on each others’ boards; a high count of an absolute magnitude amongst companies does not constitute a high power and vice versa.
2. One’s power is a function of how many connections one has and how many the connections the actors in the neighborhood had and hence power takes into account the relationship of the focal board and its neighbors whilst interlocks merely quantifies the relationship between two companies at any one time.

In reviewing of prior published research papers and journals, we did not find any of which studies the impact of companies’ power of influence on its profitability, hence leading us to our research questions and objectives.

1. **Research Questions and Objectives**

We proposed to use the profits of the companies as the basis of our research as explained earlier. The basis of a company being considered for admittance into the list of Fortune 500 was that of the company’s gross revenue (USPages, 2010). Revenues, also defined as sales of the company ("InvestorWords.com," 2010), will be used as a control variable. There is a list of control variables which will be discussed in the following section.

Interlocks occur between companies but individuals create these interlocks (Phillip, et al., 2003). Hence, in our study of companies’ interlocks, we quantified the number of directorships on basis of directors who are simultaneously seated in two focal boards. Thus, we are examining the company interlocks as a function of interlocking directorships.

In light of the opposing viewpoints of the association between interlocks and companies’s profitability set forth by different theorists and the lack of prior works done on the Fortune 500 list (i.e. Year 2010) together with the lack of research done on power and profitability, we established the following two aims of our paper, through the two research questions.

**Research Question 1 (RQ1): *Does the number of director interlock impact the company’s profitability (i.e. positively, negatively, in a curvilinear way or inconsequential)?***

**Research Question 2 (RQ2): *Does the power of the company have an impact on its profitability?***

To address the above 2 research questions, we turn our attention to the next section of the paper: Methodology.

1. **Methodology**
   1. **Social Network Analysis**

Social networks in organizations are dynamic and conditioned by strategy, infrastructure and the work that is being done at a given time. And very often, the behavior of management and organizational infrastructure unintentionally and invisibly fragment networks.

In the paper by (Oinas-Kukkonen, Lyytinen, & Yoo, 2010), they highlighted the Granovetter’s network embeddedness theory that economic behaviors of individuals are socially embedded and that economic actors are affected by their networks with other social actors. (Mizruchi, 1996) extends this theory to the company level and suggested that a company’s performance may be affected by its relation with other companies in light of the network embeddedness theory. Hence, we employ the use of a company’s social network as the basis of our research and we wish to study the association this network has with the company’s profitability. In this paper, a company’s social network with another company is represented by the number of interlocking directorships amongst the Fortune 500 companies.

* 1. **Key Variables**

In its most basic form, an interlocking directorate occurs when a person from one organization sits on the board of directors of another company (Mizruchi, 1996). In the interest of this study, an interlock occurs when directors of two companies simultaneously sits on each others’ board (Phillip, et al., 2003). The corresponding companies’ profits and revenues were collected from the official CNN website ("Fortune 500," 2010).

There are three key variables that are used to address our research interest, namely, the number of interlocking directorships for each company, the power of influence measured and the company’s profits, which represents the companies’ performance as mentioned earlier.

* 1. **Control Variables**

To adequately address potential confounds to our analysis of interlocking directorships, power and company’s profitability, control variables were used (Phillip, et al., 2003). Firstly, the size of a company is used as a control variable. It has been found that the number of interlocks is proportional to the size of the company. Due to their greater economic power and importance in the economy, larger companies, in general, tend to have more interlocks (Dooley, 1969) and this has to be controlled. Size of the company was then measured by the revenue of the company.

Secondly, the age of the company was also controlled because older companies, having a higher likelihood of being more established within the economy tend to establish ties with companies with whom they have business transactions with (Phillip, et al., 2003). Because not all companies have a board of directors at point of founding, the age of the company was calculated from the year of public listing to year 2009 to better reflect the number of years of the existence of the board.

Thirdly, the sectors from which the companies are categorized were also controlled. Financial and non-financial companies have been found to bear differences in terms of the number of director interlocks and a company’s performance (Marielle and Philip, 2007). Hence, in an attempt to negate the effects of the different sector on the companies’ performance, sectors were also being controlled. Classification of the Fortune 500 list of companies was based on the Standard and Poor’s grouping. The classification of the sectors was based on the Global Industry Classification Standard (GICS®) and hence was used as the basis of this paper’s classification of sectors. There are 10 industry types, namely (1) Consumer Discretionary, (2) Consumer staples, (3) Energy, (4) Financials, (5) Healthcare, (6) Information technology, (7) Industrials, (8) Materials, (9) Telecommunications, and (10) Utilities (Poor's, 2010).

* 1. **Data Collection and Data Preparation**

The data involving the 2010 Fortune 500 companies was collected by downloading the names of the companies from the official CNN website. The names of the directors of each company as well as the year the companies listed, were collected from their respective official websites, stock exchanges website or from reputable e-resources from academic libraries. The industries of each company were also collected from the official CNN website before translation into the Standard and Poor’s (S&P) grouping of 10 sectors.

The data collected had to be cleaned and prepared before analysis can be performed. Firstly, suspected names which may belong to the same person are picked up using the SPSS Text Analysis Software (version 3.0)[[1]](#footnote-2) with linguistic and dictionary embedded. Names with shorthand were replaced with the longer version seen in the data (i.e. Stone Sharon W. will be replaced with Stone Sharon Walker). This is done on the basis that the likelihood of two or more people having the same first name and same letter of middle and/or last name who has attained similar corporate status within the criteria of the Fortune 500 Companies are assumed to be impossible. Secondly, directors with and without titles and salutations, although referring to the same person, were treated as unique entities. Hence titles and salutations like “Dr”, “Mr”, “Ms”, “Lord”, “(Rear) Admiral”, “Sir”, “Professor (Prof)” and “Col” were removed. Thirdly, tabs, spaces and punctuations in between names were stripped as same names with different number of spaces, tabs and punctuations in between characters will be deemed to be unique entries. After cleansing of the data, a total unique directors stands at 4,368.

The data was set up in .txt format using the notepad program. The data was loaded into UCINET[[2]](#footnote-3), a social network analysis tool, which is a comprehensive program that allows data to be imputed using a spreadsheet (Tan & Lee, 2006). A case-by-affiliation matrix was generated and saved into a UCINET format file (i.e. ##d extension). From this incidence matrix, the company-by-company adjacency matrix was generated. Diagonal entries of the company-by-company matrix contained information of the number of directors sitting on the respective board, which is not in our research of interest. Hence, the diagonal entries of the company-by-company matrix were set to a value of zero. Following that, the rows were summed up to represent the number of director interlocks per company. The data was then exported to the Microsoft Excel Program and matched, using names of the company as the unique identifier, with its corresponding year the company is publicly listed, the sector of the company, company profits and revenue for year 2010.

The Bonacich’s scores were also computed from UCINET as a measurement of the companies’ power. These scores, too, were merged using names of the company as the unique identifier to obtain the final dataset in the Microsoft Excel format (.xls).

The final dateset was read into the Statistical Package for Social Science (SPSS) software (version 18.0) for data exploration and analysis.

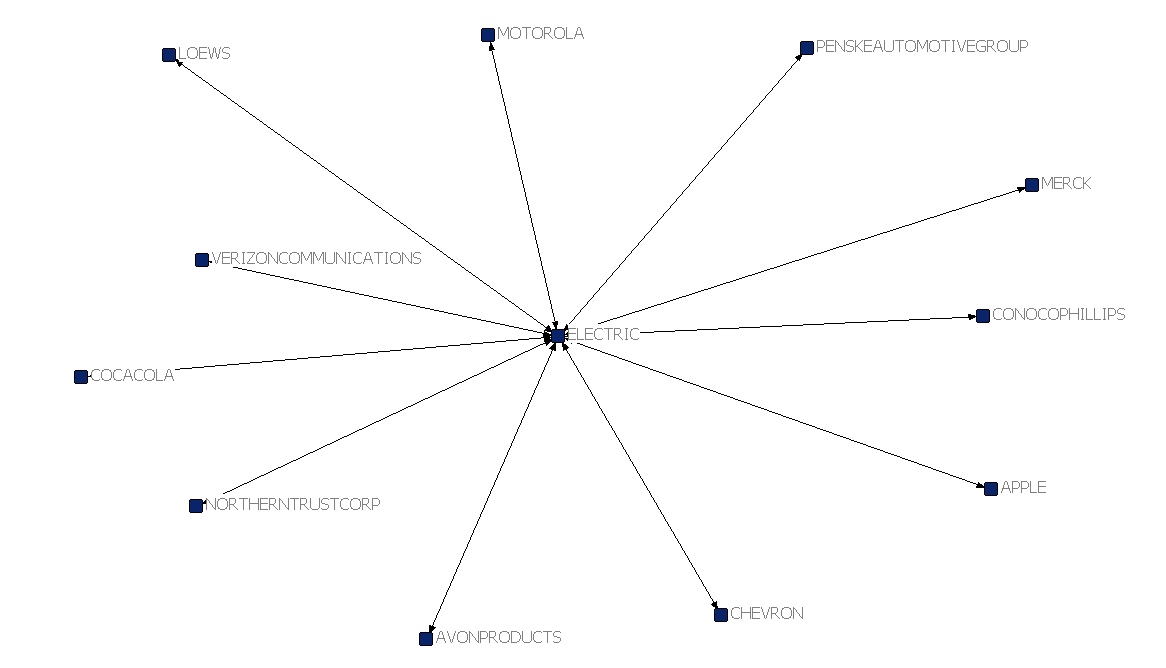
A social network diagram was first graphed using NetDraw involving the 500 companies as in the Appendix Figure 1.

The distribution of the variables (Number of director interlocks, companies’ profits, companies’ revenues, the age of the companies and the Bonacich’s Power) were studied using descriptive statistics such as the mean, maximum, minimum and standard deviation with results in Table 1.

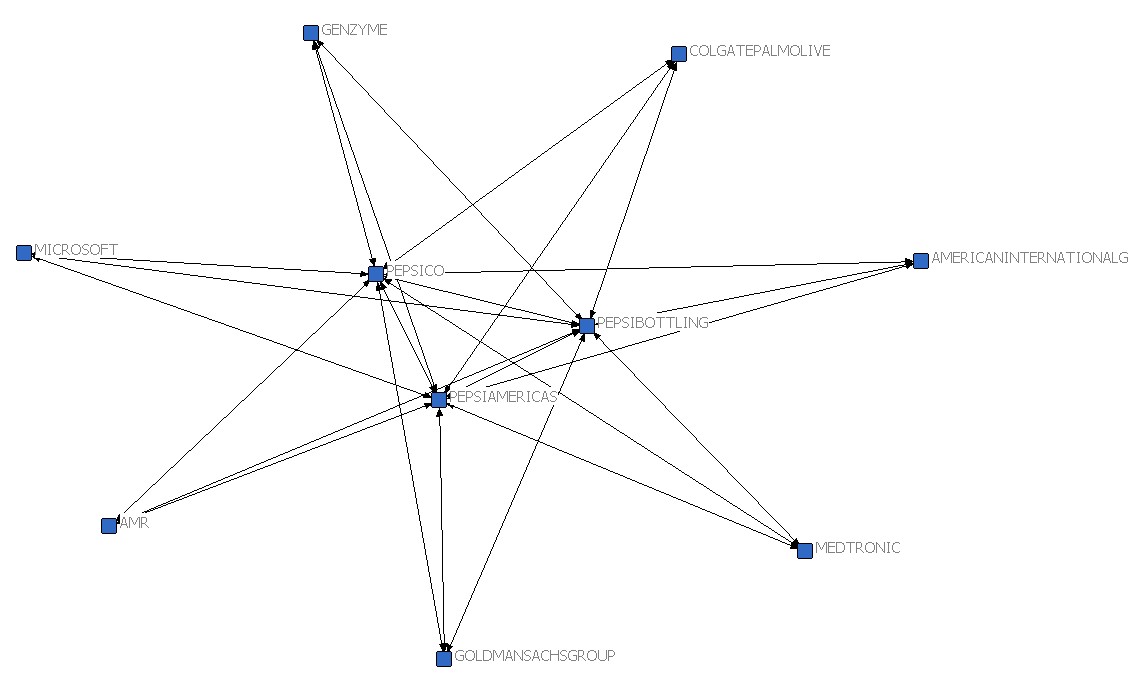
|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **N** | **Minimum** | **Maximum** | **Mean** | **Std. Deviation** |
| **Age Of Company Since Listed** | **500** | **0** | **128** | **27.66** | **22.950** |
| **Bonacich’s Power** | **500** | **0.00** | **117.29** | **15.4769** | **16.15510** |
| **Interlocks** | **500** | **0** | **162** | **5.30** | **9.269** |
| **Profits** | **500** | **-71969** | **19280** | **785.63** | **4335.910** |
| **Revenue** | **500** | **4162** | **408214** | **19526.96** | **32038.340** |
| **Valid N (listwise)** | **500** |  | | | |

**Table 1: Descriptive Statistics**

From Table 1, we can see that the highest number of director interlocks was 162, belonging to General Electric. Also, we can see that the next highest number of director interlocks was 63 and a closer investigation of the data yields the result that the top three companies involved in the interlocks belonged to the same parent company of “Pepsi (Pepsi Bottling with 63 interlocks, Pepsi Co. with 57 interlocks, Pepsi America with 56 interlocks). Since directors of each companies concurrently sits on each others’ board, the high number is justifiable and is not deemed to be an out-of-range value. The next highest value of interlocks was 38 by AMR Airlines, followed by International Business Machines (IBM) with 20 interlocks. A social network was graphed for General Electric in Figure 1a. and for Pepsi as shown in Figure 1b.



**Figure 1a: Social Network Diagram for General Electric using NetDraw**



**Figure 1b: Social Network Diagram for Pepsi using NetDraw**

The age of some companies was zero as of year 2009 as these companies were publicly listed only in Year 2009 and hence a value of zero was also a valid figure and not dropped from the analysis. The mean age of companies since listing year was 27.66 years old and a standard deviation of 22.95 years. The oldest company in terms of date publicly listed was Altria, a Tobacco company which is 128 years old.

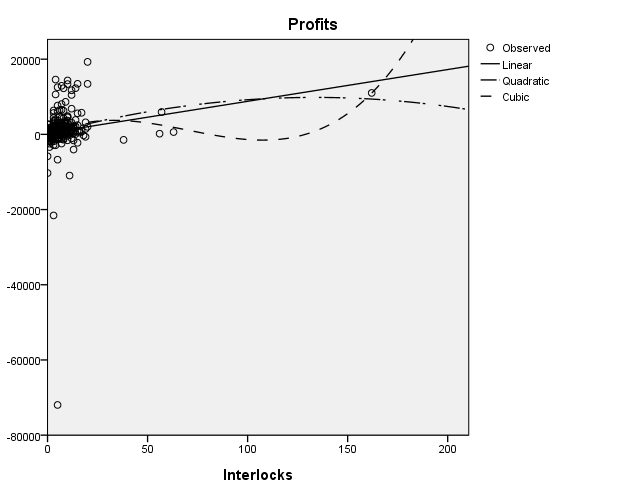
The mean revenue and profits were $19,526.96 million (USD) and $785.63 million (USD) respectively. A negative profit was reasonable as it indicates a high cost of operation (Aghion & Tirole, 1997).

The ten sectors were being transformed into dummy variables with values zero and one for its quantification as control variables in our analysis. The sector on consumer staples has the highest number of companies with a value of 112 whilst the telecom sector has the lowest number of companies with a sector size of 20. Appendix Table 1 shows the sector breakdown of the 500 companies.

The minimum value for power measurement stands at zero, evidence that these companies were not powerful. The highest value for power was 117 for the company named United Health Group. Although General Electric had the most number of interlocks of 162, it has only a power measurement of 3.30 compared to United Health Group with only 4 interlocks.

* 1. **Data Analysis**

Initial exploration of interlocks impacting profits using a two-dimensional scatter-plot is shown in Figure 2. Graphically, there is a tendency of the data to follow a curvilinear relationship. R2 value measures the amount of variation in the outcome variable that is accounted by regression (Field, 2009). Quadratic and cubic relationship between interlocks and profits showed minute difference in terms of R2 as seen in Appendix Table 2, with R2 values for cubic model at 4.9 %, p < 0.01 and 3.8%, p <0.01 for the quadratic model, which warrants further investigation.



**Figure 2: Scatter-plot between interlocks and profitability**

Initial graphical exploration involving interlocks and profitability did not take into account the significance of the predictors. In addition, the explorations also have not involved control variables like sector, size and age of company. Hierarchical regression is a method of multiple regression used to assess the fit of a proposed model based on theory (Field, 2009). Our literature review distilled existing stands on the relationship between interlocks and profitability hence, to effectively address our research question 1, the following four models were proposed:

* Model 1: Modeling linear association (Positive, negative or no relationship between interlocks and profits)

Profits = B1(Interlocks) + Constant

* Model 2: Modeling linear association involving control variables

Profits = B1(Interlocks) + Control variables^ + Constant

* Model 3: Modeling curvilinear association (Quadratic) involving control variables

Profits = B1(Interlocks) + B2(Interlocks\*Interlocks) + Control variables^ +Constant

* Model 4: Modeling curvilinear association (Cubic) involving control variables

Profits = B1(Interlocks) + B2(Interlocks\*Interlocks) + B3(Interlocks\*Interlocks\*Interlocks) + Control variables^ +Constant

(^Control variables here consist of age of company, size of company and 9 dummy variables from 10 sectors.)

In model 1, the change in R2 value was 3.3%, p < 0.01, which indicates a positive linear relationship between interlocks and profitability. However, the impact was not controlled for age, size and sector of company. In model 2, controlling for size, age and sectors of the companies, the change in R2 was 13.0%, p < 0.01. The adjusted R2 for model two was 14.2%, indicating that this model can explain 14.2% of the change in the variability of profitability. In model 3, curvilinear relationship is studied using the squared value of interlocks (The variable, “Interlocks\*Interlocks”, and “Interlocks\*Interlocks\*Interlocks” was computed using SPSS: Transform 🡪 Compute function). The change in R2 was 0.1%, p > 0.05, indicating a non-significant curvilinear relationship. Furthermore, the beta coefficient of “Interlocks\*Interlocks” was -0.193, p > 0.05 for Model 3 and the beta coefficient of “Interlocks\*Interlocks\*Interlocks” was 0.007, p > 0.05 (See Appendix Table 4). Hence, when interlocks and profits were controlled for size, age and sectors of the companies, there exhibit no curvilinear relationship. The R2-value for model 3 and 4 were also lower than that of model 2, with adjusted R2 value 14.0 and 14.1% respectively instead of model 2’s 14.2%.

As a form of validation, the analysis was performed using the method “Enter” regression. This method enters all the variables into the regression model and each of the predictors was tested against a probability value of 0.05. Appendix Table 5 shows the results to the regression. The curvilinear relationship, confirmed by both models, however, is not statistically significant.

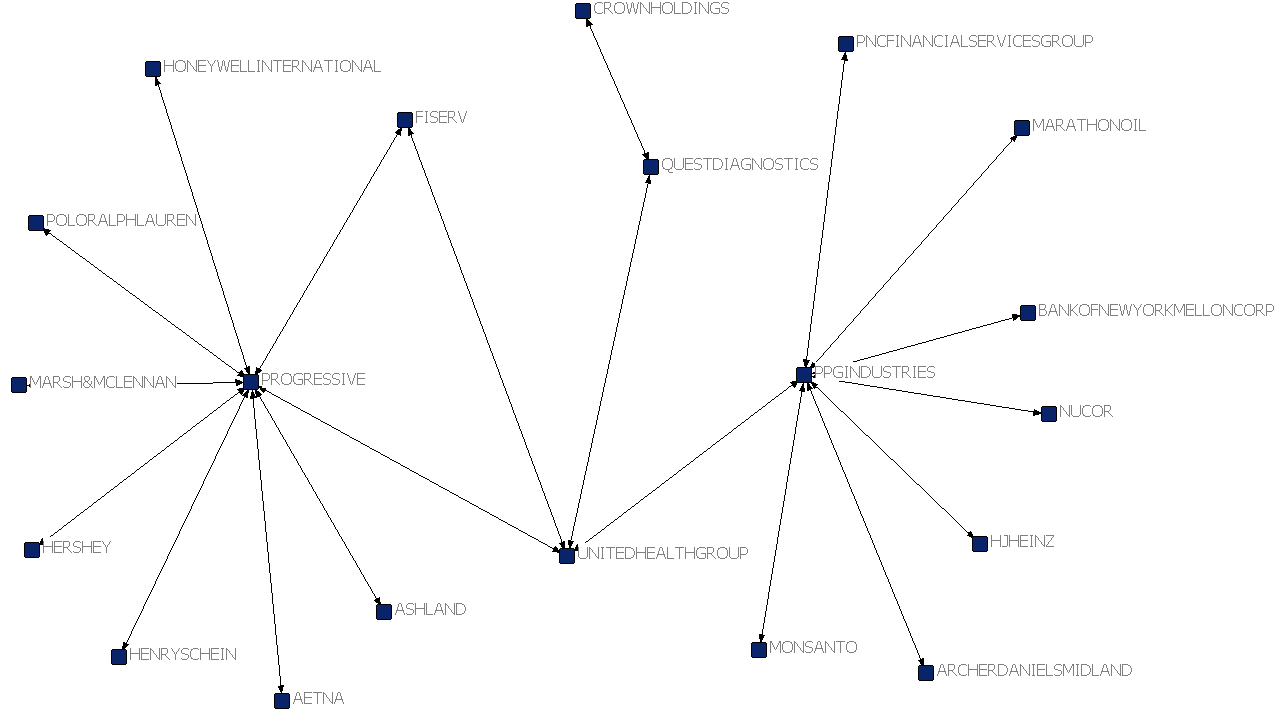
In relation to the insignificant changes in R2 and the beta coefficient of quadratic and cubic quantifications of interlocks, our empirical results showed that there is no curvilinear relationship between interlocks and profitability. Appendix Table 6 shows the final regression model without “Interlocks\*Interlocks” and “Interlocks\*Interlocks\*Interlocks”, with adjusted R2 =14.2%, p < 0.05. Hence, out of the four proposed regression model, we conclude that model 2 best quantifies the relationship between interlocks and profitability, controlling for size, age and sector of the companies. Appendix Table 7 produces three types of correlation, the zero-order correlation, partial and part correlation. The zero-order correlation relates the association between the interlocks and profits, without controlling for the rest of the independent variables, which is not within the interest of our study. We are, however, interested to look into partial and part correlation. Partial correlation, which gives the coefficient scores between profits and each predictor, are controlled for all other predictors. The partial correlation for interlock and profits, controlling for all other predictor variables is 0.08, p < 0.05. Part correlation represents the relationship between each predictor and the part of the outcome that is not explained by the other predictors in the model (Field, 2009). The part correlation for interlocks and profits is 0.074, p < 0.05. Both partial and part correlation indicates a moderate linear relationship between interlocks and profitability.

Next, to assess model fit and to test regression assumption, regression analysis was performed with model 2. Regression analysis assumes that the model’s residuals or errors, which is the difference between expected and observed scores, follow a mean of zero and standard deviations of value one (Field, 2009). Appendix Figure 2 shows the distribution of errors following a mean of zero (-2.86E-17) and standard deviation of almost one (0.988), indicating a non-violation of the regression assumption.

Independent variables which are highly correlated leads to the problem of multicollinearity (James, Carroll, & Green, 2003). Variance inflation factor (VIF), and the tolerance scores are used as tests for the presence of multicollinearity. VIF scores were 2.00 or below. The low scores exhibit an absence of multi-collinearity problem in the regression model as seen in Appendix Table 7. Furthermore, tolerance scores were also above 0.2. With a score lower than 0.2, this indicates that there is a potential problem of multi-collinearity which is not evident in our case (Menard, 1995).

To address our research question 2, we conducted regression analysis on the impact of the company’s measure of power on its profitability. Bonacich argued that one’s centrality is based on how many connections one has and how many the connections the company in the neighborhood had. He argued that being connected to others who are connected makes a company central but not powerful. Hence, to address our research question 2, we derived the eigenvector (Bonacich’s) scores as a measurement for companies’ power.

In terms of Bonacich’s scores, the Company called United Health Group is the most powerful. From Table 1, we saw that the mean number of interlocks was 5.3. United Health Group, although having only 4 interlocks with other Fortune 500 Companies, it was connected to companies which was connected to those who has a higher than average number of connection. In particular, United Health Group was connected to PPR Industrial with 8 interlocks and Progressive with 9 interlocks. Furthermore, these companies which were connected PPR Industrial and Progressive were in turned also had higher than average connections. This measurement of Bonacich’s power awards a high score to those deemed to be having the correct connections and not just having a high number of connections. The network diagram Figure 3 below shows the extent of interlocks:



**Figure 3: Social Network Diagram of United Health Group using DrawNet**

Initial exploration of the relationship between companies’ power and profitability can be seen from the scatterplot in Appendix Figure 3. Due to the lack of prior research and hence theories justifying the relationship between companies’ power and profitability, the “Enter” method of regression was employed to investigate the impact of companies’ power on its profitability. Two regression models were built as follows.

* Model 5: Modeling linear association (Positive, negative or no relationship between interlocks and profits)

Profits = B1(Power) + Constant

* Model 6: Modeling linear association with control variables

Profits = B1(Power) + Control variables^ +Constant

(^Control variables consist of age of company, size of company and 9 dummy variables deriving from 10 sectors)

Model 5 showed the results of the impact of power on profitability being insignificant (R2 Change = 0.00%, p > 0.05). Model 6 showed the results of the impact of power on profitability, controlling for age, size and sector of the companies. R2 change for Model 5 was also significant (R2 change = 15.7%, p < 0.05).

Our empirical results in Model 6, Appendix Table 9 showed that there is no significant impact of companies’ power on it profitability (Bpower = -5.726, p > 0.05). Appendix Table 9 produced the partial and part correlation. Partial correlation, which gives the coefficient scores between profits and each predictor, are controlled for all other predictors. The partial correlation for power and profits, controlling for all other predictor variables is -0.023 p > 0.05. The part correlation for interlocks and profits is -0.021, p > 0.05. Both partial and part correlation indicates insignificant linear relationship between power and profitability. Appendix Figure 4 shows the distribution of errors following a mean of zero (-6.60E-17) and standard deviation of almost one (0.988), indicating a non-violation of the regression assumption that all errors follows a normal distribution.

Table 2 below summarizes the results from our six models for our research question 1 and 2.

|  |  |  |  |
| --- | --- | --- | --- |
| **Research Question I** | | | |
| Model | Predictor(s) | Change in R-squared | Sig. F Change |
| 1 | Profits = B1(Interlocks) + Constant | 0.033 | 0.000 |
| 2 | Profits = B1(Interlocks) + Control variables^ + Constant | 0.130 | 0.000 |
| 3 | Profits = B1(Interlocks) + B2(Interlocks\*Interlocks) + Control variables^ +Constant | 0.001 | 0.527 |
| 4 | Profits = B1(Interlocks) + B2(Interlocks\*Interlocks) + B3(Interlocks\*Interlocks\*Interlocks) + Control variables^ +Constant | 0.001 | 0.501 |
| **Research Question II** | | | |
| Model | Predictor(s) | Change in R-squared |  |
| 5 | Profits = B1(Power) + Constant | 0.000 | 0.703 |
| 6 | Profits = B1(Power) + Control variables^ +Constant | 0.157 | 0.000 |
| ^ Control variables consist of age of companies, size of companies and 9 dummy variables deriving from 10 sectors | | | |

**Table 2: Model Summary for Hierarchical Regression dependent on Profitability**

1. **Discussion and Conclusion**

The reasons for our research are two-folds, (1) Fortune 500 Companies wield enormous power and impact governmental policies on a regular basis, (2) economic actors are affected by their networks with other social actors (Oinas-Kukkonen, et al., 2010). Hence, in this paper, we seek to understand how measures of interlocks and power have an impact on its profitability. We have established the use of companies’ profitability as a measure of its performance.

Our literature review discussed the four existing perspective of the impact of interlocks on a company’s profitability, as well, the impact of companies’ power on its profitability. Also, we reviewed the literature on measurements of centrality and found Bonacich’s measurement of power to be most superior (Bonacich, 1987). We established the differences between interlocking directorships and power in two ways, namely interlocks were merely absolute counts and quantification is between two companies at any one time whilst power measures take into account the focal companies’ neighboring ties and awards a higher power if the focal companies’ neighbors were highly connected as well. To date, there has been no research which investigates the impact of interlocks on a companies’ profitability in the context of the 2010 Fortune 500 listing. In this thesis, we seek to establish, if any, the impact of interlocks and power on companies’ performance profitability using regression modeling.

Our empirical analysis found that the number of interlocks a company possesses has a positive impact on the companies’ profitability. No curvilinear relationship was supported by our models. A positive impact of interlocks on companies’ performance in terms of profits suggests a support for the resource dependency theory, which reduces uncertainty through environmental scanning (Pfeffer and Salancik, 1978). The reduction in uncertainty in turned increases the efficiency of resource allocation decisions and thus has a positive impact on profits (Phillip, et al., 2003). The interlocks also allowed board members to scan widely to detect threats, as well as opportunities externally.

For our second research objective, we wanted to investigate if a companies’ measurement of power has an impact on the companies’ profitability. Bonacich argued that being connected to others who are connected makes a company central but not powerful. Hence, a measure of the companies’ power using the eigenvector (Bonacich’s) measure was used. Our empirical analysis of the impact of the companies’ power on its performance in terms of profitability showed inconsequential results. There is no significant impact of the companies’ power on its profitability.

1. **Managerial Implications**

Interlocks exist so that companies may gain access to resources, coordinate action between companies and to reduce uncertainty deriving from competition (Phillip, et al., 2003).

There are two important managerial implications deriving from our study. Firstly, our empirical results of our analysis on the 2010 Fortune 500 list showed that the number of company interlocks as a function of director interlocks has a positive impact on the companies’ performance as far as profitability is concerned. Hence, in the context of Fortune 500 Companies, we make the suggestion that companies may increase the number of director interlocks if the company wished to increase its profits. However, based on the upper class cohesion theory and which limits diversity amongst members of interlocks and has shown to impact a companies’ profitability negatively (Carter et al, 2003), we further suggest that the increase in the number of interlocking directorships should not be done on basis of closely-knitted members but that that which emcompasses diversification.

Secondly, although there were no prior research and analysis done on the impact of companies’ power of influence on its profitability, our empirical results showed that a companies’ power has no impact on its performance as far as profits are concerned. Hence, companies do not necessarily need to interlock with other companies who are deemed to possess a wider and larger network.

To date, there has been no known analysis which was done on how the companies’ power would impact its performance in terms of profits, particularly in the context of the Fortune 500 list of 2010, and it is our desire that managers and decision makers of the companies would find our research an insightful one.

1. **Limitations**

Several challenges were encountered in the writing of this thesis. In our quantification of a company’s performance, we only took into account the company’s profit as this is the basis for a company to be selected into the Fortune 500. In addition, although the company’s revenues were also used as a basis of being chosen, we have used the revenue as a proxy for size of the company, as a control variable. Therefore, as far as the company’s performance is concerned, the results deriving from our model may only be applicable to its profits.

Also, due to the limited time frame of this thesis, we were unable to explore the models in finer and greater detail, in particular, in terms of sectors or even industrial level.

In addition, our research took a quantitative approach towards the study of interlocks and power impacting a company’s profitability; qualitative justifications, which may require interviews and/or focus group studies, potentially demands a longer timeframe and is left out in this study as well.

Last but not least, in our literature review, resource dependence theory states that an organization is linked to its external environment when organizations are embedded in a network of interdependence and social relationships (Smith, 2009). Following this perspective, interlocking boards are a means such that organizations can use to access resources such as information, ideas from the external environment (Hillman & Dalziel, 2003). This can provide an advantage over its competitors and lead to better performance (J. Pfeffer & G. R. Salancik, 1978). However, there have been evidence that the resource dependence theory is not always perfect (G. F. Davis & Cobb, 2009). Firstly, findings at the higher-aggregated industry level may say little about company-level dynamics (G. F. Davis & Cobb, 2009) and secondly according to the Clayton Antitrust Act, directors are prohibited to sit on the boards of similar industries (The Columbia Encyclopedia, 2008), an area which this thesis assumes no violation of. Thus, this is a limitation that we should also consider.

1. **Future Research**

Limitations in this study give rise to opportunities for future research.

Firstly, Fortune 500 companies were selected based on the company’s profitability and revenues, other company performance measures, both financial and non-financial may be considered in future research; in the same vein, but determinants of company’s performance may be extended beyond measurements of interlocks and power.

Secondly, the analysis may be re-modeled at a finer granularity, in terms of sectors or industrial level as different industry. This may give alternative conclusion on the interlocks and power on the companies’ profitability.

Thirdly, in-depth analysis may be carried out for those companies which have a high number of interlocks. Our study has employed a quantitative approach to measure impact of company performance. Qualitative analysis like interviews with directors with a high number of interlocks or focus group analysis consisting of board of directors may be enlisted for a more holistic view on reasons impacting company performance.

Last but not least, further research may also establish and confirm the non-violation of the Clayton AntiTrust Act amongst the Fortune 500 Companies. Currently, different stock exchanges used different definition of industries and this would warrant a common standard of definition such that the interlocks do not occur between competing companies of identical ones.

1. **Acknowledgements**

We would like to thank Professor Alton Chua for his constant guidance and the inspiration along the way to make this writing a reality.

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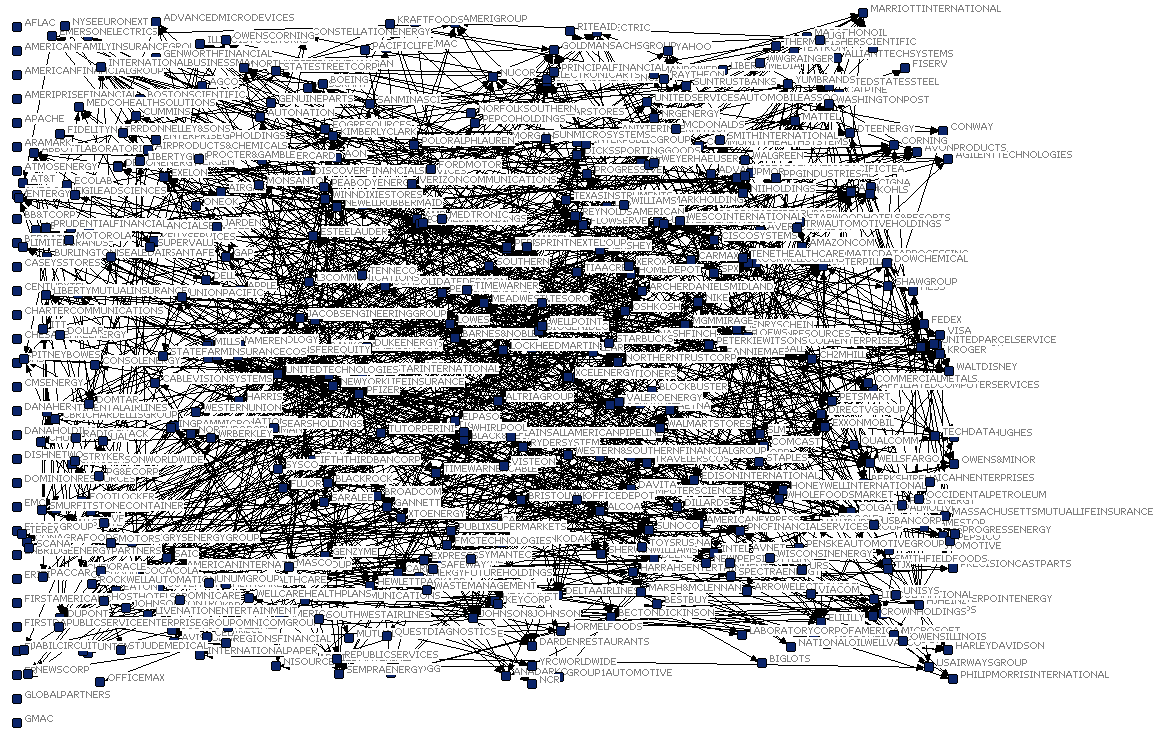
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| Appendix |
| Critical Inquiry |
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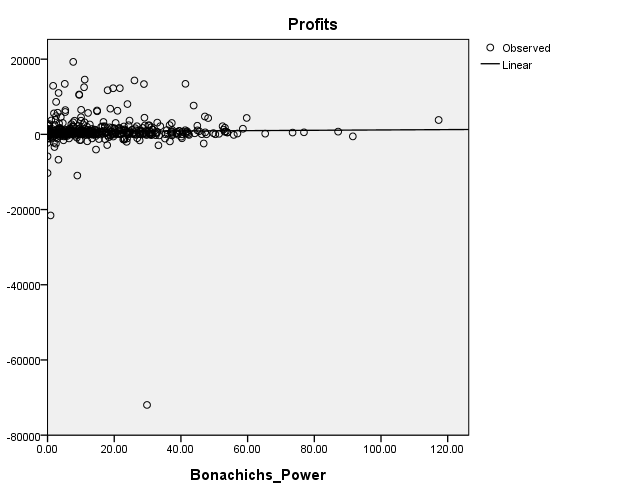
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| **An Exploratory social network analysis of 2010 Fortune 500 companies: The impact of interlocking directorships on companies’ performance** |



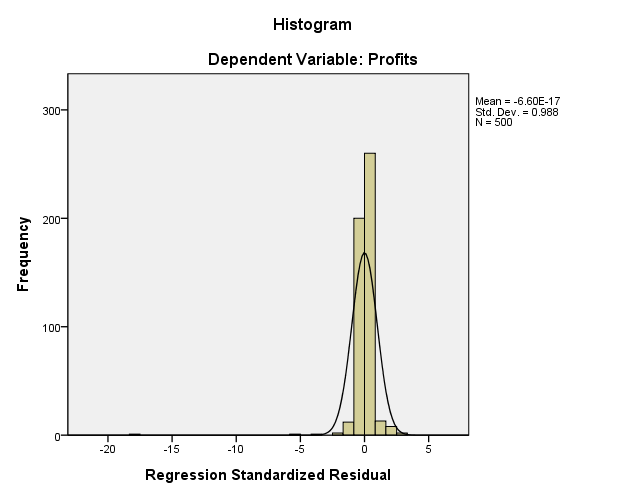
**Appendix Figure 1: Social Network Diagram of 500 companies using NetDraw**



**Appendix Figure 2: Normally distributed errors for Model 2**



**Appendix Figure 3: Scatterplot between power and profitability**



**Appendix Figure 4: Normally distributed errors from Model 6**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Appendix Table 1: Breakdown of Sectors** | | | | | |
|  | | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| Valid | Consumer Discretionary | 54 | 10.8 | 10.8 | 10.8 |
| Consumer Staples | 112 | 22.4 | 22.4 | 33.2 |
| Energy | 28 | 5.6 | 5.6 | 38.8 |
| Financials | 76 | 15.2 | 15.2 | 54.0 |
| HealthCare | 35 | 7.0 | 7.0 | 61.0 |
| Industrials | 63 | 12.6 | 12.6 | 73.6 |
| Information Technology | 27 | 5.4 | 5.4 | 79.0 |
| Materials | 52 | 10.4 | 10.4 | 89.4 |
| Telecom | 20 | 4.0 | 4.0 | 93.4 |
| Utilities | 33 | 6.6 | 6.6 | 100.0 |
| Total | 500 | 100.0 | 100.0 |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Appendix Table 2: Initial exploration of linear and curvilinear relationship between interlocks and profits** | | | | | | | | | |
| **Equation** | **Model Summary** | | | | | **Parameter Estimates** | | | |
| **R Square** | **F** | **df1** | **df2** | **Sig.** | **Constant** | **b1** | **b2** | **b3** |
| Linear | 0.033 | 16.805 | 1 | 498 | 0.000 | 337.512 | 84.519 |  |  |
| Quadratic | 0.038 | 9.921 | 2 | 497 | 0.000 | 73.677 | 146.017 | -0.547 |  |
| Cubic | 0.049 | 8.565 | 3 | 496 | 0.000 | -303.307 | 271.403 | -5.363 | 0.025 |

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| **Appendix Table 3: Model Summary for Models 1,2,3 and 4** | | | | | | | | | |
| **Model** | **R** | **R Square** | **Adjusted R Square** | **Std. Error of the Estimate** | **Change Statistics** | | | | |
| **R Square Change** | **F Change** | **df1** | **df2** | **Sig. F Change** |
| **1** | 0.181a | 0.033 | 0.031 | 4268.834 | 0.033 | 16.805 | 1 | 498 | 0.000 |
| **2** | 0.403b | 0.162 | 0.142 | 4017.304 | 0.130 | 6.847 | 11 | 487 | 0.000 |
| **3** | 0.404c | 0.163 | 0.141 | 4019.774 | 0.001 | 0.402 | 1 | 486 | 0.527 |
| **4** | 0.405d | 0.164 | 0.140 | 4022.036 | 0.001 | 0.454 | 1 | 485 | 0.501 |

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| **Appendix Table 4: Beta, Correlations and Collinearity Statistics** | | | | | | | | | | | |
| **Model** | | **Unstandardized Coefficients** | | **Standardized Coefficients** | **t** | **Sig.** | **Correlations** | | | **Collinearity Statistics** | |
| **B** | **Std. Error** | **Beta** | **Zero-order** | **Partial** | **Part** | **Tolerance** | **VIF** |
| 1 | (Constant) | 337.512 | 219.990 |  | 1.534 | 0.126 |  |  |  |  |  |
| Interlocks | 84.519 | 20.617 | 0.181 | 4.099 | 0.000 | 0.181 | 0.181 | 0.181 | 1.000 | 1.000 |
| 2 | (Constant) | -774.714 | 568.558 |  | -1.363 | 0.174 |  |  |  |  |  |
| Interlocks | 37.333 | 21.048 | 0.080 | 1.774 | 0.047 | 0.181 | 0.080 | 0.074 | 0.850 | 1.177 |
| Revenue | 0.043 | .006 | 0.316 | 7.044 | 0.000 | 0.349 | 0.304 | 0.292 | 0.853 | 1.173 |
| Age\_Of\_Company | 10.269 | 8.592 | 0.054 | 1.195 | 0.233 | 0.163 | 0.054 | 0.050 | 0.832 | 1.202 |
| Consumer\_Discretionary | 35.344 | 749.011 | 0.003 | 0.047 | 0.962 | -0.018 | 0.002 | 0.002 | 0.597 | 1.674 |
| Consumer\_Staples | 182.631 | 632.992 | 0.018 | 0.289 | 0.773 | -0.009 | 0.013 | 0.012 | 0.463 | 2.158 |
| Energy | 451.805 | 919.285 | 0.024 | 0.491 | 0.623 | 0.051 | 0.022 | 0.020 | 0.723 | 1.384 |
| Financials | -999.846 | 697.263 | -0.083 | -1.434 | 0.152 | -0.105 | -0.065 | -.059 | 0.515 | 1.941 |
| HealthCare | 1835.504 | 848.959 | 0.108 | 2.162 | 0.031 | 0.100 | 0.098 | .090 | 0.688 | 1.454 |
| Information\_Technology | 1614.311 | 925.101 | 0.084 | 1.745 | 0.082 | 0.086 | 0.079 | .072 | 0.738 | 1.354 |
| Materials | 357.931 | 753.887 | 0.025 | 0.475 | 0.635 | -0.023 | 0.022 | 0.020 | 0.609 | 1.641 |
| Telecommunications | 895.468 | 1036.423 | 0.041 | 0.864 | 0.388 | 0.036 | 0.039 | 0.036 | 0.783 | 1.278 |
| Utilities | 539.758 | 870.030 | 0.031 | .620 | .535 | -0.003 | 0.028 | 0.026 | 0.692 | 1.446 |
| 3 | (Constant) | -869.941 | 588.419 |  | -1.478 | 0.140 |  |  |  |  |  |
| Interlocks | 59.829 | 41.277 | 0.128 | 1.449 | 0.148 | 0.181 | 0.066 | 0.060 | 0.221 | 4.520 |
| Revenue | 0.042 | 0.006 | 0.313 | 6.927 | 0.000 | 0.349 | 0.300 | 0.287 | 0.843 | 1.187 |
| Age\_Of\_Company | 9.888 | 8.619 | 0.052 | 1.147 | 0.252 | 0.163 | 0.052 | 0.048 | 0.828 | 1.208 |
| Consumer\_Discretionary | 35.378 | 749.472 | 0.003 | 0.047 | 0.962 | -0.018 | 0.002 | 0.002 | 0.597 | 1.674 |
| Consumer\_Staples | 198.281 | 633.863 | 0.019 | 0.313 | 0.755 | -0.009 | 0.014 | 0.013 | 0.463 | 2.161 |
| Energy | 473.316 | 920.476 | 0.025 | 0.514 | 0.607 | 0.051 | 0.023 | 0.021 | 0.722 | 1.386 |
| Financials | -962.369 | 700.194 | -0.080 | -1.374 | 0.170 | -0.105 | -0.062 | -0.057 | 0.511 | 1.955 |
| HealthCare | 1861.671 | 850.484 | 0.110 | 2.189 | 0.029 | 0.100 | 0.099 | 0.091 | 0.686 | 1.457 |
| Information\_Technology | 1599.080 | 925.982 | 0.083 | 1.727 | 0.085 | 0.086 | 0.078 | 0.072 | 0.738 | 1.355 |
| Materials | 373.433 | 754.747 | 0.026 | 0.495 | 0.621 | -0.023 | 0.022 | 0.021 | 0.609 | 1.643 |
| Telecommunications | 915.238 | 1037.530 | 0.041 | 0.882 | 0.378 | 0.036 | 0.040 | 0.037 | 0.782 | 1.279 |
| Utilities | 585.368 | 873.535 | 0.034 | 0.670 | 0.503 | -0.003 | 0.030 | 0.028 | 0.687 | 1.456 |
| Interlocks\_Sq | -0.193 | 0.305 | -0.054 | -0.634 | 0.527 | 0.119 | -0.029 | -0.026 | 0.240 | 4.167 |
| 4 | (Constant) | -954.727 | 602.058 |  | -1.586 | 0.113 |  |  |  |  |  |
| Interlocks | 98.410 | 70.620 | 0.210 | 1.394 | 0.164 | 0.181 | 0.063 | 0.058 | 0.076 | 13.216 |
| Revenue | 0.042 | 0.006 | 0.307 | 6.633 | 0.000 | 0.349 | 0.288 | 0.275 | 0.806 | 1.240 |
| Age\_Of\_Company | 8.852 | 8.760 | 0.047 | 1.011 | 0.313 | 0.163 | 0.046 | 0.042 | 0.802 | 1.247 |
| Consumer\_Discretionary | 12.124 | 750.688 | 0.001 | 0.016 | 0.987 | -0.018 | 0.001 | 0.001 | 0.596 | 1.678 |
| Consumer\_Staples | 245.563 | 638.093 | 0.024 | .385 | 0.701 | -0.009 | 0.017 | 0.016 | 0.457 | 2.188 |
| Energy | 496.628 | 921.644 | 0.026 | 0.539 | 0.590 | 0.051 | 0.024 | 0.022 | 0.721 | 1.388 |
| Financials | -970.381 | 700.689 | -0.080 | -1.385 | 0.167 | -0.105 | -0.063 | -0.058 | 0.511 | 1.956 |
| HealthCare | 1871.392 | 851.085 | 0.110 | 2.199 | 0.028 | 0.100 | 0.099 | 0.091 | 0.686 | 1.457 |
| Information\_Technology | 1572.312 | 927.355 | 0.082 | 1.695 | 0.091 | 0.086 | 0.077 | 0.070 | 0.736 | 1.358 |
| Materials | 365.933 | 755.254 | 0.026 | 0.485 | 0.628 | -0.023 | 0.022 | 0.020 | 0.609 | 1.643 |
| Telecommunications | 918.720 | 1038.126 | 0.042 | 0.885 | 0.377 | 0.036 | 0.040 | 0.037 | 0.782 | 1.279 |
| Utilities | 621.062 | 875.632 | 0.036 | 0.709 | 0.478 | -0.003 | 0.032 | 0.029 | 0.685 | 1.461 |
| Interlocks\_Sq | -1.576 | 2.075 | -0.438 | -0.759 | 0.448 | 0.119 | -0.034 | -0.032 | 0.005 | 192.570 |
| Interlocks\_Cube | 0.007 | 0.011 | 0.319 | 0.674 | 0.501 | 0.108 | 0.031 | 0.028 | 0.008 | 129.733 |

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| **Appendix Table 5: Model 4 using “Enter” Regression** | | | | | | | | | | | |
| **Model** | | **Unstandardized Coefficients** | | **Standardized Coefficients** | **t** | **Sig.** | **Correlations** | | | **Collinearity Statistics** | |
| **B** | **Std. Error** | **Beta** | **Zero-order** | **Partial** | **Part** | **Tolerance** | **VIF** |
| 4 | (Constant) | -954.727 | 602.058 |  | -1.586 | 0.113 |  |  |  |  |  |
| Interlocks | 98.410 | 70.620 | 0.210 | 1.394 | 0.164 | 0.181 | 0.063 | 0.058 | 0.076 | 13.216 |
| Interlocks\_Sq | -1.576 | 2.075 | -0.438 | -0.759 | 0.448 | 0.119 | -0.034 | -0.032 | 0.005 | 192.570 |
| Interlocks\_Cube | 0.007 | 0.011 | 0.319 | 0.674 | 0.501 | 0.108 | 0.031 | 0.028 | 0.008 | 129.733 |
| Revenue | 0.042 | 0.006 | 0.307 | 6.633 | 0.000 | 0.349 | 0.288 | 0.275 | 0.806 | 1.240 |
| Age\_Of\_Company | 8.852 | 8.760 | 0.047 | 1.011 | 0.313 | 0.163 | 0.046 | 0.042 | 0.802 | 1.247 |
| Consumer\_Discretionary | 12.124 | 750.688 | 0.001 | 0.016 | 0.987 | -0.018 | 0.001 | 0.001 | 0.596 | 1.678 |
| Consumer\_Staples | 245.563 | 638.093 | 0.024 | 0.385 | 0.701 | -0.009 | 0.017 | 0.016 | 0.457 | 2.188 |
| Energy | 496.628 | 921.644 | 0.026 | 0.539 | 0.590 | 0.051 | 0.024 | 0.022 | 0.721 | 1.388 |
| Financials | -970.381 | 700.689 | -0.080 | -1.385 | 0.167 | -0.105 | -0.063 | -0.058 | 0.511 | 1.956 |
| Information\_Technology | 1572.312 | 927.355 | 0.082 | 1.695 | 0.091 | 0.086 | 0.077 | 0.070 | 0.736 | 1.358 |
| Materials | 365.933 | 755.254 | 0.026 | .485 | 0.628 | -0.023 | 0.022 | 0.020 | 0.609 | 1.643 |
| Telecommunications | 918.720 | 1038.126 | 0.042 | .885 | 0.377 | 0.036 | 0.040 | 0.037 | 0.782 | 1.279 |
| Utilities | 621.062 | 875.632 | 0.036 | .709 | 0.478 | -0.003 | 0.032 | 0.029 | 0.685 | 1.461 |
| HealthCare | 1871.392 | 851.085 | 0.110 | 2.199 | 0.028 | 0.100 | 0.099 | 0.091 | 0.686 | 1.457 |

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| **Appendix Table 6: Model Summary for Model 2** | | | | | | | | | |
| **Model** | **R** | **R Square** | **Adjusted R Square** | **Std. Error of the Estimate** | **Change Statistics** | | | | |
| **R Square Change** | **F Change** | **df1** | **df2** | **Sig. F Change** |
| 2 | 0.403a | 0.162 | 0.142 | 4017.304 | 0.162 | 7.857 | 12 | 487 | 0.000 |

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| **Appendix Table 7: Final Model – Model 2** | | | | | | | | | | | |
| **Model** | | **Unstandardized Coefficients** | | **Standardized Coefficients** | **t** | **Sig.** | **Correlations** | | | **Collinearity Statistics** | |
| **B** | **Std. Error** | **Beta** | **Zero-order** | **Partial** | **Part** | **Tolerance** | **VIF** |
| 2 | (Constant) | -774.714 | 568.558 |  | -1.363 | 0.174 |  |  |  |  |  |
| Interlocks | 37.333 | 21.048 | 0.080 | 1.774 | 0.047 | 0.181 | 0.080 | 0.074 | 0.850 | 1.177 |
| Revenue | 0.043 | 0.006 | 0.316 | 7.044 | 0.000 | 0.349 | 0.304 | 0.292 | 0.853 | 1.173 |
| Age\_Of\_Company | 10.269 | 8.592 | 0.054 | 1.195 | 0.233 | 0.163 | 0.054 | 0.050 | 0.832 | 1.202 |
| Consumer\_Discretionary | 35.344 | 749.011 | 0.003 | 0.047 | 0.962 | -0.018 | 0.002 | 0.002 | 0.597 | 1.674 |
| Consumer\_Staples | 182.631 | 632.992 | 0.018 | 0.289 | 0.773 | -0.009 | 0.013 | 0.012 | 0.463 | 2.000 |
| Energy | 451.805 | 919.285 | 0.024 | 0.491 | 0.623 | 0.051 | 0.022 | 0.020 | 0.723 | 1.384 |
| Financials | -999.846 | 697.263 | -0.083 | -1.434 | 0.152 | -0.105 | -0.065 | -0.059 | 0.515 | 1.941 |
| HealthCare | 1835.504 | 848.959 | 0.108 | 2.162 | 0.031 | 0.100 | 0.098 | 0.090 | 0.688 | 1.454 |
| Information\_Technology | 1614.311 | 925.101 | 0.084 | 1.745 | 0.082 | 0.086 | 0.079 | 0.072 | 0.738 | 1.354 |
| Materials | 357.931 | 753.887 | 0.025 | 0.475 | 0.635 | -0.023 | 0.022 | 0.020 | 0.609 | 1.641 |
| Telecommunications | 895.468 | 1036.423 | 0.041 | 0.864 | 0.388 | 0.036 | 0.039 | 0.036 | 0.783 | 1.278 |
| Utilities | 539.758 | 870.030 | 0.031 | 0.620 | 0.535 | -0.003 | 0.028 | 0.026 | 0.692 | 1.446 |

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| **Appendix Table 8: Model Summary for Model 5 and 6** | | | | | | | | | |
| **Model** | **R** | **R Square** | **Adjusted R Square** | **Std. Error of the Estimate** | **Change Statistics** | | | | |
| **R Square Change** | **F Change** | **df1** | **df2** | **Sig. F Change** |
| 5 | 0.017a | 0.000 | -0.002 | 4339.629 | 0.000 | 0.145 | 1 | 498 | 0.703 |
| 6 | 0.397b | 0.157 | 0.136 | 4029.218 | 0.157 | 8.244 | 11 | 487 | 0.000 |

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| **Appendix Table 9 – Final Model – Model 5 and 6** | | | | | | | | | | | |
| **Model** | | **Unstandardized Coefficients** | | **Standardized Coefficients** | **t** | **Sig.** | **Correlations** | | | **Collinearity Statistics** | |
| **B** | **Std. Error** | **Beta** | **Zero-order** | **Partial** | **Part** | **Tolerance** | **VIF** |
| 5 | (Constant) | 714.742 | 268.892 |  | 2.658 | 0.008 |  |  |  |  |  |
| Bonachichs\_Power | 4.580 | 12.025 | 0.017 | 0.381 | 0.703 | 0.017 | 0.017 | 0.017 | 1.000 | 1.000 |
| 6 | (Constant) | -628.248 | 598.531 |  | -1.050 | 0.294 |  |  |  |  |  |
| Bonachichs\_Power | -5.726 | 11.415 | -0.021 | -0.502 | 0.616 | 0.017 | -0.023 | -0.021 | 0.957 | 1.045 |
| Revenue | 0.046 | 0.006 | 0.338 | 7.709 | 0.000 | 0.349 | 0.330 | 0.321 | 0.900 | 1.112 |
| Age\_Of\_Company | 13.782 | 8.375 | 0.073 | 1.646 | 0.100 | 0.163 | 0.074 | 0.068 | 0.881 | 1.135 |
| Consumer\_Discretionary | 46.144 | 751.213 | 0.003 | 0.061 | 0.951 | -0.018 | 0.003 | 0.003 | 0.597 | 1.674 |
| Consumer\_Staples | 155.707 | 635.904 | 0.015 | 0.245 | 0.807 | -0.009 | 0.011 | 0.010 | 0.462 | 2.165 |
| Energy | 368.306 | 920.818 | 0.020 | 0.400 | 0.689 | 0.051 | 0.018 | 0.017 | 0.724 | 1.380 |
| Financials | -957.966 | 699.648 | -0.079 | -1.369 | 0.172 | -0.105 | -0.062 | -0.057 | 0.515 | 1.943 |
| HealthCare | 1812.951 | 852.558 | 0.107 | 2.126 | 0.034 | 0.100 | 0.096 | 0.088 | 0.686 | 1.457 |
| Information\_Technology | 1612.951 | 928.673 | 0.084 | 1.737 | 0.083 | 0.086 | 0.078 | 0.072 | 0.737 | 1.357 |
| Materials | 366.291 | 757.483 | 0.026 | 0.484 | 0.629 | -0.023 | 0.022 | 0.020 | 0.607 | 1.647 |
| Telecommunications | 820.804 | 1043.428 | 0.037 | 0.787 | 0.432 | 0.036 | 0.036 | 0.033 | 0.777 | 1.288 |
| Utilities | 422.554 | 870.925 | 0.024 | 0.485 | 0.628 | -0.003 | 0.022 | 0.020 | 0.694 | 1.440 |

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| **Appendix Table 10: List of Fortune 500 companies** | | | | | | | | | | |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 1 | EXXONMOBIL | Energy | $19,280 | $284,650 | 1920 | 89 | 8000 | 400 | 20 | 7.7 |
| 2 | MICROSOFT | Information Technology | $14,569 | $58,437 | 1986 | 23 | 64 | 16 | 4 | 11.15 |
| 3 | WALMARTSTORES | Consumer Discretionary | $14,335 | $408,214 | 1970 | 39 | 1000 | 100 | 10 | 26.05 |
| 4 | PROCTER&GAMBLE | Consumer Staples | $13,436 | $79,697 | 1950 | 59 | 3375 | 225 | 15 | 41.35 |
| 5 | INTERNATIONALBUSINESSMACHINES | Information Technology | $13,425 | $95,758 | 1915 | 94 | 8000 | 400 | 20 | 5.16 |
| 6 | GOLDMANSACHSGROUP | Financials | $13,385 | $51,673 | 1999 | 10 | 1000 | 100 | 10 | 28.9 |
| 7 | MERCK | HealthCare | $12,901 | $27,428 | 1946 | 63 | 343 | 49 | 7 | 1.67 |
| 8 | AT&T | Telecom | $12,535 | $123,018 | 2007 | 2 | 125 | 25 | 5 | 10.94 |
| 9 | WELLSFARGO | Financials | $12,275 | $98,636 | 2008 | 1 | 2744 | 196 | 14 | 21.67 |
| 10 | JOHNSON&JOHNSON | HealthCare | $12,266 | $61,897 | 1944 | 65 | 512 | 64 | 8 | 19.67 |
| 11 | JPMORGANCHASE&CO | Financials | $11,728 | $115,632 | 1969 | 40 | 1728 | 144 | 12 | 18.02 |
| 12 | GENERALELECTRIC | Financials | $11,025 | $156,779 | 1892 | 117 | 4251528 | 26244 | 162 | 3.3 |
| 13 | BRISTOLMYERSSQUIBB | HealthCare | $10,612 | $21,634 | 1929 | 80 | 64 | 16 | 4 | 9.47 |
| 14 | CHEVRON | Energy | $10,483 | $163,527 | 1921 | 88 | 1728 | 144 | 12 | 9.52 |
| 15 | PFIZER | HealthCare | $8,635 | $50,009 | 1944 | 65 | 729 | 81 | 9 | 2.57 |
| 16 | BERKSHIREHATHAWAY | Financials | $8,055 | $112,493 | 1976 | 33 | 343 | 49 | 7 | 23.97 |
| 17 | HEWLETTPACKARD | Information Technology | $7,660 | $114,552 | 1961 | 48 | 125 | 25 | 5 | 43.8 |
| 18 | COCACOLA | Consumer Staples | $6,824 | $30,990 | 1950 | 59 | 1728 | 144 | 12 | 18.81 |
| 19 | GOOGLE | Information Technology | $6,520 | $23,651 | 2004 | 5 | 343 | 49 | 7 | 10.07 |
| 20 | LIBERTYMEDIA | Information Technology | $6,462 | $10,398 | 1995 | 14 | 216 | 36 | 6 | 5.32 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 21 | PHILIPMORRISINTERNATIONAL | Materials | $6,342 | $25,035 | 2008 | 1 | 27 | 9 | 3 | 14.83 |
| 22 | BANKOFAMERICACORP | Financials | $6,276 | $150,450 | 2009 | 0 | 512 | 64 | 8 | 20.97 |
| 23 | CISCOSYSTEMS | Telecom | $6,134 | $36,117 | 1990 | 19 | 125 | 25 | 5 | 14.87 |
| 24 | PEPSICO | Consumer Staples | $5,946 | $43,232 | 1919 | 90 | 185193 | 3249 | 57 | 5.29 |
| 25 | ABBOTTLABORATORIES | HealthCare | $5,746 | $30,765 | 1929 | 80 | 4913 | 289 | 17 | 3.02 |
| 26 | APPLE | Information Technology | $5,704 | $36,537 | 1980 | 29 | 27 | 9 | 3 | 12.15 |
| 27 | ORACLE | Information Technology | $5,593 | $23,252 | 1986 | 23 | 3375 | 225 | 15 | 1.93 |
| 28 | CONOCOPHILLIPS | Energy | $4,858 | $139,515 | 1920 | 89 | 1000 | 100 | 10 | 2.56 |
| 29 | WELLPOINT | HealthCare | $4,746 | $65,028 | 1993 | 16 | 216 | 36 | 6 | 47.18 |
| 30 | AMGEN | HealthCare | $4,605 | $14,642 | 1983 | 26 | 1000 | 100 | 10 | 3.98 |
| 31 | MCDONALDS | Consumer Staples | $4,551 | $22,745 | 1966 | 43 | 1000 | 100 | 10 | 10.03 |
| 32 | CONSTELLATIONENERGY | Energy | $4,443 | $15,599 | 1950 | 59 | 27 | 9 | 3 | 29.05 |
| 33 | INTEL | Materials | $4,369 | $35,127 | 1971 | 38 | 343 | 49 | 7 | 59.71 |
| 34 | ELILILLY | HealthCare | $4,329 | $21,836 | 1970 | 39 | 512 | 64 | 8 | 48.15 |
| 35 | UNITEDTECHNOLOGIES | Industrials | $3,829 | $52,920 | 1934 | 75 | 2744 | 196 | 14 | 2.4 |
| 36 | UNITEDHEALTHGROUP | HealthCare | $3,822 | $87,138 | 1991 | 18 | 64 | 16 | 4 | 117.29 |
| 37 | CVSCAREMARK | Consumer Staples | $3,696 | $98,729 | 1952 | 57 | 125 | 25 | 5 | 1.12 |
| 38 | VERIZONCOMMUNICATIONS | Telecom | $3,651 | $107,808 | 1984 | 25 | 1000 | 100 | 10 | 24.58 |
| 39 | COMCAST | Telecom | $3,638 | $35,756 | 1972 | 37 | 27 | 9 | 3 | 10.03 |
| 40 | TRAVELERSCOS | Financials | $3,622 | $24,680 | 1991 | 18 | 729 | 81 | 9 | 8.07 |
| 41 | WALTDISNEY | Consumer Discretionary | $3,307 | $36,149 | 1957 | 52 | 729 | 81 | 9 | 16.75 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 42 | ALTRIAGROUP | Materials | $3,206 | $16,824 | 1881 | 128 | 27 | 9 | 3 | 7.69 |
| 43 | 3M | Consumer Discretionary | $3,193 | $23,123 | 1946 | 63 | 6859 | 361 | 19 | 11.11 |
| 44 | PRUDENTIALFINANCIAL | Financials | $3,124 | $32,688 | 2003 | 6 | 1728 | 144 | 12 | 32.9 |
| 45 | LOCKHEEDMARTIN | Industrials | $3,024 | $45,189 | 1961 | 48 | 216 | 36 | 6 | 37.25 |
| 46 | KRAFTFOODS | Consumer Staples | $3,021 | $40,386 | 2001 | 8 | 343 | 49 | 7 | 20.42 |
| 47 | UNITEDSERVICESAUTOMOBILEASSOCIATION | Financials | $3,020 | $17,558 | 1996 | 13 | 125 | 25 | 5 | 4.56 |
| 48 | OCCIDENTALPETROLEUM | Materials | $2,915 | $15,531 | 1964 | 45 | 27 | 9 | 3 | 3.45 |
| 49 | FREEPORTMCMORANCOPPER&GOLD | Materials | $2,749 | $15,040 | 1988 | 21 | 0 | 0 | 0 | 0 |
| 50 | FORDMOTOR | Industrials | $2,717 | $118,308 | 1956 | 53 | 729 | 81 | 9 | 0.5 |
| 51 | EXELON | Utilities | $2,707 | $17,318 | 1943 | 66 | 729 | 81 | 9 | 7.15 |
| 52 | HOMEDEPOT | Consumer Staples | $2,661 | $66,176 | 1984 | 25 | 125 | 25 | 5 | 10.64 |
| 53 | GILEADSCIENCES | HealthCare | $2,636 | $7,011 | 1992 | 17 | 1 | 1 | 1 | 12.65 |
| 54 | TARGET | Consumer Discretionary | $2,488 | $65,357 | 1969 | 40 | 1331 | 121 | 11 | 2.1 |
| 55 | TIMEWARNER | Consumer Discretionary | $2,468 | $28,842 | 2009 | 0 | 125 | 25 | 5 | 36.59 |
| 56 | PNCFINANCIALSERVICESGROUP | Financials | $2,447 | $19,231 | 1987 | 22 | 3375 | 225 | 15 | 24.29 |
| 57 | GENERALDYNAMICS | Industrials | $2,394 | $31,981 | 1952 | 57 | 512 | 64 | 8 | 30.51 |
| 58 | EBAY | Information Technology | $2,389 | $8,727 | 1995 | 14 | 64 | 16 | 4 | 30.23 |
| 59 | VISA | Financials | $2,353 | $6,911 | 2008 | 1 | 343 | 49 | 7 | 29.2 |
| 60 | MOSAIC | Materials | $2,350 | $10,298 | 2004 | 5 | 27 | 9 | 3 | 0.54 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 61 | COLGATEPALMOLIVE | Consumer Staples | $2,291 | $15,327 | 1930 | 79 | 216 | 36 | 6 | 44.91 |
| 62 | BAXTERINTERNATIONAL | Consumer Staples | $2,205 | $12,562 | 1961 | 48 | 27 | 9 | 3 | 7.58 |
| 63 | USBANCORP | Financials | $2,205 | $19,490 | 1984 | 25 | 125 | 25 | 5 | 9.19 |
| 64 | CHUBB | Financials | $2,183 | $13,016 | 1986 | 23 | 64 | 16 | 4 | 17.17 |
| 65 | MEDTRONIC | Consumer Staples | $2,169 | $14,599 | 1977 | 32 | 2197 | 169 | 13 | 33.81 |
| 66 | HONEYWELLINTERNATIONAL | Industrials | $2,153 | $30,908 | 1985 | 24 | 729 | 81 | 9 | 52.5 |
| 67 | UNITEDPARCELSERVICE | Consumer Discretionary | $2,152 | $45,297 | 1999 | 10 | 729 | 81 | 9 | 26.8 |
| 68 | AMERICANEXPRESS | Information Technology | $2,130 | $26,730 | 1977 | 32 | 2744 | 196 | 14 | 16.46 |
| 69 | MONSANTO | Materials | $2,109 | $11,740 | 2000 | 9 | 343 | 49 | 7 | 22.89 |
| 70 | XTOENERGY | Materials | $2,019 | $9,064 | 1993 | 16 | 8000 | 400 | 20 | 7.7 |
| 71 | CORNING | Telecom | $2,008 | $5,395 | 1945 | 64 | 2197 | 169 | 13 | 7.78 |
| 72 | WALGREEN | Consumer Staples | $2,006 | $63,335 | 1934 | 75 | 27 | 9 | 3 | 16.1 |
| 73 | GENERALMOTORS | Industrials | $2,000 | $104,589 | 1984 | 25 | 1728 | 144 | 12 | 11.86 |
| 74 | RAYTHEON | Industrials | $1,935 | $24,881 | 1952 | 57 | 8 | 4 | 2 | 17.17 |
| 75 | UNIONPACIFIC | Industrials | $1,898 | $14,143 | 1969 | 40 | 64 | 16 | 4 | 31.08 |
| 76 | KIMBERLYCLARK | Consumer Staples | $1,884 | $19,115 | 1929 | 80 | 729 | 81 | 9 | 18.6 |
| 77 | LOWES | Consumer Staples | $1,783 | $47,220 | 1979 | 30 | 1331 | 121 | 11 | 19.35 |
| 78 | DUPONT | Materials | $1,755 | $27,328 | 1922 | 87 | 1000 | 100 | 10 | 53.18 |
| 79 | EMERSONELECTRIC | Information Technology | $1,724 | $20,915 | 1944 | 65 | 125 | 25 | 5 | 21.46 |
| 80 | BURLINGTONNORTHERNSANTAFE | Industrials | $1,721 | $14,016 | 1970 | 39 | 1 | 1 | 1 | 3.63 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 81 | ARCHERDANIELSMIDLAND | Consumer Staples | $1,707 | $69,207 | 1924 | 85 | 343 | 49 | 7 | 28.54 |
| 82 | NORTHROPGRUMMAN | Industrials | $1,686 | $35,291 | 1951 | 58 | 2197 | 169 | 13 | 19.94 |
| 83 | SOUTHERN | Utilities | $1,643 | $15,743 | 1949 | 60 | 27 | 9 | 3 | 26.27 |
| 84 | FPLGROUP | Utilities | $1,615 | $15,643 | 1986 | 23 | 1000 | 100 | 10 | 9.6 |
| 85 | VIACOM | Consumer Discretionary | $1,611 | $13,619 | 2004 | 5 | 64 | 16 | 4 | 6.69 |
| 86 | PUBLICSERVICEENTERPRISEGROUP | Utilities | $1,592 | $12,406 | 1948 | 61 | 512 | 64 | 8 | 9.74 |
| 87 | QUALCOMM | Telecom | $1,592 | $10,416 | 1991 | 18 | 1 | 1 | 1 | 3.63 |
| 88 | AFLAC | Financials | $1,497 | $18,254 | 1974 | 35 | 0 | 0 | 0 | 0 |
| 89 | NIKE | Consumer Discretionary | $1,487 | $19,176 | 1990 | 19 | 27 | 9 | 3 | 58.57 |
| 90 | TEXASINSTRUMENTS | Materials | $1,470 | $10,427 | 1953 | 56 | 343 | 49 | 7 | 21.7 |
| 91 | NATIONALOILWELLVARCO | Energy | $1,469 | $12,712 | 1996 | 13 | 8 | 4 | 2 | 3.58 |
| 92 | MARATHONOIL | Energy | $1,463 | $49,403 | 1965 | 44 | 6859 | 361 | 19 | 1.27 |
| 93 | MASTERCARD | Financials | $1,463 | $5,099 | 2006 | 3 | 27 | 9 | 3 | 20.14 |
| 94 | DELL | Information Technology | $1,433 | $52,902 | 1988 | 21 | 125 | 25 | 5 | 13.33 |
| 95 | AMERICANELECTRICPOWER | Energy | $1,357 | $13,489 | 1949 | 60 | 216 | 36 | 6 | 0.69 |
| 96 | MORGANSTANLEY | Financials | $1,346 | $31,515 | 1986 | 23 | 343 | 49 | 7 | 23.04 |
| 97 | AUTOMATICDATAPROCESSING | Consumer Discretionary | $1,333 | $8,867 | 1967 | 42 | 125 | 25 | 5 | 31.46 |
| 98 | BOEING | Industrials | $1,312 | $68,281 | 1934 | 75 | 1728 | 144 | 12 | 4.2 |
| 99 | GENERALMILLS | Consumer Staples | $1,304 | $14,691 | 1928 | 81 | 1728 | 144 | 12 | 22.18 |
| 100 | CIGNA | HealthCare | $1,302 | $18,414 | 1982 | 27 | 216 | 36 | 6 | 9.13 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 101 | NEWMONTMINING | Materials | $1,297 | $7,737 | 1940 | 69 | 27 | 9 | 3 | 2.82 |
| 102 | DOMINIONRESOURCES | Utilities | $1,287 | $15,131 | 1983 | 26 | 0 | 0 | 0 | 0 |
| 103 | MEDCOHEALTHSOLUTIONS | HealthCare | $1,280 | $59,804 | 2003 | 6 | 64 | 16 | 4 | 6.89 |
| 104 | AETNA | HealthCare | $1,277 | $34,764 | 1968 | 41 | 1000 | 100 | 10 | 52.78 |
| 105 | DISCOVERFINANCIALSERVICES | Financials | $1,276 | $7,986 | 2007 | 2 | 216 | 36 | 6 | 14.12 |
| 106 | PRAXAIR | Materials | $1,254 | $8,956 | 1992 | 17 | 125 | 25 | 5 | 25.4 |
| 107 | BECTONDICKINSON | Consumer Staples | $1,232 | $7,217 | 1963 | 46 | 125 | 25 | 5 | 31.61 |
| 108 | ENTERGY | Utilities | $1,231 | $10,746 | 1949 | 60 | 512 | 64 | 8 | 11.96 |
| 109 | PG&ECORP | Utilities | $1,220 | $13,399 | 1919 | 90 | 1 | 1 | 1 | 3.63 |
| 110 | TJX | Consumer Staples | $1,214 | $20,288 | 1987 | 22 | 8 | 4 | 2 | 5.62 |
| 111 | KELLOGG | Consumer Staples | $1,212 | $12,575 | 1959 | 50 | 512 | 64 | 8 | 37.34 |
| 112 | PUBLIXSUPERMARKETS | Consumer Staples | $1,161 | $24,515 | 1974 | 35 | 1 | 1 | 1 | 3.32 |
| 113 | CSX | Industrials | $1,152 | $9,041 | 1980 | 29 | 125 | 25 | 5 | 22.79 |
| 114 | DANAHER | Consumer Staples | $1,152 | $11,185 | 1969 | 40 | 0 | 0 | 0 | 0 |
| 115 | CARDINALHEALTH | Consumer Staples | $1,152 | $99,613 | 1994 | 15 | 512 | 64 | 8 | 35.77 |
| 116 | HALLIBURTON | Energy | $1,145 | $14,675 | 1948 | 61 | 512 | 64 | 8 | 14.47 |
| 117 | SEMPRAENERGY | Utilities | $1,119 | $8,106 | 1998 | 11 | 512 | 64 | 8 | 18.56 |
| 118 | COMPUTERSCIENCES | Information Technology | $1,115 | $16,740 | 1968 | 41 | 1 | 1 | 1 | 6.62 |
| 119 | STRYKER | Consumer Staples | $1,107 | $6,723 | 1997 | 12 | 27 | 9 | 3 | 27.42 |
| 120 | GAP | Consumer Staples | $1,102 | $14,197 | 1976 | 33 | 343 | 49 | 7 | 41.28 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 121 | EMC | Consumer Staples | $1,088 | $14,026 | 2006 | 3 | 0 | 0 | 0 | 0 |
| 122 | COSTCOWHOLESALE | Consumer Staples | $1,086 | $71,422 | 1985 | 24 | 1 | 1 | 1 | 10.17 |
| 123 | DUKEENERGY | Utilities | $1,075 | $12,731 | 1961 | 48 | 216 | 36 | 6 | 26.5 |
| 124 | YUMBRANDS | Consumer Staples | $1,071 | $10,836 | 1997 | 12 | 343 | 49 | 7 | 5.14 |
| 125 | TIMEWARNERCABLE | Telecom | $1,070 | $17,868 | 2009 | 0 | 1331 | 121 | 11 | 3.9 |
| 126 | PROGRESSIVE | Financials | $1,058 | $14,564 | 1971 | 38 | 1000 | 100 | 10 | 22.42 |
| 127 | SYSCO | Consumer Staples | $1,056 | $36,853 | 1970 | 39 | 27 | 9 | 3 | 44.96 |
| 128 | HCA | HealthCare | $1,054 | $30,052 | 1990 | 19 | 1 | 1 | 1 | 10.74 |
| 129 | PRECISIONCASTPARTS | Industrials | $1,045 | $6,914 | 1989 | 20 | 125 | 25 | 5 | 0.03 |
| 130 | HUMANA | HealthCare | $1,040 | $30,960 | 1971 | 38 | 8 | 4 | 2 | 21.59 |
| 131 | NORFOLKSOUTHERN | Industrials | $1,034 | $7,969 | 1982 | 27 | 1 | 1 | 1 | 0.57 |
| 132 | LIBERTYMUTUALINSURANCEGROUP | Financials | $1,023 | $31,094 | 1999 | 10 | 729 | 81 | 9 | 23.25 |
| 133 | FIRSTENERGY | Utilities | $1,006 | $12,967 | 1946 | 63 | 8 | 4 | 2 | 9.71 |
| 134 | BESTBUY | Consumer Staples | $1,003 | $45,015 | 1987 | 22 | 1 | 1 | 1 | 16.85 |
| 135 | WASTEMANAGEMENT | Industrials | $994 | $11,791 | 1993 | 16 | 343 | 49 | 7 | 30.56 |
| 136 | KOHLS | Consumer Discretionary | $991 | $17,178 | 1992 | 17 | 64 | 16 | 4 | 2.04 |
| 137 | CONAGRAFOODS | Consumer Staples | $978 | $12,981 | 1973 | 36 | 1 | 1 | 1 | 1.79 |
| 138 | BIOGENIDEC | HealthCare | $970 | $4,377 | 1990 | 19 | 1 | 1 | 1 | 7.46 |
| 139 | REYNOLDSAMERICAN | Materials | $962 | $8,419 | 2004 | 5 | 27 | 9 | 3 | 12.42 |
| 140 | ILLINOISTOOLWORKS | Industrials | $947 | $13,904 | 1973 | 36 | 1728 | 144 | 12 | 9.6 |
| 141 | DIRECTVGROUP | Telecom | $942 | $21,565 | 2003 | 6 | 125 | 25 | 5 | 11.2 |
| 142 | NRGENERGY | Energy | $942 | $8,952 | 1993 | 16 | 64 | 16 | 4 | 39.47 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 143 | HJHEINZ | Consumer Staples | $923 | $10,148 | 1946 | 63 | 3375 | 225 | 15 | 27.77 |
| 144 | AMAZONCOM | Information Technology | $902 | $24,509 | 1997 | 12 | 8 | 4 | 2 | 12.49 |
| 145 | L3COMMUNICATIONS | Industrials | $901 | $15,615 | 1998 | 11 | 1 | 1 | 1 | 13.41 |
| 146 | FRANKLINRESOURCES | Financials | $897 | $4,194 | 1986 | 23 | 27 | 9 | 3 | 29.53 |
| 147 | CATERPILLAR | Industrials | $895 | $32,396 | 1929 | 80 | 4913 | 289 | 17 | 13.21 |
| 148 | CAPITALONEFINANCIAL | Financials | $884 | $15,980 | 1994 | 15 | 216 | 36 | 6 | 6.84 |
| 149 | BLACKROCK | Financials | $875 | $4,699 | 1999 | 10 | 64 | 16 | 4 | 14.55 |
| 150 | DEERE | Industrials | $874 | $23,112 | 1933 | 76 | 4096 | 256 | 16 | 9.6 |
| 151 | CONSOLIDATEDEDISON | Utilities | $868 | $13,032 | 1948 | 61 | 125 | 25 | 5 | 20.13 |
| 152 | NORTHERNTRUSTCORP | Financials | $864 | $4,193 | 1963 | 46 | 2197 | 169 | 13 | 4.74 |
| 153 | ALLSTATE | Financials | $854 | $32,013 | 1993 | 16 | 1728 | 144 | 12 | 45.47 |
| 154 | BB&TCORP | Financials | $853 | $10,818 | 1997 | 12 | 0 | 0 | 0 | 0 |
| 155 | UNUMGROUP | Financials | $853 | $10,091 | 1986 | 23 | 27 | 9 | 3 | 28.48 |
| 156 | THERMOFISHERSCIENTIFIC | Consumer Staples | $850 | $10,110 | 1980 | 29 | 8 | 4 | 2 | 5.25 |
| 157 | EDISONINTERNATIONAL | Utilities | $849 | $12,361 | 1926 | 83 | 343 | 49 | 7 | 12.82 |
| 158 | WESTERNUNION | Financials | $849 | $5,084 | 2006 | 3 | 512 | 64 | 8 | 8.21 |
| 159 | SPECTRAENERGY | Utilities | $848 | $4,725 | 2006 | 3 | 64 | 16 | 4 | 41.82 |
| 160 | MURPHYOIL | Energy | $838 | $19,138 | 1961 | 48 | 1 | 1 | 1 | 7.46 |
| 161 | HARRAHSENTERTAINMENT | Consumer Discretionary | $828 | $8,907 | 1990 | 19 | 125 | 25 | 5 | 7.35 |
| 162 | EXPRESSSCRIPTS | HealthCare | $828 | $24,749 | 1992 | 17 | 8 | 4 | 2 | 24.58 |
| 163 | MCKESSON | Consumer Staples | $823 | $106,632 | 1994 | 15 | 125 | 25 | 5 | 39.54 |
| 164 | OMNICOMGROUP | Consumer Discretionary | $793 | $11,721 | 1990 | 19 | 125 | 25 | 5 | 7.81 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 165 | CHARLESSCHWAB | Financials | $787 | $4,414 | 2001 | 8 | 216 | 36 | 6 | 16.41 |
| 166 | STJUDEMEDICAL | Consumer Staples | $777 | $4,681 | 1996 | 13 | 1 | 1 | 1 | 11.89 |
| 167 | STATEFARMINSURANCECOS | Financials | $767 | $61,480 | 1997 | 12 | 216 | 36 | 6 | 6.4 |
| 168 | PROGRESSENERGY | Utilities | $757 | $9,885 | 2000 | 9 | 64 | 16 | 4 | 37.29 |
| 169 | AON | Financials | $747 | $7,595 | 1980 | 29 | 2197 | 169 | 13 | 19.03 |
| 170 | HESS | Energy | $740 | $29,569 | 2006 | 3 | 125 | 25 | 5 | 53.44 |
| 171 | STAPLES | Consumer Staples | $739 | $24,276 | 1989 | 20 | 216 | 36 | 6 | 10.5 |
| 172 | FIFTHTHIRDBANCORP | Financials | $737 | $9,450 | 1980 | 29 | 8 | 4 | 2 | 15.91 |
| 173 | CAMPBELLSOUP | Consumer Staples | $736 | $7,586 | 1954 | 55 | 27 | 9 | 3 | 19.37 |
| 174 | COCACOLAENTERPRISES | Consumer Staples | $731 | $21,645 | 1985 | 24 | 216 | 36 | 6 | 7.13 |
| 175 | MCGRAWHILL | Consumer Staples | $731 | $5,952 | 1929 | 80 | 216 | 36 | 6 | 53.1 |
| 176 | QUESTDIAGNOSTICS | HealthCare | $729 | $7,455 | 1996 | 13 | 8 | 4 | 2 | 87.14 |
| 177 | AMERIPRISEFINANCIAL | Financials | $722 | $7,946 | 2005 | 4 | 0 | 0 | 0 | 0 |
| 178 | NATIONWIDE | Financials | $716 | $20,751 | 1985 | 24 | 0 | 0 | 0 | 0 |
| 179 | CA | Information Technology | $694 | $4,271 | 1980 | 29 | 1 | 1 | 1 | 3.63 |
| 180 | FLUOR | Materials | $685 | $21,990 | 2000 | 9 | 512 | 64 | 8 | 9.48 |
| 181 | NEWYORKLIFEINSURANCE | Financials | $683 | $34,014 | 1998 | 11 | 512 | 64 | 8 | 38.86 |
| 182 | XCELENERGY | Utilities | $681 | $9,644 | 1993 | 16 | 27 | 9 | 3 | 0.9 |
| 183 | INTERNATIONALPAPER | Consumer Discretionary | $663 | $23,366 | 1941 | 68 | 216 | 36 | 6 | 12.49 |
| 184 | QWESTCOMMUNICATIONS | Telecom | $662 | $12,311 | 2000 | 9 | 1000 | 100 | 10 | 11.36 |
| 185 | AES | Energy | $658 | $14,690 | 1996 | 13 | 125 | 25 | 5 | 40.47 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 186 | AUTOZONE | Consumer Staples | $657 | $6,817 | 1991 | 18 | 125 | 25 | 5 | 32.88 |
| 187 | DOWCHEMICAL | Materials | $648 | $44,945 | 1947 | 62 | 1331 | 121 | 11 | 41.67 |
| 188 | CENTURYTEL | Telecom | $647 | $4,974 | 1978 | 31 | 0 | 0 | 0 | 0 |
| 189 | ITT | Industrials | $644 | $10,905 | 1968 | 41 | 729 | 81 | 9 | 1.04 |
| 190 | DISHNETWORK | Telecom | $636 | $11,664 | 1995 | 14 | 0 | 0 | 0 | 0 |
| 191 | AIRPRODUCTS&CHEMICALS | Materials | $631 | $8,381 | 1961 | 48 | 64 | 16 | 4 | 37.09 |
| 192 | AVONPRODUCTS | Consumer Staples | $626 | $10,383 | 1964 | 45 | 343 | 49 | 7 | 0.05 |
| 193 | PRINCIPALFINANCIAL | Financials | $623 | $8,849 | 1992 | 17 | 8 | 4 | 2 | 6.03 |
| 194 | ALLERGAN | HealthCare | $621 | $4,504 | 1989 | 20 | 8 | 4 | 2 | 8.03 |
| 195 | AMEREN | Utilities | $612 | $7,090 | 1952 | 57 | 27 | 9 | 3 | 14.65 |
| 196 | PEPSIBOTTLING | Consumer Staples | $612 | $13,219 | 1997 | 12 | 250047 | 3969 | 63 | 3.85 |
| 197 | YAHOO | Information Technology | $598 | $6,460 | 1996 | 13 | 64 | 16 | 4 | 23.63 |
| 198 | GOODRICH | Industrials | $597 | $6,686 | 1912 | 97 | 729 | 81 | 9 | 5.49 |
| 199 | ROCKWELLCOLLINS | Industrials | $594 | $4,470 | 2001 | 8 | 1 | 1 | 1 | 3.06 |
| 200 | PLAINSALLAMERICANPIPELINE | Utilities | $579 | $18,520 | 1998 | 11 | 1 | 1 | 1 | 3.61 |
| 201 | LOEWS | Financials | $564 | $14,123 | 1959 | 50 | 125 | 25 | 5 | 30.91 |
| 202 | DRPEPPERSNAPPLEGROUP | Consumer Staples | $555 | $5,531 | 2008 | 1 | 27 | 9 | 3 | 23.83 |
| 203 | EOGRESOURCES | Materials | $547 | $4,787 | 1989 | 20 | 1 | 1 | 1 | 3.63 |
| 204 | LABORATORYCORPOFAMERICA | HealthCare | $543 | $4,695 | 1991 | 18 | 8 | 4 | 2 | 3.93 |
| 205 | PETERKIEWITSONS | Materials | $540 | $9,985 | 1997 | 12 | 1 | 1 | 1 | 17.36 |
| 206 | CONSOLENERGY | Materials | $540 | $4,622 | 1999 | 10 | 27 | 9 | 3 | 76.9 |
| 207 | CLOROX | Consumer Staples | $537 | $5,450 | 1968 | 41 | 216 | 36 | 6 | 4.35 |
| 208 | DTEENERGY | Utilities | $532 | $8,014 | 1949 | 60 | 125 | 25 | 5 | 47.27 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 209 | MATTEL | Consumer Discretionary | $529 | $5,431 | 1976 | 33 | 125 | 25 | 5 | 16.17 |
| 210 | AMERICANFINANCIALGROUP | Financials | $519 | $4,321 | 2004 | 5 | 0 | 0 | 0 | 0 |
| 211 | PARKERHANNIFIN | Industrials | $509 | $10,309 | 1964 | 45 | 1 | 1 | 1 | 2.34 |
| 212 | AMERISOURCEBERGEN | Consumer Staples | $503 | $71,789 | 2007 | 2 | 64 | 16 | 4 | 53.97 |
| 213 | LUBRIZOL | Materials | $501 | $4,586 | 1966 | 43 | 1 | 1 | 1 | 9.52 |
| 214 | SAIC | Information Technology | $497 | $10,847 | 1987 | 22 | 512 | 64 | 8 | 17.84 |
| 215 | KINDERMORGAN | Utilities | $496 | $7,185 | 1992 | 17 | 0 | 0 | 0 | 0 |
| 216 | REPUBLICSERVICES | Industrials | $495 | $8,199 | 1998 | 11 | 27 | 9 | 3 | 53.86 |
| 217 | CELANESE | Materials | $488 | $5,082 | 2005 | 4 | 64 | 16 | 4 | 32.8 |
| 218 | H&RBLOCK | Financials | $486 | $4,213 | 1969 | 40 | 0 | 0 | 0 | 0 |
| 219 | XEROX | Consumer Staples | $485 | $15,179 | 1976 | 33 | 4096 | 256 | 16 | 9.21 |
| 220 | FISERV | Financials | $476 | $4,224 | 1986 | 23 | 8 | 4 | 2 | 73.49 |
| 221 | CAMERONINTERNATIONAL | Energy | $476 | $5,223 | 1995 | 14 | 8 | 4 | 2 | 5.63 |
| 222 | WESTERNDIGITAL | Information Technology | $470 | $7,453 | 1972 | 37 | 0 | 0 | 0 | 0 |
| 223 | VF | Consumer Discretionary | $461 | $7,220 | 1976 | 33 | 343 | 49 | 7 | 10.15 |
| 224 | PEABODYENERGY | Materials | $448 | $6,314 | 2001 | 8 | 512 | 64 | 8 | 30.45 |
| 225 | LIMITEDBRANDS | Consumer Staples | $448 | $8,633 | 1971 | 38 | 64 | 16 | 4 | 5.88 |
| 226 | ROSSSTORES | Consumer Staples | $443 | $7,184 | 1985 | 24 | 0 | 0 | 0 | 0 |
| 227 | ENERGYTRANSFEREQUITY | Utilities | $443 | $5,417 | 1996 | 13 | 8 | 4 | 2 | 4.67 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 228 | NORDSTROM | Consumer Discretionary | $441 | $8,627 | 1999 | 10 | 343 | 49 | 7 | 15.11 |
| 229 | HERSHEY | Consumer Staples | $436 | $5,299 | 1927 | 82 | 64 | 16 | 4 | 8 |
| 230 | SHERWINWILLIAMS | Materials | $436 | $7,094 | 1964 | 45 | 64 | 16 | 4 | 17.47 |
| 231 | PACIFICLIFE | Financials | $434 | $5,211 | 1996 | 13 | 1 | 1 | 1 | 12 |
| 232 | ASSURANT | Financials | $431 | $8,701 | 2004 | 5 | 8 | 4 | 2 | 24.69 |
| 233 | WWGRAINGER | Consumer Staples | $431 | $6,222 | 1975 | 34 | 27 | 9 | 3 | 5.12 |
| 234 | CUMMINS | Industrials | $428 | $10,800 | 1964 | 45 | 729 | 81 | 9 | 3.74 |
| 235 | FLOWSERVE | Industrials | $428 | $4,365 | 1997 | 12 | 27 | 9 | 3 | 10.25 |
| 236 | BEDBATH&BEYOND | Consumer Staples | $425 | $7,208 | 1992 | 17 | 0 | 0 | 0 | 0 |
| 237 | PITNEYBOWES | Information Technology | $423 | $5,569 | 1950 | 59 | 343 | 49 | 7 | 13.83 |
| 238 | DAVITA | HealthCare | $423 | $6,109 | 1995 | 14 | 216 | 36 | 6 | 41.93 |
| 239 | GENZYME | HealthCare | $422 | $4,516 | 1986 | 23 | 125 | 25 | 5 | 13.52 |
| 240 | BAKERHUGHES | Energy | $421 | $9,664 | 1987 | 22 | 125 | 25 | 5 | 1.39 |
| 241 | ECOLAB | Materials | $417 | $5,901 | 1986 | 23 | 216 | 36 | 6 | 9.3 |
| 242 | REINSURANCEGROUPOFAMERICA | Financials | $407 | $7,067 | 1993 | 16 | 0 | 0 | 0 | 0 |
| 243 | PPL | Utilities | $407 | $7,585 | 1948 | 61 | 0 | 0 | 0 | 0 |
| 244 | POLORALPHLAUREN | Consumer Discretionary | $406 | $5,019 | 1997 | 12 | 8 | 4 | 2 | 11.55 |
| 245 | JACOBSENGINEERINGGROUP | Materials | $400 | $11,467 | 1989 | 20 | 125 | 25 | 5 | 9.07 |
| 246 | GENUINEPARTS | Consumer Staples | $400 | $10,058 | 1968 | 41 | 27 | 9 | 3 | 10.51 |
| 247 | STARBUCKS | Consumer Staples | $391 | $9,775 | 1992 | 17 | 27 | 9 | 3 | 0.61 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 248 | BALL | Consumer Discretionary | $388 | $7,345 | 1973 | 36 | 64 | 16 | 4 | 20.39 |
| 249 | EATON | Industrials | $383 | $11,873 | 1923 | 86 | 64 | 16 | 4 | 11.83 |
| 250 | WISCONSINENERGY | Utilities | $382 | $4,193 | 1947 | 62 | 125 | 25 | 5 | 22.72 |
| 251 | NIIHOLDINGS | Telecom | $382 | $4,398 | 2003 | 6 | 1 | 1 | 1 | 3.63 |
| 252 | CHS | Consumer Staples | $381 | $25,730 | 2001 | 8 | 0 | 0 | 0 | 0 |
| 253 | GAMESTOP | Consumer Staples | $377 | $9,078 | 2005 | 4 | 1 | 1 | 1 | 3.46 |
| 254 | ADVANCEDMICRODEVICES | Materials | $376 | $5,403 | 1979 | 30 | 64 | 16 | 4 | 20.3 |
| 255 | DARDENRESTAURANTS | Consumer Staples | $372 | $7,218 | 1995 | 14 | 125 | 25 | 5 | 3.01 |
| 256 | CENTERPOINTENERGY | Utilities | $372 | $8,281 | 1943 | 66 | 1 | 1 | 1 | 9.05 |
| 257 | SARALEE | Consumer Staples | $364 | $12,881 | 1946 | 63 | 343 | 49 | 7 | 20.57 |
| 258 | FMCTECHNOLOGIES | Energy | $362 | $4,405 | 2001 | 8 | 64 | 16 | 4 | 25.41 |
| 259 | CHROBINSONWORLDWIDE | Industrials | $361 | $7,577 | 1997 | 12 | 1 | 1 | 1 | 28.75 |
| 260 | DOVER | Industrials | $356 | $5,831 | 1956 | 53 | 8 | 4 | 2 | 7.89 |
| 261 | GANNETT | Consumer Staples | $355 | $5,613 | 1969 | 40 | 27 | 9 | 3 | 2.04 |
| 262 | MACYS | Consumer Discretionary | $350 | $23,489 | 1992 | 17 | 64 | 16 | 4 | 38.69 |
| 263 | AFFILIATEDCOMPUTERSERVICES | Information Technology | $350 | $6,523 | 1994 | 15 | 2197 | 169 | 13 | 14.37 |
| 264 | SCANA | Utilities | $348 | $4,237 | 1946 | 63 | 1 | 1 | 1 | 3.63 |
| 265 | ENERGYFUTUREHOLDINGS | Energy | $344 | $9,546 | 1951 | 58 | 216 | 36 | 6 | 28.57 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 266 | HORMELFOODS | Consumer Staples | $343 | $6,534 | 1990 | 19 | 27 | 9 | 3 | 25.78 |
| 267 | DOLLARGENERAL | Consumer Discretionary | $339 | $11,796 | 2009 | 0 | 8 | 4 | 2 | 3.55 |
| 268 | PPGINDUSTRIES | Materials | $336 | $12,239 | 1945 | 64 | 1000 | 100 | 10 | 37 |
| 269 | CROWNHOLDINGS | Consumer Discretionary | $334 | $7,938 | 1929 | 80 | 8 | 4 | 2 | 49.73 |
| 270 | NORTHEASTUTILITIES | Utilities | $330 | $5,439 | 1967 | 42 | 0 | 0 | 0 | 0 |
| 271 | WHIRLPOOL | Information Technology | $328 | $17,099 | 1955 | 54 | 1728 | 144 | 12 | 17.61 |
| 272 | AUTOOWNERSINSURANCE | Financials | $327 | $5,017 | 1976 | 33 | 0 | 0 | 0 | 0 |
| 273 | SLM | Financials | $324 | $6,145 | 2006 | 3 | 27 | 9 | 3 | 13.73 |
| 274 | NORTHWESTERNMUTUAL | Financials | $321 | $21,603 | 2008 | 1 | 512 | 64 | 8 | 10.6 |
| 275 | DOLLARTREE | Consumer Staples | $321 | $5,231 | 1995 | 14 | 1 | 1 | 1 | 0.57 |
| 276 | NAVISTARINTERNATIONAL | Industrials | $320 | $11,569 | 2008 | 1 | 64 | 16 | 4 | 3.7 |
| 277 | ENBRIDGEENERGYPARTNERS | Utilities | $317 | $5,905 | 1991 | 18 | 0 | 0 | 0 | 0 |
| 278 | TOYSRUS | Consumer Staples | $312 | $13,568 | 1977 | 32 | 1 | 1 | 1 | 3.59 |
| 279 | HENRYSCHEIN | Consumer Staples | $311 | $6,546 | 1995 | 14 | 216 | 36 | 6 | 17.37 |
| 280 | DOMTAR | Consumer Discretionary | $310 | $5,465 | 2007 | 2 | 27 | 9 | 3 | 3.58 |
| 281 | WRBERKLEY | Financials | $309 | $4,431 | 2001 | 8 | 8 | 4 | 2 | 11.31 |
| 282 | OREILLYAUTOMOTIVE | Consumer Staples | $308 | $4,847 | 1993 | 16 | 1 | 1 | 1 | 2.09 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 283 | ONEOK | Utilities | $306 | $11,112 | 1954 | 55 | 1 | 1 | 1 | 3.63 |
| 284 | FAMILYDOLLARSTORES | Consumer Discretionary | $291 | $7,401 | 1979 | 30 | 1 | 1 | 1 | 3.63 |
| 285 | KBR | Materials | $290 | $12,105 | 2006 | 3 | 125 | 25 | 5 | 9.45 |
| 286 | CABLEVISIONSYSTEMS | Telecom | $286 | $7,773 | 1999 | 10 | 1 | 1 | 1 | 5.31 |
| 287 | NEWELLRUBBERMAID | Consumer Discretionary | $286 | $5,578 | 1972 | 37 | 2197 | 169 | 13 | 14.53 |
| 288 | WILLIAMS | Energy | $285 | $8,255 | 1967 | 42 | 64 | 16 | 4 | 44.15 |
| 289 | ADVANCEAUTOPARTS | Consumer Staples | $270 | $5,413 | 2001 | 8 | 8 | 4 | 2 | 24.29 |
| 290 | URS | Materials | $269 | $9,249 | 1984 | 25 | 125 | 25 | 5 | 38.59 |
| 291 | AIRGAS | Consumer Staples | $261 | $4,350 | 1971 | 38 | 64 | 16 | 4 | 6.26 |
| 292 | UNIVERSALHEALTHSERVICES | HealthCare | $260 | $5,202 | 1991 | 18 | 0 | 0 | 0 | 0 |
| 293 | UGI | Energy | $259 | $5,738 | 1978 | 31 | 1 | 1 | 1 | 28.8 |
| 294 | AMERICANFAMILYINSURANCEGROUP | Financials | $257 | $6,453 | 1973 | 36 | 0 | 0 | 0 | 0 |
| 295 | JCPENNEY | Consumer Discretionary | $251 | $17,556 | 1929 | 80 | 216 | 36 | 6 | 14.91 |
| 296 | SEALEDAIR | Consumer Discretionary | $244 | $4,243 | 1979 | 30 | 1 | 1 | 1 | 3.06 |
| 297 | COMMUNITYHEALTHSYSTEMS | HealthCare | $243 | $12,150 | 2000 | 9 | 1 | 1 | 1 | 14.51 |
| 298 | FORTUNEBRANDS | Consumer Discretionary | $243 | $6,205 | 1986 | 23 | 343 | 49 | 7 | 32.54 |
| 299 | COVENTRYHEALTHCARE | HealthCare | $242 | $13,993 | 2001 | 8 | 8 | 4 | 2 | 0.16 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 300 | DEANFOODS | Consumer Staples | $240 | $11,158 | 1997 | 12 | 27 | 9 | 3 | 5.05 |
| 301 | PEPCOHOLDINGS | Utilities | $235 | $9,259 | 2002 | 7 | 27 | 9 | 3 | 16.47 |
| 302 | SEARSHOLDINGS | Consumer Discretionary | $235 | $44,043 | 2005 | 4 | 8 | 4 | 2 | 8.16 |
| 303 | ICAHNENTERPRISES | Industrials | $234 | $7,865 | 1987 | 22 | 1 | 1 | 1 | 5.22 |
| 304 | MYLAN | HealthCare | $233 | $5,093 | 1983 | 26 | 0 | 0 | 0 | 0 |
| 305 | CMSENERGY | Utilities | $229 | $6,212 | 1947 | 62 | 0 | 0 | 0 | 0 |
| 306 | MARSH&MCLENNAN | Financials | $227 | $10,493 | 1969 | 40 | 64 | 16 | 4 | 14.25 |
| 307 | CBS | Consumer Discretionary | $227 | $13,015 | 1999 | 10 | 343 | 49 | 7 | 11.04 |
| 308 | MEADWESTVACO | Consumer Discretionary | $225 | $6,049 | 2002 | 7 | 512 | 64 | 8 | 56.96 |
| 309 | FIDELITYNATIONALFINANCIAL | Financials | $222 | $5,858 | 2005 | 4 | 1 | 1 | 1 | 6.81 |
| 310 | ROCKWELLAUTOMATION | Information Technology | $221 | $4,333 | 1956 | 53 | 125 | 25 | 5 | 19.43 |
| 311 | NYSEEURONEXT | Financials | $219 | $4,687 | 2007 | 2 | 8 | 4 | 2 | 12.68 |
| 312 | ESTÉELAUDER | Consumer Staples | $218 | $7,324 | 1995 | 14 | 343 | 49 | 7 | 41.34 |
| 313 | NISOURCE | Utilities | $218 | $6,653 | 1999 | 10 | 27 | 9 | 3 | 2.82 |
| 314 | OMNICARE | HealthCare | $212 | $6,243 | 1981 | 28 | 1 | 1 | 1 | 12.95 |
| 315 | LANDOLAKES | Consumer Staples | $209 | $10,409 | 2003 | 6 | 0 | 0 | 0 | 0 |
| 316 | RADIOSHACK | Consumer Staples | $205 | $4,276 | 1935 | 74 | 1 | 1 | 1 | 0.18 |
| 317 | ENTERPRISEGPHOLDINGS | Utilities | $204 | $25,511 | 2005 | 4 | 1 | 1 | 1 | 0.52 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 318 | INGRAMMICRO | Consumer Staples | $202 | $29,515 | 1996 | 13 | 216 | 36 | 6 | 3.64 |
| 319 | BIGLOTS | Consumer Staples | $200 | $4,727 | 1986 | 23 | 1 | 1 | 1 | 4.75 |
| 320 | FIRSTAMERICANCORP | Financials | $200 | $5,973 | 1972 | 37 | 0 | 0 | 0 | 0 |
| 321 | PETSMART | Consumer Staples | $198 | $5,336 | 1993 | 16 | 343 | 49 | 7 | 3.69 |
| 322 | AUTONATION | Industrials | $198 | $11,016 | 1997 | 12 | 27 | 9 | 3 | 65.26 |
| 323 | TELEPHONE&DATASYSTEMS | Telecom | $194 | $5,021 | 2002 | 7 | 0 | 0 | 0 | 0 |
| 324 | ATMOSENERGY | Utilities | $191 | $4,969 | 1988 | 21 | 0 | 0 | 0 | 0 |
| 325 | AECOMTECHNOLOGY | Materials | $190 | $6,192 | 2007 | 2 | 64 | 16 | 4 | 9.58 |
| 326 | UNISYS | Information Technology | $189 | $4,598 | 2009 | 0 | 8 | 4 | 2 | 21.37 |
| 327 | TENETHEALTHCARE | HealthCare | $187 | $9,215 | 1976 | 33 | 343 | 49 | 7 | 21.69 |
| 328 | PEPSIAMERICAS | Consumer Staples | $181 | $4,421 | 2001 | 8 | 175616 | 3136 | 56 | 5.28 |
| 329 | TECHDATA | Consumer Staples | $180 | $22,100 | 1986 | 23 | 8 | 4 | 2 | 0.08 |
| 330 | OWENSILLINOIS | Consumer Discretionary | $162 | $7,067 | 1991 | 18 | 125 | 25 | 5 | 6.12 |
| 331 | EMCORGROUP | Materials | $161 | $5,548 | 2000 | 9 | 0 | 0 | 0 | 0 |
| 332 | ALLIANTTECHSYSTEMS | Industrials | $155 | $4,583 | 1990 | 19 | 1 | 1 | 1 | 6.38 |
| 333 | AMERIGROUP | HealthCare | $149 | $5,188 | 2003 | 6 | 343 | 49 | 7 | 51.42 |
| 334 | CALPINE | Energy | $149 | $6,564 | 2008 | 1 | 8 | 4 | 2 | 29.49 |
| 335 | SMITHINTERNATIONAL | Energy | $149 | $8,219 | 1968 | 41 | 216 | 36 | 6 | 12.86 |
| 336 | RELIANCESTEEL&ALUMINUM | Consumer Staples | $148 | $5,318 | 1994 | 15 | 0 | 0 | 0 | 0 |
| 337 | WHOLEFOODSMARKET | Consumer Staples | $147 | $8,032 | 1992 | 17 | 8 | 4 | 2 | 27.76 |
| 338 | UNIVERSALAMERICAN | HealthCare | $140 | $4,964 | 1986 | 23 | 0 | 0 | 0 | 0 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 339 | HEALTHMANAGEMENTASSOCIATES | HealthCare | $138 | $4,687 | 1991 | 18 | 0 | 0 | 0 | 0 |
| 340 | TUTORPERINI | Materials | $137 | $5,152 | 2004 | 5 | 8 | 4 | 2 | 36.02 |
| 341 | EASTMANCHEMICAL | Materials | $136 | $5,047 | 1993 | 16 | 27 | 9 | 3 | 30.95 |
| 342 | AGCO | Industrials | $136 | $6,630 | 1992 | 17 | 27 | 9 | 3 | 5.77 |
| 343 | DICKSSPORTINGGOODS | Consumer Staples | $135 | $4,413 | 2002 | 7 | 8 | 4 | 2 | 0.2 |
| 344 | LEAR | Industrials | $133 | $9,740 | 1994 | 15 | 1 | 1 | 1 | 22.01 |
| 345 | BLACK&DECKER | Consumer Discretionary | $133 | $4,775 | 1966 | 43 | 729 | 81 | 9 | 30.55 |
| 346 | BJSWHOLESALECLUB | Consumer Staples | $132 | $10,187 | 1997 | 12 | 1 | 1 | 1 | 12.91 |
| 347 | JARDEN | Consumer Discretionary | $129 | $5,153 | 1997 | 12 | 1 | 1 | 1 | 14.51 |
| 348 | VISTEON | Industrials | $128 | $6,685 | 2000 | 9 | 27 | 9 | 3 | 26.53 |
| 349 | ARROWELECTRONICS | Consumer Staples | $124 | $14,684 | 1979 | 30 | 8 | 4 | 2 | 18.39 |
| 350 | CHARTERCOMMUNICATIONS | Telecom | $123 | $6,755 | 1999 | 10 | 0 | 0 | 0 | 0 |
| 351 | INTERPUBLICGROUP | Consumer Discretionary | $121 | $6,028 | 1971 | 38 | 64 | 16 | 4 | 19.49 |
| 352 | WORLDFUELSERVICES | Consumer Staples | $117 | $11,295 | 1990 | 19 | 0 | 0 | 0 | 0 |
| 353 | HUNTSMAN | Materials | $114 | $7,763 | 2005 | 4 | 125 | 25 | 5 | 24.31 |
| 354 | PACCAR | Industrials | $112 | $8,087 | 1976 | 33 | 125 | 25 | 5 | 13.43 |
| 355 | ERIEINSURANCEGROUP | Financials | $109 | $4,255 | 1995 | 14 | 0 | 0 | 0 | 0 |
| 356 | GENERALCABLE | Information Technology | $109 | $4,385 | 1997 | 12 | 1 | 1 | 1 | 19.43 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 357 | WESCOINTERNATIONAL | Consumer Staples | $105 | $4,624 | 1999 | 10 | 125 | 25 | 5 | 6.31 |
| 358 | OWENS&MINOR | Consumer Staples | $105 | $8,038 | 1988 | 21 | 216 | 36 | 6 | 29.53 |
| 359 | CH2MHILL | Materials | $104 | $5,499 | 2003 | 6 | 343 | 49 | 7 | 12.62 |
| 360 | UNITEDSTATIONERS | Consumer Staples | $101 | $4,710 | 1981 | 28 | 1 | 1 | 1 | 1.34 |
| 361 | SOUTHWESTAIRLINES | Industrials | $99 | $10,350 | 1971 | 38 | 8 | 4 | 2 | 0 |
| 362 | FEDEX | Consumer Discretionary | $98 | $35,497 | 1978 | 31 | 2744 | 196 | 14 | 42.17 |
| 363 | WASHINGTONPOST | Consumer Discretionary | $93 | $4,570 | 1971 | 38 | 512 | 64 | 8 | 10.77 |
| 364 | SYNNEX | Consumer Staples | $92 | $7,756 | 2003 | 6 | 0 | 0 | 0 | 0 |
| 365 | CASEYSGENERALSTORES | Consumer Staples | $86 | $4,252 | 1982 | 27 | 0 | 0 | 0 | 0 |
| 366 | CONSECO | Financials | $86 | $4,341 | 2003 | 6 | 64 | 16 | 4 | 4.3 |
| 367 | DOLEFOOD | Consumer Staples | $84 | $6,783 | 2009 | 0 | 1 | 1 | 1 | 3.63 |
| 368 | CENTENE | HealthCare | $84 | $4,248 | 2003 | 6 | 27 | 9 | 3 | 37.34 |
| 369 | GUARDIANLIFEINSCOOFAMERICA | Financials | $83 | $10,041 | 1997 | 12 | 0 | 0 | 0 | 0 |
| 370 | PENSKEAUTOMOTIVEGROUP | Industrials | $77 | $9,558 | 1994 | 15 | 8 | 4 | 2 | 9.4 |
| 371 | STARWOODHOTELS&RESORTS | Consumer Discretionary | $73 | $4,712 | 2006 | 3 | 512 | 64 | 8 | 25.49 |
| 372 | ASHLAND | Materials | $71 | $8,106 | 2005 | 4 | 729 | 81 | 9 | 24.45 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 373 | KROGER | Consumer Staples | $70 | $76,733 | 1976 | 33 | 1000 | 100 | 10 | 3.76 |
| 374 | DILLARDS | Consumer Discretionary | $69 | $6,227 | 1989 | 20 | 1 | 1 | 1 | 3.63 |
| 375 | BARNES&NOBLE | Consumer Staples | $67 | $5,596 | 1993 | 16 | 64 | 16 | 4 | 10.56 |
| 376 | BROADCOM | Materials | $65 | $4,490 | 1998 | 11 | 27 | 9 | 3 | 27.45 |
| 377 | OWENSCORNING | Consumer Discretionary | $64 | $4,803 | 2006 | 3 | 125 | 25 | 5 | 26 |
| 378 | RYDERSYSTEM | Industrials | $62 | $4,958 | 1960 | 49 | 512 | 64 | 8 | 12.04 |
| 379 | CARMAX | Industrials | $59 | $7,028 | 2002 | 7 | 27 | 9 | 3 | 28.44 |
| 380 | PANTRY | Consumer Staples | $59 | $5,472 | 1999 | 10 | 0 | 0 | 0 | 0 |
| 381 | TRWAUTOMOTIVEHOLDINGS | Industrials | $55 | $11,614 | 2004 | 5 | 27 | 9 | 3 | 35.31 |
| 382 | FOOTLOCKER | Consumer Staples | $48 | $4,854 | 2000 | 9 | 8 | 4 | 2 | 20.87 |
| 383 | COREMARKHOLDING | Consumer Staples | $47 | $5,016 | 2005 | 4 | 1 | 1 | 1 | 4.88 |
| 384 | KINDREDHEALTHCARE | HealthCare | $40 | $4,326 | 2004 | 5 | 27 | 9 | 3 | 0.91 |
| 385 | WELLCAREHEALTHPLANS | HealthCare | $40 | $6,878 | 2004 | 5 | 27 | 9 | 3 | 46.25 |
| 386 | WINNDIXIESTORES | Consumer Staples | $40 | $7,367 | 1994 | 15 | 1 | 1 | 1 | 0.03 |
| 387 | HARRIS | Telecom | $38 | $5,600 | 1955 | 54 | 512 | 64 | 8 | 3.76 |
| 388 | GRAYBARELECTRIC | Consumer Staples | $37 | $4,378 | 1974 | 35 | 0 | 0 | 0 | 0 |
| 389 | GROUP1AUTOMOTIVE | Industrials | $35 | $4,526 | 1997 | 12 | 8 | 4 | 2 | 15.15 |
| 390 | GLOBALPARTNERS | Energy | $34 | $5,818 | 2005 | 4 | 0 | 0 | 0 | 0 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 391 | CBRICHARDELLISGROUP | Consumer Discretionary | $33 | $4,166 | 2004 | 5 | 8 | 4 | 2 | 14.3 |
| 392 | SPX | Industrials | $32 | $4,936 | 1972 | 37 | 8 | 4 | 2 | 40.33 |
| 393 | SONICAUTOMOTIVE | Industrials | $32 | $6,350 | 1987 | 22 | 0 | 0 | 0 | 0 |
| 394 | INTERNATIONALASSETSHOLDING | Financials | $28 | $43,604 | 1995 | 14 | 0 | 0 | 0 | 0 |
| 395 | COMMERCIALMETALS | Materials | $21 | $6,883 | 1982 | 27 | 64 | 16 | 4 | 50.3 |
| 396 | HOLLY | Energy | $20 | $4,834 | 2004 | 5 | 0 | 0 | 0 | 0 |
| 397 | SHAWGROUP | Materials | $15 | $7,280 | 1986 | 23 | 1 | 1 | 1 | 21.98 |
| 398 | WESTERN&SOUTHERNFINANCIALGROUP | Financials | $14 | $5,014 | 2004 | 5 | 1 | 1 | 1 | 3.43 |
| 399 | AUTOLIV | Industrials | $10 | $5,121 | 1997 | 12 | 64 | 16 | 4 | 31.4 |
| 400 | SMURFITSTONECONTAINER | Consumer Discretionary | $8 | $5,574 | 1998 | 11 | 729 | 81 | 9 | 47.65 |
| 401 | SPECTRUMGROUPINTERNATIONAL | Consumer Discretionary | $7 | $4,293 | 1986 | 23 | 0 | 0 | 0 | 0 |
| 402 | NASHFINCH | Consumer Staples | $3 | $5,213 | 1985 | 24 | 8 | 4 | 2 | 30.63 |
| 403 | OFFICEMAX | Consumer Staples | $1 | $7,212 | 1994 | 15 | 1 | 1 | 1 | 0.03 |
| 404 | MOHAWKINDUSTRIES | Consumer Discretionary | -$6 | $5,344 | 1997 | 12 | 0 | 0 | 0 | 0 |
| 405 | ARAMARK | Consumer Discretionary | -$7 | $12,298 | 2001 | 8 | 0 | 0 | 0 | 0 |
| 406 | MANPOWER | Consumer Staples | -$9 | $16,039 | 1988 | 21 | 343 | 49 | 7 | 13.32 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 407 | MUTUALOFOMAHAINSURANCE | Financials | -$18 | $5,150 | 1984 | 25 | 1 | 1 | 1 | 5.39 |
| 408 | RRDONNELLEY&SONS | Consumer Staples | -$27 | $9,857 | 2001 | 8 | 64 | 16 | 4 | 23.93 |
| 409 | ANIXTERINTERNATIONAL | Consumer Staples | -$29 | $4,982 | 1989 | 20 | 125 | 25 | 5 | 7.64 |
| 410 | AGILENTTECHNOLOGIES | Consumer Staples | -$31 | $4,481 | 1999 | 10 | 64 | 16 | 4 | 9.44 |
| 411 | TEXTRON | Industrials | -$31 | $10,548 | 1947 | 62 | 8 | 4 | 2 | 3.19 |
| 412 | NCR | Information Technology | -$33 | $4,612 | 1996 | 13 | 27 | 9 | 3 | 4.06 |
| 413 | AVISBUDGETGROUP | Industrials | -$47 | $5,131 | 2006 | 3 | 64 | 16 | 4 | 16.08 |
| 414 | THRIVENTFINANCIALFORLUTHERANS | Financials | -$48 | $6,515 | 1997 | 12 | 0 | 0 | 0 | 0 |
| 415 | HEALTHNET | HealthCare | -$49 | $15,713 | 1994 | 15 | 8 | 4 | 2 | 2.5 |
| 416 | MOTOROLA | Telecom | -$51 | $22,063 | 1946 | 63 | 216 | 36 | 6 | 6.8 |
| 417 | HARLEYDAVIDSON | Consumer Discretionary | -$55 | $4,839 | 1987 | 22 | 125 | 25 | 5 | 19.81 |
| 418 | LIVENATIONENTERTAINMENT | Consumer Discretionary | -$60 | $4,232 | 2005 | 4 | 125 | 25 | 5 | 1.45 |
| 419 | INTEGRYSENERGYGROUP | Energy | -$71 | $7,500 | 1953 | 56 | 1 | 1 | 1 | 13.46 |
| 420 | TENNECO | Industrials | -$73 | $4,649 | 1987 | 22 | 64 | 16 | 4 | 39.09 |
| 421 | FRONTIEROIL | Energy | -$84 | $4,237 | 1981 | 28 | 0 | 0 | 0 | 0 |
| 422 | TRAVELCENTERSOFAMERICA | Consumer Staples | -$90 | $4,700 | 2007 | 2 | 0 | 0 | 0 | 0 |
| 423 | KELLYSERVICES | Consumer Staples | -$105 | $4,315 | 1972 | 37 | 1 | 1 | 1 | 11.53 |
| 424 | CONWAY | Industrials | -$108 | $4,269 | 2006 | 3 | 27 | 9 | 3 | 26.5 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 425 | MASSACHUSETTSMUTUALLIFEINSURANCE | Financials | -$115 | $25,424 | 1993 | 16 | 27 | 9 | 3 | 12.25 |
| 426 | MDURESOURCESGROUP | Materials | -$123 | $4,177 | 1948 | 61 | 0 | 0 | 0 | 0 |
| 427 | HERTZGLOBALHOLDINGS | Industrials | -$126 | $7,102 | 2006 | 3 | 0 | 0 | 0 | 0 |
| 428 | ANADARKOPETROLEUM | Materials | -$135 | $9,000 | 1986 | 23 | 216 | 36 | 6 | 9.05 |
| 429 | SANMINASCI | Materials | -$136 | $5,178 | 1993 | 16 | 8 | 4 | 2 | 42.44 |
| 430 | GREATATLANTIC&PACIFICTEA | Consumer Staples | -$140 | $9,516 | 1958 | 51 | 1 | 1 | 1 | 5.64 |
| 431 | TESORO | Energy | -$140 | $16,589 | 2004 | 5 | 8 | 4 | 2 | 55.84 |
| 432 | PILGRIMSPRIDE | Consumer Staples | -$152 | $7,114 | 1986 | 23 | 0 | 0 | 0 | 0 |
| 433 | MASCO | Consumer Staples | -$183 | $7,858 | 1962 | 47 | 216 | 36 | 6 | 29.69 |
| 434 | SMITHFIELDFOODS | Consumer Staples | -$190 | $14,191 | 1972 | 37 | 1 | 1 | 1 | 0.57 |
| 435 | USAIRWAYSGROUP | Industrials | -$205 | $10,458 | 2005 | 4 | 27 | 9 | 3 | 32.44 |
| 436 | EASTMANKODAK | Consumer Staples | -$210 | $7,606 | 1905 | 104 | 125 | 25 | 5 | 31.08 |
| 437 | HOSTHOTELS&RESORTS | Consumer Discretionary | -$252 | $4,216 | 1998 | 11 | 125 | 25 | 5 | 37.37 |
| 438 | CONTINENTALAIRLINES | Industrials | -$282 | $12,586 | 1993 | 16 | 5832 | 324 | 18 | 2.07 |
| 439 | APACHE | Materials | -$284 | $8,615 | 1969 | 40 | 0 | 0 | 0 | 0 |
| 440 | NUCOR | Materials | -$294 | $11,190 | 1972 | 37 | 343 | 49 | 7 | 33.47 |
| 441 | APPLIEDMATERIALS | Materials | -$305 | $5,014 | 1972 | 37 | 27 | 9 | 3 | 18 |
| 442 | SUNOCO | Energy | -$329 | $29,630 | 2002 | 7 | 512 | 64 | 8 | 3.2 |
| 443 | JOHNSONCONTROLS | Industrials | -$338 | $28,497 | 1965 | 44 | 27 | 9 | 3 | 8.3 |
| 444 | MARRIOTTINTERNATIONAL | Consumer Discretionary | -$346 | $10,908 | 1998 | 11 | 1000 | 100 | 10 | 5.06 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 445 | WESTERNREFINING | Energy | -$351 | $6,807 | 2006 | 3 | 0 | 0 | 0 | 0 |
| 446 | LASVEGASSANDS | Consumer Discretionary | -$355 | $4,563 | 2004 | 5 | 0 | 0 | 0 | 0 |
| 447 | GOODYEARTIRE&RUBBER | Industrials | -$375 | $16,301 | 1927 | 82 | 8 | 4 | 2 | 18.79 |
| 448 | TEREX | Industrials | -$398 | $5,205 | 1991 | 18 | 8 | 4 | 2 | 5.45 |
| 449 | LIBERTYGLOBAL | Telecom | -$412 | $11,110 | 2002 | 7 | 64 | 16 | 4 | 14.52 |
| 450 | DANAHOLDING | Industrials | -$431 | $5,228 | 2008 | 1 | 0 | 0 | 0 | 0 |
| 451 | TIAACREF | Financials | -$459 | $26,278 | 1997 | 12 | 1 | 1 | 1 | 5.85 |
| 452 | GENWORTHFINANCIAL | Financials | -$460 | $9,069 | 2004 | 5 | 27 | 9 | 3 | 1.9 |
| 453 | LINCOLNNATIONAL | Financials | -$485 | $9,072 | 1971 | 38 | 8 | 4 | 2 | 0 |
| 454 | TYSONFOODS | Consumer Staples | -$537 | $27,165 | 1997 | 12 | 0 | 0 | 0 | 0 |
| 455 | ELPASO | Utilities | -$539 | $4,631 | 1992 | 17 | 27 | 9 | 3 | 91.55 |
| 456 | WEYERHAEUSER | Consumer Discretionary | -$545 | $5,528 | 1963 | 46 | 27 | 9 | 3 | 4.86 |
| 457 | BLOCKBUSTER | Consumer Staples | -$558 | $4,162 | 1983 | 26 | 1 | 1 | 1 | 3.63 |
| 458 | VIRGINMEDIA | Telecom | -$560 | $6,014 | 2007 | 2 | 0 | 0 | 0 | 0 |
| 459 | OFFICEDEPOT | Consumer Staples | -$597 | $12,145 | 1991 | 18 | 512 | 64 | 8 | 19.7 |
| 460 | YRCWORLDWIDE | Industrials | -$622 | $5,283 | 1974 | 35 | 27 | 9 | 3 | 40.09 |
| 461 | UAL | Industrials | -$651 | $16,335 | 1976 | 33 | 6859 | 361 | 19 | 1.59 |
| 462 | AVERYDENNISON | Materials | -$747 | $5,953 | 1967 | 42 | 27 | 9 | 3 | 18.38 |
| 463 | HARTFORDFINANCIALSERVICES | Financials | -$887 | $24,701 | 1995 | 14 | 64 | 16 | 4 | 8.78 |
| 464 | BOSTONSCIENTIFIC | Consumer Staples | -$1,025 | $8,188 | 1992 | 17 | 125 | 25 | 5 | 26.89 |
| 465 | REGIONSFINANCIAL | Financials | -$1,031 | $9,087 | 2002 | 7 | 27 | 9 | 3 | 40.3 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 466 | BANKOFNEWYORKMELLONCORP | Financials | -$1,084 | $8,345 | 2007 | 2 | 1728 | 144 | 12 | 13.34 |
| 467 | FIRSTDATA | Financials | -$1,086 | $9,314 | 1992 | 17 | 0 | 0 | 0 | 0 |
| 468 | ELECTRONICARTS | Information Technology | -$1,088 | $4,212 | 1989 | 20 | 216 | 36 | 6 | 6.44 |
| 469 | SAFEWAY | Consumer Staples | -$1,098 | $40,851 | 1990 | 19 | 125 | 25 | 5 | 2.9 |
| 470 | OSHKOSH | Industrials | -$1,099 | $5,433 | 1985 | 24 | 64 | 16 | 4 | 35.22 |
| 471 | SUNGARDDATASYSTEMS | Financials | -$1,118 | $5,508 | 1986 | 23 | 0 | 0 | 0 | 0 |
| 472 | AVNET | Consumer Staples | -$1,123 | $16,230 | 1960 | 49 | 27 | 9 | 3 | 23.83 |
| 473 | ALCOA | Materials | -$1,151 | $18,745 | 1925 | 84 | 512 | 64 | 8 | 23.01 |
| 474 | JABILCIRCUIT | Materials | -$1,165 | $11,685 | 1993 | 16 | 27 | 9 | 3 | 0.8 |
| 475 | ARVINMERITOR | Industrials | -$1,212 | $4,617 | 1997 | 12 | 64 | 16 | 4 | 23.06 |
| 476 | DELTAAIRLINES | Industrials | -$1,237 | $28,063 | 1976 | 33 | 343 | 49 | 7 | 15.41 |
| 477 | MGMMIRAGE | Consumer Discretionary | -$1,292 | $5,979 | 1989 | 20 | 125 | 25 | 5 | 17.25 |
| 478 | KEYCORP | Financials | -$1,335 | $6,068 | 1992 | 17 | 125 | 25 | 5 | 22.68 |
| 479 | UNITEDSTATESSTEEL | Materials | -$1,401 | $11,048 | 1991 | 18 | 512 | 64 | 8 | 22.98 |
| 480 | AMR | Industrials | -$1,468 | $19,917 | 1999 | 10 | 54872 | 1444 | 38 | 10.01 |
| 481 | ABITIBIBOWATER | Consumer Discretionary | -$1,553 | $4,366 | 2007 | 2 | 8 | 4 | 2 | 9.64 |
| 482 | SUNTRUSTBANKS | Financials | -$1,564 | $10,420 | 1985 | 24 | 1000 | 100 | 10 | 4.77 |
| 483 | CITIGROUP | Financials | -$1,606 | $108,785 | 1987 | 22 | 2197 | 169 | 13 | 27.63 |
| 484 | MICRONTECHNOLOGY | Materials | -$1,835 | $4,803 | 1983 | 26 | 1 | 1 | 1 | 11.91 |
| 485 | STATESTREETCORP | Financials | -$1,881 | $9,362 | 1995 | 14 | 27 | 9 | 3 | 36.68 |
| 486 | VALEROENERGY | Energy | -$1,982 | $70,035 | 1980 | 29 | 8 | 4 | 2 | 23.71 |
| 487 | SUNMICROSYSTEMS | Information Technology | -$2,234 | $11,449 | 1985 | 24 | 3375 | 225 | 15 | 1.93 |
| **S/N** | **Names of Company** | **S&P Sector** | **Profits (Millions)** | **Revenues (Millions)** | **Year Listed** | **Age Since Listed** | **Interlocks\*Interlocks\*Interlocks** | **Interlocks\*Interlocks** | **Interlocks** | **Power (Bonachich's)** |
| 488 | METLIFE | Financials | -$2,246 | $41,098 | 2000 | 9 | 0 | 0 | 0 | 0 |
| 489 | SPRINTNEXTEL | Telecom | -$2,436 | $32,260 | 1963 | 46 | 343 | 49 | 7 | 46.83 |
| 490 | DEVONENERGY | Materials | -$2,479 | $8,960 | 2004 | 5 | 1 | 1 | 1 | 2.51 |
| 491 | SUPERVALU | Consumer Staples | -$2,855 | $44,564 | 1967 | 42 | 27 | 9 | 3 | 17.88 |
| 492 | RITEAID | Consumer Staples | -$2,915 | $26,290 | 1970 | 39 | 64 | 16 | 4 | 33.25 |
| 493 | NEWSCORP | Consumer Discretionary | -$3,378 | $30,423 | 1987 | 22 | 1 | 1 | 1 | 2.07 |
| 494 | CCMEDIAHOLDINGS | Consumer Discretionary | -$4,034 | $5,552 | 2005 | 4 | 2197 | 169 | 13 | 14.53 |
| 495 | CHESAPEAKEENERGY | Materials | -$5,830 | $7,702 | 1995 | 14 | 0 | 0 | 0 | 0 |
| 496 | SYMANTEC | Information Technology | -$6,729 | $6,150 | 1989 | 20 | 125 | 25 | 5 | 3.26 |
| 497 | GMAC | Financials | -$10,298 | $19,403 | 2004 | 5 | 0 | 0 | 0 | 0 |
| 498 | AMERICANINTERNATIONALGROUP | Financials | -$10,949 | $103,189 | 1994 | 15 | 1331 | 121 | 11 | 8.92 |
| 499 | FREDDIEMAC | Financials | -$21,553 | $37,614 | 1997 | 12 | 27 | 9 | 3 | 0.91 |
| 500 | FANNIEMAE | Financials | -$71,969 | $29,065 | 1968 | 41 | 125 | 25 | 5 | 29.82 |

1. SPSS® Text Analytics uses powerful natural language processing (NLP) technologies specifically designed for text and proven linguistics-based technologies that cut through the ambiguities of human language. [↑](#footnote-ref-2)
2. UCINET is a social network analysis program developed by [Steve Borgatti](http://www.steveborgatti.com), [Martin Everett](mailto:meverett61@yahoo.com) and [Lin Freeman](http://moreno.ss.uci.edu/). The program is distributed by [Analytic Technologies](http://www.analytictech.com). UCINET works in tandem with freeware program called NETDRAW for visualizing networks. NETDRAW is installed automatically with UCINET [↑](#footnote-ref-3)