

# **Study of Corporate Governance and Disclosure Practices: Old Economy versus New Economy Firms**

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*Abstract :* This research focuses on nature of industry and its impact on corporate governance and disclosure practices of firms. Nature of industry divides firms into two broad categories: old economy and new economy firms. Accordingly, this research studies the corporate governance and disclosure practices of firms listed in Indian stock market representing different sectors. The study has taken five sectors into consideration – Power, Oil & Gas, and Metal, along with Health Care and IT. These sectors are segregated into old economy (high capital intensity) and new economy (low capital intensity) sectors depending on nature of industry. This study aims to establish a relationship, if any, between capital intensity of firms and their corporate governance practices in Indian context. Research concludes that there is no difference between old economy firms and new economy firms with respect to corporate governance and disclosure practices. After thorough empirical research, the paper explains why Indian scenario is different from knowledge economy such as United States.

*Key Words:* Corporate Governance, Disclosure, Capital Intensity, Intangible Assets, Old Economy, New Economy

## *Introduction*

The main objective of the corporate governance is to protect long-term shareholder value along with the other stakeholders. Corporate governance is a very wide term, which covers a wide range of activities that relate to the way business of firm is directed and governed. It deals with the policies and practices that directly impact on the firm's performance, stewardship and its capacity to be accountable to its various stakeholders. Corporate governance is the system of relations between the shareholders, board of directors and management of a firm as defined by the corporate charter, by-laws, formal policy and rule of law.

The corporate business is an increasingly important engine for wealth creation worldwide, and how companies are run will influence welfare in society as a whole. In order to serve this wealth creating function, firms must operate within a framework that keeps them focused on their objectives and accountable for their actions. That is to say, they need to establish adequate and credible corporate governance arrangements. Management recognizes that there are economic benefits to be gained from a well-managed disclosure policy. A system of corporate governance needs a good level of disclosure and an adequate information to eliminate (or at least reduce) information asymmetries between all parties, making corporate insiders accountable for their actions (Madhani, 2014a).

Corporate governance and disclosure practices of firms are influenced by various variables such as board size, board independence, board committees, and ownership concentration, cross-listing of firms, CEO duality, auditor selection, firm characteristics (size, age, leverage, origin and types of firms in terms of ownership viz. public sector, private sector and foreign firms) and nature of industry. Mandatory financial reporting is claimed to be less informative in high technology industries which make larger investments in intangibles such as R&D, human capital and brand development (Collins et al., 1997; Francis and Schipper, 1999; Lev and Zarowin, 1999). Therefore, firms with less informative financial statements are likely to provide more voluntary disclosures (Tasker, 1998). Hence, new economy firms with larger investments in intangibles are likely to make more disclosure compare to old economy firms with larger investments in tangible assets. However, in current Indian context there is very little research on the influence of nature of industry such as old economy versus new economy on the corporate governance and disclosure practices of firms; hence, this research aims to contribute to the understanding of this relationship. This study focuses on corporate governance and disclosure practices of sample firms selected from old economy as well as new economy and listed in Bombay Stock Exchange (BSE). Old economy firms representing Power, Oil & Gas and Metal sectors are characterized by high capital intensity ratio (large investment in tangible assets) while new economy firms representing Health Care (Pharmaceuticals) and IT (Information Technology) are characterized by low capital intensity ratio (large investment in intangible or knowledge assets). By analyzing the impact of nature of industry (capital intensive firms versus knowledge intensive firms) on corporate governance and disclosure practices, this research identifies and tests the empirical evidence for such relationship.

### *Literature Review*

Corporate governance stands for responsible business management geared towards long-term value creation. Good corporate governance is a key driver of sustainable corporate growth and long-term competitive advantage (Madhani, 2007a). A good system of corporate governance will facilitate the resolution of corporate conflicts between minority and controlling shareholders, executives and shareholders, and between shareholders and stakeholders. Corporate governance typically protects investor from managers who instigate self-deal, theft of corporate assets as well as corruption (Dalton and Daily, 1999). The broader objectives of corporate governance are; to ensure shareholders value, to protect interest of shareholders and various other stakeholders including customers, suppliers, employees and society at large, to ensure full transparency and integrity in communication and to make available complete, accurate and clear disclosure to all concerned (Shukla, 2008).

Disclosure is an important component of corporate governance since it allows all stakeholders of firms to monitor performance of the firm. 'Good practices in corporate governance disclosure', a guidance issued by OECD (2006) also states that all material issues related to the corporate governance of a firm should be disclosed in a timely manner. Hence, disclosures have to be clear, concise and precise and governed by the substance over form principle. An effective system of governance practices should ensure compliance with applicable laws, standards, rules, rights, and duties of all interested parties, and further, should allow companies to avoid costly litigation, including those costs related to shareholder claims and other disputes resulting from fraud, conflicts of interest, corruption and bribery, and insider trading. According to Ho, et al., (2008), exhaustive disclosure by firms enabled investors to make better investment decisions.

Disclosure by firms can be categorized as mandatory disclosure and voluntary disclosure. Voluntary disclosure, also defined as information in excess of mandatory disclosure, has been receiving an increasing amount of attention from researchers in recent corporate governance and disclosure studies. Because of the inadequacy of mandatory disclosure by firms, the proactive action by firms such as voluntary disclosure provides investors with the necessary information to make more informed decisions (Madhani, 2007b).

According to Jensen and Meckling (1976) agency theory provides a framework that link disclosure behavior to firm-specific characteristics as corporate governance mechanisms are introduced to control the agency problem and ensure that managers act in the interests of shareholders. The impact of internal governance mechanisms on corporate disclosures may be complementary or substitutive. If it is complementary, agency theory predicts that a greater extent of disclosures is expected since the adoption of more governance mechanisms will strengthen the internal control of firms and provide an intensive monitoring mechanism for a firm to reduce opportunistic behaviors and information asymmetry (Knutson, 1992). In this situation, managers are not likely to withhold information for their own benefits under such an intensive monitoring environment, which lead to improvement in extent as well as quality of disclosure (Apostolou and Nanopoulos, 2009). On the other hand, if the relationship is substitutive, firms will not provide more disclosures for more governance mechanisms since one corporate governance mechanism may substitute another one. If information asymmetry in a firm can be reduced because of the existing internal monitoring packages, the need to deploy additional governance devices is smaller.

As Himmelberg et al., (1999) pointed out; firms facing large information asymmetry because of its characteristics may signal to the market their intent to protect investors better by adopting good corporate governance policies. This might be the case for new economy or knowledge intensive firms with relatively large intangible assets. The opacity in disclosure practices can contribute to

suspicious and unethical behavior leading to poor valuation of the firm (Madhani, 2007b). Therefore, knowledge intensive firms operating with higher proportions of intangible assets in their total asset base may find it optimal to adopt stricter corporate governance mechanisms to signal to investors that they intend to prevent the future misuse of these assets (Khanchel, 2007). Klapper and Love (2004), found support for this hypothesis using a capital intensity measure, and concluded that capital intensity is significantly negatively correlated with governance. They used fixed capital (i.e. property, plant and equipment) to total sales ratio to define capital intensity ratio. However, in the Indian context, such research has not been fully explored. Hence, the impact of nature of industry (in terms of old economy versus new economy) on corporate governance and disclosure practices is studied in this research.

#### *Assets Composition: Old Economy versus New Economy Firms*

Assets have been considered as the important factor in firm performance because assets determine the value of the firm. Balance sheets have been used to capture assets of the firm and firms use them as important tools to measure and communicate assets' value. Therefore, many firms work hard to maintain a good balance sheet as it influences the firm's perceived value. Firms also monitor changes in the balance sheet closely as any change in value will influence the decisions of various stakeholders (Loury, 2008). Since the industrial revolution, the value of old economy firms was primarily based on its tangible assets, which are represented on the balance sheet. Firms priced these tangible resources and linked them to all the measurement of the firm performance. In the past, this approach worked well for old economy firms because physical assets were considered the main factor and sometimes the only factor that provided value to firms.

In knowledge economy, the intangibles or knowledge assets provide value to the firm. While tangible assets have determined the wealth of the 20th century, the wealth of the 21st century resides in intangible assets (Garcia-Parra et al., 2009). Intangible assets take three basic forms: human capital, organizational capital, and relational capital (Madhani, 2008). Intangibles are typically described as non-monetary economic goods without physical substance (Berry, 2004). In the US, intangibles and market services may account for two-thirds of the gross domestic product (GDP), yet few of these assets appear on financial statements (Jhunjhunwala, 2009).

Traditionally, key resources of the firm were physical assets such as land and machinery or financial asset. However, in this knowledge era, intangible assets have been identified as key resources and source of competitive advantage (McGaughey, 2002). In the new economy, value creation of firms relies on the transformation from tangible assets to intangible assets as firms are likely to generate much of their value through differentiating themselves by using intangible assets such as

proprietary processes, brands, strong relationships and knowledge. (Nakamura, 2001). The drivers of value creation in modern competitive environments lie in a firm's intangible assets rather than its physical and financial capital as they underline future performance and growth. This resource is the main source of sustainable competitive advantage, and is rare, inimitable, and non-substitutable (Madhani, 2012).

As firms now become more knowledge and information-based, intangible assets will comprise a significant percentage of the overall value of businesses. Hence, today's business model in an era of new economy is increasingly dependent on the use of intangible resources that offer value for firms. Some 50-90 % of the value created by a firm in today's economy is estimated to come from the intellectual capital of firm rather than from the use and production of traditional material goods (Guthrie and Yongvanich, 2004). Intangible asset is becoming more important than the value of tangible assets. Intangible assets are developing into an unmatched resource for the creation of business wealth. Although, tangible assets such as buildings, facilities, and equipment are still the main elements of producing goods and services, its relative significance has diminished over time as the intangible assets comes to replace tangible assets (Martins and Alves, 2010). However, current accounting models do not capture the key factors of a firm's long-term value – their intangible resources (Wallman, 1995; Hedlin and Adolphson, 2000) – and fail to recognize a fuller range of intangibles.

It is argued that technology-based or knowledge-intensive industries will engage in more intellectual capital (IC) disclosure than industries that rely mainly on physical assets to be profitable. This relationship has been explained by stakeholder theory. Stakeholder theory purports that stakeholders have a right to be provided with information about how the company's activities affect them (Guthrie et al., 2004). When a firm's revenue and reputation derives from assets which are invisible in mandated disclosure, then stakeholder theory argues that such information should be conveyed to stakeholders (Whiting and Woodcock, 2011). To the most powerful stakeholders such as majority shareholders and lenders, disclosure of information can be through private meetings. However, less powerful shareholders do not have access to this direct information channel (Holland, 2001) and in order to satisfy those stakeholders' need for information, firms in knowledge-intensive or technology-based industries will engage in voluntary disclosures about their intellectual capital (Yau et al., 2009). Bozzolan et al., 2006 explicitly studied and compared intangible information disclosure in annual reports of "old economy" industries or "traditional firms" on the one hand with disclosure of firms operating in "new economy" or "knowledge-intensive" industries on the other. The purpose of such comparisons is to test the hypothesis that "knowledge intensive" firms report more extensively on intangibles than traditional firms.

An et al., (2011) studied effect of industry types on IC disclosure for Chinese firms between the two industry clusters i.e. service group (22 firms) and industry group (27 firms) by studying annual report of firms. It was found that nature of business did not have a significant influence on IC reporting practices of Chinese mainland firms. The results were quite surprising since it was expected that service group firms (with fewer tangible assets) should have a significantly greater disposition to report IC in order to keep stakeholders informed regarding their value creating activities. Intangible assets of firms (e.g. licenses, patents, brands, customer knowledge) have received an increasing level of attention in both scholarly research and management practice. To date, the growing economic relevance of intangibles has hardly been reflected in mandatory rules accepted by international reporting standards. Hence, quite a number of firms voluntarily publish information on their intangible asset stocks (Gerpott et al., 2008).

### ***Capital Intensity Measure:***

#### ***A Major Differentiator for Old Economy versus New Economy***

Most firms need to invest capital in their revenue generating process to make revenue. Capital refers to the plant and equipment used in the production function of a business, as well as its stock of financial assets (Link and Boger, 1999). Capital is the term used to refer to the amount invested in plant, property, equipment, inventory and other physical assets (Samuelson and Nordhaus, 2004). Capital expenditure represents the funds used to acquire or upgrade fixed assets other than those associated with acquisitions (Koller et al., 2010). Old economy firms typically go through capital cycles – periods of increased capital expenditure followed by periods of lower capital expenditure according to business cycle. New economy firms can produce a unit of sales revenue with the least amount of capital expenditure through the capital cycle as they are probably more reliant on intangible assets for their competitive advantage.

Capital intensive industry refers to that old economy industry, which requires substantial amount of capital for the production of goods. Old economy industry requires high value investments in capital assets because of the specific industrial structure and type. In the traditional sectors of economy such as Power, Oil & Gas and Metal etc., physical capital plays an essential role. These old economy sectors are basically capital intensive sectors, which require large capital investment for starting up the business and to run the business as well. Capital intensive industries involve high level of fixed cost as its major project costs result from investments in plant, equipment, machinery, or other expensive capital goods. Hence, for old economy firms capital intensity ratio is a measure of the relative importance of fixed asset in the firm's output.

However, in the new economy sector such as IT and pharmaceuticals, physical capital is having subsidiary role. As in the case of IT industry the physical capital

intensity is very low while human capital intensity (knowledge assets) is very high. IT industry is less capital-intensive and more knowledge intensive as the low physical capital intensity and high human capital intensity is major feature of this industry. Similarly pharmaceutical firms depend much on the intangible (knowledge based) assets. A typical pharmaceutical product development team is composed of members with specialization in medicine, pharmacology, chemistry, life sciences, biopharmaceutics and toxicology.

Capital intensity is an important consideration for old economy firms, because capital intensive firms typically rely more on physical, as opposed to intangible assets as a source of income. The amount of capital expended to produce a unit of sales revenue gives an indication of the level of capital intensity of a firm. The ratio of fixed assets to net sales is called the capital intensity ratio and is reciprocal of the asset turnover ratio.

Capital Intensity Ratio =  $1 / \text{Asset Turnover Ratio}$

=  $\text{Total Fixed Asset} / \text{Total Sales}$

This ratio tells us the amount of assets needed by the firm to generate a unit of sales revenue. The higher the ratio, the more physical asset the firm needs to generate sales - the more capital intensive the firm and subsequently less significant role of intangibles. A business that requires a large amount of capital investment in physical assets to generate revenue can be labeled as being more capital intensive (Parker et al., 2011) whereas less capital intensive firms typically do not rely as much on physical assets in its business model. These firms rather depend on their intangible assets as sources of income and belong to new economy.

A firm that relies heavily on physical assets and requires continuous capital expenditure in order to sustain its competitive advantage is unlikely to outperform over the long term (Elmasry, 2004). A high capital-intensity ratio would mean that the firm relies heavily on the competitive advantage of its physical capital in order to earn a return. A firm that relies on its physical assets for its competitive advantage is more exposed to the risk of duplication by competitors, invite incursion from rivals and as such leads to excess capacity and erosion of returns (Porter, 1979).

In the other hand, firms that have a proclivity to intangible assets, tend to have lower capital intensities. Such firms require less capital investment to sustain their competitive advantage. Hence, they rather enjoy a competitive advantage by virtue of their intangible assets, and are more likely to earn consistent excess returns over the long term (Barney, 1991). Intangible assets are more difficult to replicate than physical assets. New economy firms rely more on their intangible assets, have

lower capital intensity, and are expected to achieve and maintain superior returns on capital and increase shareholder wealth over time. The consistently low capital intensity of a firm should reflect the fact that the firm does not rely on capital intensive physical assets to drive revenues, but rather has a sustainable competitive advantage arising from its intangible assets. Asset tangibility refers to the capital intensity ratio and firms with high capital intensity pose lower risk as tangible assets make better collateral.

### ***Assets Composition and Corporate Governance Practices***

The bulk of corporate governance research aims to understand the consequences of the separation of ownership from control on firms' performance. According to La Porta et al., (2000), corporate governance is, to a large extent, a set of mechanisms through which outside investors protect themselves against expropriation by the insiders. Agency problems play a central role in the emergence of corporate governance structures as such problems arise because contracts are not costless written and enforced (Fama and Jensen, 1983) and as contracts are not complete, moral hazard and adverse selection problems remain. Also, the level of contracts' incompleteness seems to increase with the level of intangible assets intensity. Particularly in knowledge intensive firms, managers can improve their bargaining position by developing "manager-specific investments". The costs of writing and enforcing (increasingly incomplete) contracts become severe when managers possess better business expertise than financiers (shareholders and debt holders) (Martins and Alves, 2010). Agency theory argues that financial policies are determined by agency costs. Given intangible asset characteristics, agency costs are expected to be high in intangible asset intensive firms (Alves and Martins, 2010).

Severe agency costs and information asymmetry problems of knowledge intensive firms have obvious impact on the relationship between firm managers and investors (shareholders and debt holders) and the way they share risks and returns. Given the nature of such firms, asset-substitution and under-investment effects are ever more important. Very often, investors (shareholders as well as debt holders) have limited knowledge about the technicalities of the firms in which they invest. Intangible assets have a set of specific characteristics – namely, high levels of risk/uncertainty, firm-specificity, human capital intensity, low observability and long-term nature - that make them distinctly different from other categories of assets. These characteristics are likely to have substantial impact on the levels of agency costs of equity (hidden action and hidden information problems) and debt (asset-substitution and under-investment problems), information asymmetry levels between managers and investors and transaction costs of equity and debt.

Assets composition of a firm will affect its contracting environment (Himmelberg et al., 1999) because fixed assets (i.e. physical capital such as plant,



machinery and equipment) are easier to monitor and harder to steal than “soft” assets (i.e. intangibles, and R&D capital.) The more significant the amount of intangible assets, the greater is the scope for managerial discretionary power. Also, as intangible assets cannot serve as collateral, the risk-shifting incentive (asset-substitution risk) increases. Hence, intangible assets are associated with significant equity and debt agency costs, information asymmetry costs, transaction and bankruptcy costs. These costs are likely to have an impact on the design of corporate governance and disclosure policies. Vergauwen et al., (2007) emphasized that non-traditional industries have more incentive in disclosing more information about intangibles since investors expect continuous investments in R&D and immaterial projects. Old economy firms in traditional industries, on the contrary, tend to invest less and randomly in immaterial assets and are less prone to reveal since such expenditures may signal to competitors innovative strategies.

## ***Research Design and Methodology***

### *Objective of the Study*

1. To measure extent of corporate governance and disclosure practices of sample firms with the help of an appropriate instrument as an evaluation tool.
2. To know that to what extent corporate governance and disclosure practices of new economy firms are different from old economy firms.
3. To know how nature of industry influences corporate governance and disclosure practices of the firms.

### *Scope of the Study*

This study will help us to understand that whether tangible or intangible assets dominance of firms (as characterized by old economy versus new economy firms) is associated with better corporate governance and disclosure practices in Indian context.

### *Sources of Data*

This study employs a method of content analysis of published annual reports of firms. Content analysis can be a great source of information as it involves codifying both qualitative and quantitative information into pre-defined categories in order to track patterns in the presentation and reporting of information (Guthrie et al., 2006). Content analysis is widely used in accounting research to reveal useful insights into accounting practice (Steenkamp and Northcott, 2007). Annual reports are important documents for assessing and analyzing the company performance in regard to corporate governance standards and compliance. The annual reports of 30 firms for the financial year 2011-12 i.e. for the period ending March 2012 or December 2012 (based on the sample firms’ financial year) have been downloaded from the CMIE Prowess database (4.14 version).

*Sampling Technique Applied*

Stratified sampling was used for obtaining data of firms listed in Bombay Stock Exchange (BSE) and is constituent of S&P BSE sectoral indices.

*Sampling and Data Collection*

The sample for the study was collected from the firms listed in BSE in the form of S&P BSE sectoral indices. Sectoral indices at BSE aim to represent minimum of 90% of the free-float market capitalization for sectoral firms from the universe of S&P BSE 500 index. This sector index consists of the firms classified in that particular sector of the BSE 500 index. The sample firms represent different sectors viz.: Power, Oil & Gas, Metal, Health Care, and IT. In each of these sectors, top 6 firms as per market capitalization are selected for sample.

In most of the earlier studies on disclosure, firms were taken as the top largest firms listed on their respective stock exchanges which have been selected on the basis of their market capitalization. Such studies also employed content analysis of published annual reports (Joshi et al., 2012). As shown below in Table 1, these 30 firms selected from 5 different sectors represent more than 91% of overall sectoral index weight. Hence, these samples of 30 firms truly represent selected 5 sectors.

Table 1: Weight of Sample Firms in Their Respective Sectoral Indices

Sr. No.	S&P BSE Sectoral Indices	No. of Firms Studied	Weight in Index
1.	S&P BSE Power	6	97 %
2.	S&P BSE Oil & Gas	6	94 %
3.	S&P BSE Metal	6	82 %
4.	S&P BSE Healthcare	6	88 %
5.	S&P BSE IT	6	95 %
	Total Sample Size	30	91 %

*(Source: Calculated by author form BSE Web Site)*

*The Research Instrument: Measurement of Corporate Governance Disclosure score*

In this study, corporate governance and disclosure practices of firms are measured by using index developed by Subramaniana and Reddy (2012). They developed a new instrument to measure corporate governance and disclosure levels of firms, considering only voluntary disclosures in the Indian context. On the basis of the S&P instrument, the instrument also classifies corporate governance-related disclosures under two categories: ownership structure and investor relations (ownership), and board and management structure and process (board) (Annexure-I). This instrument was also used in prior research on corporate

governance and disclosure studies in India (Madhani, 2014b; Madhani, 2014c; Madhani, 2015a; Madhani, 2015b; Madhani, 2015c; Madhani, 2015d; Madhani, 2015e; Madhani, 2016).

The final instrument had 67 items: 19 questions in the ownership disclosure category and 48 in the board disclosure category. The annual reports of the selected 30 firms were carefully examined for the financial year 2011-12. Hence, to arrive at the overall disclosure score for each category, i.e. ownership and board, annual reports of each firm under study was scrutinized for the presence of specific items under the above mentioned categories. One point is awarded when information on an item is disclosed and zero otherwise. All items in the instrument were given equal weight, and the scores thus arrived at (for each category), with a higher score indicating greater disclosure. Final corporate governance and disclosure (CGD) score (Maximum: 67) for each firm was calculated by adding overall score received in ownership (Maximum: 19) as well as and board category (Maximum: 48).

*Data Analysis and Interpretation*

As explained earlier, with the help of instrument, corporate governance and disclosure practices of firms were calculated by thoroughly scrutinizing annual report of firms. The CGD score was calculated for all 30 firms of sample (Annexure-II). Capital intensity ratio of sample firms was also calculated by taking ratio of fixed asset and gross sales for each firm. This is also reported in Annexure-II.

*Explanatory Variable and Testable Hypothesis*

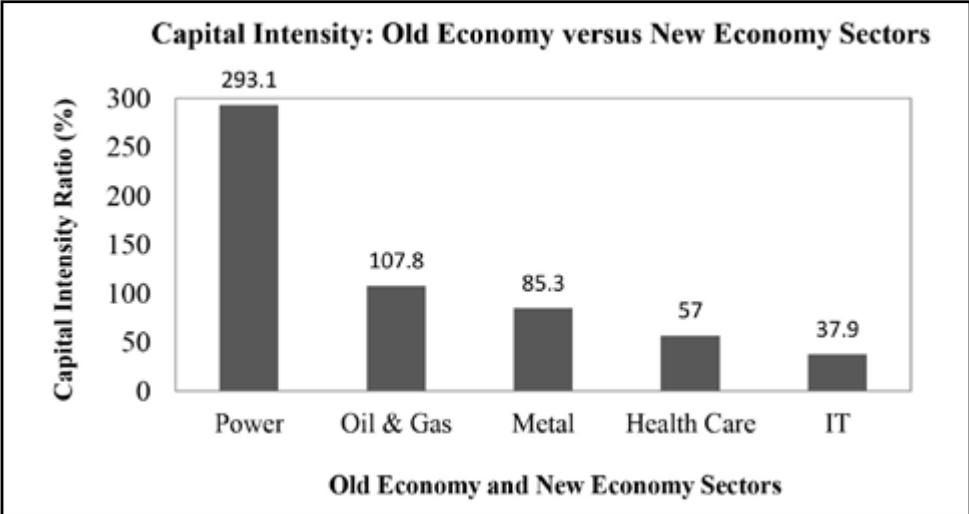
The explanatory variable used in the present research is capital intensity of firm. The study aims to find out if corporate governance and disclosure scores of old economy (high capital intensity) firms and new economy (low capital intensity) firms are significantly different. In the given sample of 30 firms, 18 firms are from old economy (high capital intensity), while 12 belong to the new economy (low capital intensity) firms. As shown in Table 2, old economy firms have high capital intensity while new economy firms have low capital intensity (calculated with data from Annexure-II).

It is evident from the Table 2 that, Power, Oil & Gas and Metal are highly capital

Sr. No.	Nature of Industry	Sector	CGD Score	Capital Intensi-ty Ratio (%)	Capital In-tensity
1	Old Economy	Power	28	293.1	High
2		Oil & Gas	27.83	107.8	
3		Metal	26.33	85.3	
4	New Economy	Health Care	23.83	57	Low
5		IT	32	37.9	

intensive sectors as they belong to old economy while healthcare and IT are low capital intensive sectors (highly knowledge intensive) as they belong to new economy. Capital intensity of old economy and new economy firms is also shown in the chart of Figure 1, below.

Table 2: Capital Intensity: Old Economy versus New Economy Sectors



(Source: Chart developed by Author)

*Development of Hypothesis*

The relation between corporate governance and disclosure practices and firm characteristics has become a subject of much interest in recent years. New economy firms have higher proportion of intangible assets. According to Lev (2001) the riskiness of intangibles is, in general, substantially higher than that of physical and even financial assets. These characteristics are likely to have substantial impact on the information asymmetry levels between managers and investors. Accordingly, firms with higher proportion of intangible assets are likely to disclose more. As discussed earlier new economy firms are higher in intangible assets (i.e. low capital intensity) while old economy firms are higher in tangible assets (i.e. high capital intensity). Hence, following alternate hypothesis is formulated:

*Hypothesis (H1):* Corporate governance and disclosure practices of new economy firms are better than old economy firms.

*Research Procedures for Testing Hypothesis*

This research conducted an inferential statistical analysis for testing the hypothesis. In order to test the significant differences in the corporate governance disclosure practices of old economy and new economy firms, parametric t-test has been used.

Summary of Findings and Empirical Results

A detailed analysis of the CGD score for sample firms representing old economy and new economy is presented in Table 3. Values of minimum, maximum, average and standard deviation of CGD score for old economy and new economy firms have also been reflected. Results show that there is a difference between mean and standard deviation of CGD score for old economy and new economy firms. Analysis of the result shown in Table 3 indicates that mean and standard deviation of CGD score are higher for new economy firms at 27.92 and 9.99 respectively when compared with old economy firms in the sample.

**Table 3 : Descriptive Statistics of Dependent Variable – CGD Score**  
(Source : Calculated by Author)

Sr. No.	Nature of Industry	No. of Firms	CGD Score		Std.	
			Min	Max	Mean	Deviation
1.	Old Economy Firms (High capital intensity)	18	17	35	27.39	4.90
2.	New Economy Firms (Low capital intensity)	12	14	40	27.92	9.99
3.	All Firms	30	14	40	27.60	7.21

For the purpose of this study, the firms have been taken from five different sectors for making meaningful comparison of new economy (low capital intensity) and old economy (high capital intensity) firms. The reason behind this classification is to find out the extent of disclosure in old economy and new economy firms. The sector-wise disclosure is shown in Table 4, for old economy firms and in Table 5 for new economy firms.

Old Economy versus New Economy Firms

Table 4, shows old economy firms and are related to Power, Oil & Gas and Metal sectors. In the sample of 30 firms studied for this research, 8 firms belong to PSU (public sector undertaking) comprising of 3 firms from Metal, 4 firms from Oil & Gas and 1 firm from metal sector. All these PSUs are from old economy segment with high capital intensity.

**Table 4 : Old Economy Firms: Sector-wise Breakup**

Sr. No.	Old Economy Sectors	No. of Firms	CGD Score		Std.	
			Min	Max	Mean	Deviation
1.	Power	6	25	30	28	1.79
2.	Oil & Gas	6	20	34	27.83	5.08
3.	Metal	6	17	35	26.33	7.12
4.	All Firms	18	17	35	27.39	4.90

Table 5, shows new economy firms and are related to Health Care and IT sectors.

**Table 5: New Economy Firms: Sector-wise Breakup**

Sr. No.	Old Economy Sectors	No. of Firms	CGD Score		Std.	
			Min	Max	Mean	Deviation
1.	Health Care	6	14	40	23.83	8.68
2.	IT	6	20	47	32	10.20
3.	All Firms	12	14	40	27.92	9.99

*(Source: Calculated by Author)*

Table 5 indicates that it is the IT firms which are found to have the highest corporate governance disclosure score among all sectors of sample firms. Mean CGD score of 32 for IT sector is considerably higher than mean score of sample (i.e. 27.60).

The study aims to find out if corporate governance and disclosure scores of old economy firms and new economy are significantly different. The hypotheses have been tested using the univariate t-test. Results of parametric test, as indicated in Table 6, show that significance value p is greater than 0.05, therefore at 5% level of significance; null hypothesis of equality of means fails to be rejected. Thus, there exists no statistically significant difference between corporate governance disclosure practices of old economy firms and new economy firms.

**Table 6: Results of Univariate Test - Hypothesis**

Null Hypothesis	t -Value	Significance Level
No significant difference between corporate governance disclosure practices of old economy firms and new economy firms	0.193	.848

*(Source: Table developed by author)*

**Discussion and Research Implications**

This research does not find statistically significant difference between corporate governance and disclosure practices of old economy firms and new economy firms listed in BSE. A possible explanation could be overall level of corporate governance and disclosure practices across all the firms was low during the study period 2011-12 (mean CGD score of all sample firms was low, i.e. 27.60), so that the effect of asset composition (tangible versus intangible assets) in old economy versus new economy firms was not apparent. As such there was little difference between mean CGD score of old economy firms and new economy firms. Another explanation could be that firms listed in Indian stock exchange i.e. BSE are mainly dominated by tangible assets. To throw more light on lack of intangible assets dominance of firms listed in BSE, an analysis is given below to compare Indian economy with US economy.

### *US Economy: Dominance of New Economy Firms*

US firms exhibit higher proportion of intangible assets in overall asset base. According to a Federal Reserve Board analysis of 2006, investment in intangible assets in the US exceeds all investment in tangible property (Corrado et al., 2006). It was also reported that during period from 2001 to 2007, intangible investment in USA was 45% larger than tangible investment. Increasingly, intangibles are a principal driver of the competitiveness of US firms and economic growth (National Academies Press, 2009). Corrado et al., (2006) report that for the period 2000-03, the aggregate US investment in intangible assets averaged 11.19% of GDP and estimate that these investment levels translate into a stock of intangible capital valued at 33.18% of GDP. These statistics show that US economy is dominated by intangible assets.

### *Indian Scenario: Dominance of Old Economy Firms*

In comparison to US (the world's largest economy), Indian firms are still not dominant in intangible assets. In Indian scenario, the market is under developed and yet to reflect the performance of the firms especially in terms of intangible assets (intellectual capital) efficiency. The stakeholders still perceive the performance of the firm in terms of tangible assets and less in terms of intangible assets (Kamath, 2008). According to Mehra (2010), during period of 1991-2004, tangible assets alone account for over 95% of the value of the entire market, emphasizing greater contribution of tangible assets in Indian context. In India, expenditure on R&D is 0.9 % of GDP. In world GDP of US\$ 70.2 trillion in 2011, the share of services was 67.5 per cent. For US, share of services was 78.4% of GDP while, for India service sector contributed 58.2% of GDP for same period (Government of India, Economic Survey 2012-13). As per Global Competitiveness Report 2012-13, published by World Economic Forum, Global Competitiveness Index rankings is 59 for India with rank for capacity for innovation is 42, company spending on R&D rank is 37 while in all these categories rank for US is 7. All these statistics confirm that Indian economy is still not dominated by new economy firms with higher proportion of intangible assets.

### **Limitations of the Study**

This research considers firms listed with BSE, i.e. listed firms only and the time period considered for the study is financial year 2011-12. The firms which have been included in research may not represent the difference of all industries prevailing in the country.

### **Conclusion**

In this research, the corporate governance and disclosure practices of old economy firms and new economy firms listed in S&P BSE sectoral indices were studied. A clear picture emerges from this study that in the Indian scenario, there is

no statistically significant difference in the corporate governance and disclosure practices of firms across old economy as well as new economy sectors. As focus of Indian economy will further shift in future from traditional industries (old economy) to research and innovation based industries (new economy), proportion of intangible assets in overall asset base will go up for Indian firms. It will also get further boost from increased investment in R&D. In that context, it will be interesting to see whether it influences corporate governance and disclosure practices of Indian firms in future.



**ANNEXURE – I**  
**Corporate Governance and Disclosure (GCD) Index Methodology**  
**Board and Management Structure and Process**

*Component 1:*

No. Disclosure of:

1. Details about current employment/position of directors provided?
2. Details about previous employment/positions provided?
3. When each of the directors joined the board?
4. Details about whether the chairman is executive or non-executive?
5. Detail about the chairman (other than name and executive status)?
6. Details about the role of the board of directors in the company?
7. Are the dates of board meetings disclosed?
8. Is the aggregate board attendance disclosed for each meeting?
9. Are directors attending over 60 per cent of the board meetings?
10. Are attendance details of individual directors at board meetings disclosed?
11. Do independent directors constitute at least 1/3 of the board?
12. Do independent directors constitute more than 1/2 of the board?
13. Do independent directors constitute more than 2/3 of the board?
14. A list of matters reserved for the board?
15. Is the list of audit committee (AC) members disclosed?
16. Is the majority of AC independent?
17. Is the chairman of the AC independent?
18. Is disclosure made of the basis of selection of AC members?
19. Is the aggregate attendance of AC meetings disclosed?
20. Is the attendance of individual directors at AC meeting disclosed?
21. Does the company have a remuneration committee?
22. Is the list of remuneration committee members?
23. Is the majority of RC independent?
24. Is the remuneration committee chaired by an independent director?
25. Is the frequency of RC meetings disclosed?
26. Is the aggregate RC meeting attendance disclosed?
27. Is disclosure made of individual members' attendance in RC meetings?
28. Does the company have a nominating committee?
29. Is the list of members of the nominating committee disclosed?
30. Is the majority of nominating committee independent?
31. Is the frequency of NC meetings disclosed?
32. The existence of a strategy/investment/finance committee?
33. The number of shares in the company held by directors?
34. A review of the last board meeting disclosed (for example, minutes)?
35. Whether they provide director training?

36. The decision-making process of directors' pay?
37. The specifics on performance-related pay for directors?
38. Is individual performance of board members evaluated?
39. Is appraisal of board performance conducted?
40. The decision making of managers' (not Board) pay?
41. The specifics of managers' (not on Board) pay  
(for example, salary levels and so on)?
42. The forms of managers' (not on Board) pay?
43. The specifics on performance-related pay for managers?
44. The list of the senior managers (not on the Board of Directors)?
45. The backgrounds of senior managers disclosed?
46. The details of the CEO's contract disclosed?
47. The number of shares held by the senior managers disclosed?
48. The number of shares held in other affiliated companies by managers?

### **Ownership Structure and Investor Relations**

#### *Component 2 :*

No. Does the annual report contain?

1. Top 1 shareholder?
2. Top 3 shareholders?
3. Top 5 shareholders?
4. Top 10 shareholders?
5. Description of share classes provided?
6. Review of shareholders by type?
7. Number and identity of shareholders holding more than 3 per cent?
8. Number and identity of shareholders holding more than 5 per cent?
9. Number and identity of shareholders holding more than 10 per cent?
10. Percentage of cross-ownership?
11. Existence of a Corporate Governance Charter or Code of Best Practice?
12. Corporate Governance Charter/Code of Best Practice itself?
13. Details about its Articles of Association (for example, changes)?
14. Voting rights for each voting or non-voting share?
15. Way the shareholders nominate directors to board?
16. Way shareholders convene an Extraordinary General Meeting (EGM)?
17. Procedure for putting enquiry rights to the board?
18. Procedure for putting proposals at shareholders meetings?
19. Review of last shareholders meeting (for example, minutes)?

(Source : adapted from Subramaniana and Reddy, 2012)

## ANNEXURE – II

Sr. No.	Nature of Industry	Sector	Fixed Asset = (A) (INR Crores)	Gross Sales = (B) (INR Crores)	Capital Intensity (%) = $100 \times (A) / (B)$	CGD Score
<b>A) Old Economy Firms</b>						
1	NTPC	Power	88,882.13	66,365.89	147.0	29
2	Power Grid	Power	64,519.19	10,311.52	70.5	30
3	Tata Power	Power	38,256.23	26,019.81	133.9	28
4	NHPC	Power	30,293.05	6,920.33	343.5	27
5	Reliance Infrastructure	Power	17,045.07	24,180.76	437.7	29
6	Reliance Power	Power	6,935.61	2,019.21	625.7	25
7	ONGC	Oil & Gas	254,415.39	151,121.10	24.3	28
8	Reliance Industries	Oil & Gas	233,475.00	368,571.00	19.1	24
9	IOC	Oil & Gas	107,630.59	442,458.53	63.3	34
10	Bharat Petroleum	Oil & Gas	42,549.62	223,314.64	301.0	30
11	Cairn India	Oil & Gas	35,703.86	11,860.65	168.4	31
12	GAIL	Oil & Gas	31,769.19	44,861.05	70.8	20
13	Tata Steel	Metal	130,491.21	135,975.56	86.5	30
14	Hindalco Industries	Metal	53,961.03	82,549.03	96.0	32
15	JSW Steel	Metal	42,689.51	36,964.23	65.4	20
16	Coal India	Metal	38,096.41	78,410.38	48.6	24
17	Sterlite	Metal	37,289.83	43,115.91	99.8	17
18	Jindal Steel & Power	Metal	22,421.81	22,472.89	115.5	35
<b>B) New Economy Firms</b>						
19	Glaxo	Health Care	316.18	2766.92	11.4	20

20	Cipla	Health Care	4626.9	7128.82	64.9	14
21	Lupin	Health Care	4191.84	7124.93	58.8	24
22	Ranbaxy Laboratories	Health Care	3258.79	6331.46	51.5	22
23	Dr Reddy	Health Care	8842.3	9855	89.7	40
24	Glenmark Pharmaceuticals	Health Care	2650.96	4020.64	65.9	23
25	Wipro	IT	18,277.30	37,308.30	27.3	37
26	TCS	IT	12,991.29	48,894.08	49.0	47
27	HCL	IT	9,581.82	20,830.55	42.1	20
28	Infosys	IT	9,194.00	33,734.00	46.0	34
29	Mahindra Satyam	IT	2,320.60	6,395.60	26.6	33
30	Oracle Financial	IT	1,324.42	3,146.68	36.3	21

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