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INTRODUCTION

The seminal work of Ball and Brown (1968), and Beaver (1968) resulted in the emergence of a very popular accounting research, called market-based accounting research (MBAR). From the viewpoint of accounting, MBAR in accounting encompasses the research into the relationship between capital markets and financial reporting. The capital markets literature in accounting provides evidence on information content of accounting numbers and the determinants of various coefficients (Holthausen and Watts: 2001).

FOCUS ON ACCOUNTING QUALITY

Value relevance studies focus only on information disclosed in financial statements to assess the financial information quality (Holthousen and Watts: 2001). The models proffered under this theory also focus on the associations between accounting figures and stock-market reactions in the measurement of the quality of financial reporting information (Barth et al: 2001; Nichols and Wahlen: 2004). The stock price is assumed to represent the market value of the firm, while accounting figures represent firm-value based on accounting procedures. According to Nichols and Wahlen (2004), and Dechow and Dichev (2002), when both concepts are strongly correlated, it is assumed that accounting information provides relevant and reliable information. Further, this method is also used to examine earnings persistence, predictive ability, and variability, as elements of earnings quality (Schipper and Vincent: 2003).

TYPES OF VALUE RELEVANCE STUDIES

The studies on value relevance are varied in nature. Several researchers have their own understanding of the typologies (Holthausen and Watts: 2001). Broadly speaking, we may identify three approaches to value relevance studies.
First, Holthausen and Watts (2001) broadly classify value relevance studies into (i) Relative association studies; (ii) Incremental association studies; and (iii) Marginal information content studies. Relative association studies compare the association between stock prices or changes in values and alternative bottom-line measures. Incremental association studies investigate whether an accounting number is helpful in explaining value or returns over long windows. Marginal information content studies investigate whether a particular accounting number adds to the information set available to investors. Typically, these studies use event studies (short window return studies) to determine if the release of an accounting number is associated with value changes. Price reactions under marginal information content studies are considered evidences of value relevance. As observed by Dhaliwal et al. (1999), the relative association test implies that income numbers can be transformed into estimates of the equity value or change in value (direct valuation theory). Incremental association study tests are supposed to indicate the usefulness of accounting measures as inputs-to-equity valuation.

Second, Kothari (2001) classifies value relevance into five categories: (i) methodological capital markets research; (ii) evaluation of alternative accounting performance measures; (iii) valuation and fundamental analysis research; (iv) tests of market efficiency; and (v) value relevance of disclosure according to various financial accounting standards and economic consequences of new accounting standards.

Third, a large number of studies have been conducted by adopting the Ohlson (1995) model, which recognizes earnings and book value as the most relevant variables. However, many studies using this model have extended the model to include innumerable variables in terms of what Lundholm (1995) calls “other information.” Callen and Segal (2005) showed that the Feltham-Ohlson Model can be a good estimator of price, when other information factors are added. In fact, most of the empirical studies have moved on the lines of Ohlson model and the present study adopts the Ohlson model with an extension of it by including dividend as an accounting variable on the lines of research done by Brief and Zarowin (1999).
DRIVER OF VALUE RELEVANCE RESEARCH

The determination of the value of a stock from available information is known as “fundamental analysis.” In fact, the driver of value relevance research is fundamental analysis research, which aims at determining the value of firm securities by carefully examining critical value drivers (Lev and Thiagarajan: 1993). The major goal of fundamental analysis is to assess firm value from financial statements (Ou & Penman: 1989a). Normally, related research (e.g. Ou and Penman: 1989a, b; Lev and Thiagarajan: 1993; and Chen and Zhang: 2007) predicts future earnings and stock returns using financial measures within the income statement and balance sheet. However, a number of studies present evidence that investors do not correctly use available information in predicting future earnings performance (Bernard and Thomas: 1989, 1990). Added to this, the research in return predictability also provides strong evidence that challenges efficient market efficiency (EMH) (Ou & Penman: 1989a, b). The empirical evidences find that stock prices do not completely reflect all publicly available information (Ou & Penman: 1989a; Fama: 1991). Numerous studies also conclude that capital market is inefficient with respect to some areas (Grossman and Stiglitz: 1980; Beaver: 2002). However, the empirical research on value relevance is still pursued on the assumption of EMH. The reasoning about the presence of EMH by applying value relevance test takes this form: If the value relevance measured by $R^2$ is higher, then it is interpreted that market is efficient. If the value relevance measured by $R^2$ is lower, then it is interpreted that market is inefficient.

VALUE RELEVANCE MODELS

The two most commonly used models to study value relevance are price and return models (Ota: 2010). Even though both the models are derived from Ohlson (1995) model, the price model examines the relationship between stock price, and book value and earnings as against return model examining the relationship of stock returns consisting of earnings and earnings changes with stock prices. If the price
model focuses on price level, the return model centers around price change. Since the focus of these models is on price level and price change, most of the times the results obtained by applying these models are entirely different (Harris et al: 1994; Ota: 2010). With all these differences between return and price models, the Ohlson’s (1995) price model is probably the most pervasive valuation model today (Barth 2000: 13). In this background, the presentation of relevant literature on these value relevance models has been presented under (i) Theoretical Foundations; (ii) Evidences on Return Model; and (iii) Evidences on Price Model.

(i) Theoretical Foundations:

The theoretical foundations of value relevance models have been presented under (a) Return Model; and (b) Price Model.

(a) Return Model:

The return model describes the relationship between stock returns and share prices (Ball and Brown: 1968; Easton and Harris: 1991). “Returns” include annual dividends and share price appreciation (depreciation) during a period or a year. Change in share price is the dependent variable in the returns model and the change in price is measured by taking the difference in share price between latest period and the previous period on a time-series basis. Normally, the period refers quarterly period or annual period. Share return variable is calculated by dividing price in the beginning of the period from the sum of changes in price and dividend in that period for each year. The formula for determining stock returns on annual basis has been presented below:

\[ R_t = \frac{(P_t - P_{t-1}) + D_t}{P_{t-1}} \]

Where,

\[ R_t = \text{Return on share during the period;} \]
\[ P_t = \text{Price during the period;} \]
\[ P_{t-1} = \text{Price during the previous period; and} \]
\[ D_t = \text{Dividend during the period} \]
(b) Price Model:

The early studies on the relationship between share price and accounting variables focused only on dividends as having the influence on share prices. Initially, the market price of a share was defined as the discounted future cash flows. Hence much of the early empirical research focused on what is popularly known as Dividend Discounting Model (DDM), the model of which is presented below:

Dividend Discount Model =

\[ P_t = \sum_{t=1}^{\infty} \frac{E_t[d_{t+1}]}{(1+r)^t} \quad (1) \]

Where,
- \( P_t \) is the price of the firm’s equity at time \( t \);
- \( d_t \) is net dividends paid at time;
- \( t, r \) is the (assumed constant) discount rate at time \( t \);
- \( E_t[ ] \) is the expected value operator conditioned on date \( t \) information.

After the contribution of Lintner (1956) towards dividend behaviour, Miller and Modigliani (1961) introduced the concept of “Dividend Irrelevance Theory” in which they explain that dividend policy does not affect the stock prices. Subsequent research provides strong evidence in favour of dividend irrelevance theory and do not consider it relevant to the stock prices (Black and Scholes: 1974). Hence much of the development in value relevance concept has focused on earnings, and book value (e.g. Collins et al: 1997; Barth: et al: 1998; Collins et al: 1999; Francis and Schipper: 1999; Lev and Zarowin: 1999; Gjerde et al: 2005; Hellstrom: 2006; Bae and Jeong: 2007) and the value relevance model is specified as follows:

\[ P_{it} = b_0 + b_1 \text{EPS}_{it} + b_2 \text{BVPS}_{it} + e_{it} \quad (2) \]

Where:
- \( P_{it} \) = Firm i’s stock price three and six months from the end of year \( t \);
- \( \text{EPS}_{it} \) = Reported earnings per share for firm i during period \( t \);
- \( \text{BVPS}_{it} \) = Book value per share for firm i at the end of period \( t \);
- \( e_{it} \) = Error term capturing other value relevant information;
- \( b_0 \) = Intercept or the constant; and
- \( b_1, b_2 \) = Slope coefficients
However, several studies have demonstrated that dividends do not displace firms’ equity market values on a dollar-for-dollar basis—indeed, far from it. Using a variety of research questions, experimental designs and econometric specifications by Rees (1997), Fama and French (1998), Giner and Rees (1999) and Akbar and Stark (2003) report that dividends are robustly and materially positively priced in the cross-section of the equity values of Spanish, UK, and US firms. The robustness of dividends in value relevance was further evidenced by Brief and Zarowin (1999), in which they showed more pronounced value relevance from dividends. Thus the original Ohlson (1995) model is now rewritten as given below:

\[ P_{it} = b_0 + b_1 \text{EPS}_{it} + b_2 \text{BVPS}_{it} + b_3 D_{it} + e_{it} \]  

(3)

To conclude, the recent studies recognize the relevance of Ohlson model also, but depart from it on several grounds. Only a few studies are conducted on value relevance by applying the Ohlson model in its purity (e.g. Dechow, Hutton and Sloan: 1999; Graham and King: 2000; Vazquez, Valdes and Valdes: 2007). But most of the studies hypothesize that the original amounts given in the financial statements are more relevant than Ohlson’s variables (Vazquez, Valdes and Herrera: 2007). As a result, several studies have extended the Ohlson’s basic model including return model to include other variables and in fact the inclusion of such extended variables is growing (e.g. Collins et al: 1997; Barth et al: 1998; Collins et al: 1999; Francis and Schipper: 1999; Brief and Zarowin: 1999; Hellstrom: 2006).

(ii) Empirical Evidences on Return Model:

The return model has been evidenced to have a low explanatory power in many studies. For example, by using the returns model for a U.S. sample over the 1968–1986 period, Easton and Harris (1991) report that earnings levels and changes explain 8% of the cross-sectional variation in stock returns. Francis and Schipper (1999) report that for their study of U.S. firms over 1952–1994, the adjusted R² of the yearly returns model ranged from 5% to 46%, with the earnings variables explaining 22% of the variation in stock returns. Gjerde et al (2005) show that earnings levels
and changes explained only 5% of the variation in stock returns in Norway during 1965–2004. In the Egyptian equity market, Ragab and Omran (2006) report that earnings levels and changes explained only 4% of stock returns variations during the 1998–2002 period.

(iii) **Empirical Evidences on Price Model:**

The studies by Collins et al (1997; Francis and Schipper (1999) Hellstrom (2006), Ragab and Omran (2006), Bae and Jeong (2007) and Alfaraih Alaenzi (2010) find price with joint influence of book value and earnings has higher explanatory power than return model with their respective $R^2$s of 54%, 46%, 38%, 40%, and 57%. Another strand of research highlights higher value relevance of price model in emerging economies (e.g. Easton and Harris, 1991; Francis and Schipper, 1999; Gjerde et al: 2005; Hellstrom, 2006; Ragab and Omran, 2006; Alfariah and Alenzi: 2010).

To conclude, the classical approach to study value relevance has been the adoption of Ohlson (1995). However, this Ohlson (1995) model has not been applied in its purity and many deviations of this model have been evidenced. Further, the adoption of Ohlson model emphasizing returns and share prices has given place to price model in view of the former not being able to support value relevance. Therefore, much of the research in recent years has focused on the study of value relevance through price models, which have deviated from the original Ohlson model by including several accounting variables other than book value, and earnings, and dividends. The present study also falls in line with this recent trend in value relevance research by documenting evidences on value of accounting information under price model mainly.

**VALUE RELEVANCE OF EARNINGS**

In fact, the value relevance research was introduced with the assumption that accounting numbers have information content with an emphasis on earnings information as a central variable by Ball and Brown (1968), who concluded that earnings captured half or more of all the information about individual company. In
fact, the $R^2$ in value relevance research still carries the popularly used Earnings Response Coefficient (ERC).

It is a common practice in value relevance literature to define earnings as earnings before extraordinary items per share (Dechow: 1994; Barth et al: 2001; Ou and Sepe: 2002). However, reported earnings are commonly used as the basis of valuation instead of considering earnings before extraordinary gains and losses (Easton and Harris: 1991; Ou and Sepe: 2002).

Consistent with the findings of Ball and Brown (1968), many studies find that earnings have higher value relevance (e.g. Beaver and Dukes: 1972; Livnat and Zarowin: 1990; Subramaniam et al: 2000; Alexander, Falta and Willet: 2012). However, a few studies find either no relevance of earnings (Adefila, Oladipo and Adeoti: 2004) or mixed results (Ferraro and Veltri: 2012).

Collins et al (1997) find that value relevance of ‘bottom line’ earnings has declined. However, Landsman and Maydew (2002) document that the information content of earnings has not declined while examining the abnormal trading volume and abnormal return volatility. There is also more evidence on the declining value relevance of earnings and this has been attributed to (a) sudden change in the world economic environment and firm specific characteristics (Amir and Lev: 1996; Collins et al: 1997; Jang et al: 2002); (b) instable earnings (Lev: 1989); (c) threat of liquidation and mounting negative earnings (Basu: 1997; Hayn: 1995); (d) one-time items and intangibles (Collins et al: 1997); (e) accrual earnings with conservative measurement (Wilson: 1986; Barth et al: 1999; Penman and Xiao-Jun: 2002); (f) lack of timeliness (Collins, Kothari, Sshanken and Sloan: 1994); overly short measurement intervals (Easton, Harris and Ohlson: 1992); (g) earnings management to avoid losses (Burgstahler and Dichev: 1997; Marquardt and Wiedman: 2004); (h) low earnings persistence (Kormendi and Lipe: 1987); and (i) aggregation of earnings items (Ohlson & Penman: 1992; Ramakrishnan and Thomas: 1998; Thomas: 1999; Barth, Cram and Nelson: 2001). To conclude, there is a consensus that earnings point towards declining value relevance over time.
To conclude, if the early research on the value relevance of earnings yielded positive relationships, subsequent researchers have found the declining value relevance of earnings along with mixed patterns of relationship.

**VALUE RELEVANCE OF BOOK VALUE**


**VALUE RELEVANCE OF DIVIDENDS**

The Modigliani and Miller (1958) hypothesis states that the stock value is the discounted value of future dividends and hence the timings of dividends do not affect valuation, once investment policy is known. Miller and Modigliani’s (1961) dividend irrelevance theory set a tone for research on the relationship between dividends and share prices. The impact of these papers resulted in dividend irrelevance in stock price valuation and thus neglecting the role of dividend in stock prices and focusing on the study of the relationship between earnings and book value, and stock prices.

The result was that most of the research in exploring the relationship between financial statement information and stock prices focused mainly on earnings and book value with the pioneering research contributed by Ohlson (1995, 1989), whose
work spurred the interest in value relevance research. Meanwhile, several studies established the links between dividends and the persistence of earnings changes (e.g. Kormendi and Zarowin: 1996; DeAngelo et al: 1992; Guay and Harford: 2000). It was Gordon (1963), who first found no support for the dividend irrelevance theory and concluded that dividend policies did affect the firm value and the firms that paid larger dividends faced less risk in terms of stock price volatility. Since then, several studies have found a positive relationship between dividends and stock prices (e.g. Friend and Puckett: 1964; John and Williams: 1985; Rees: 1997; Fama and French: 1998; Brief and Zarowin: 1999; Khan and Khan: 2011).

Specifically, Lamant (1998) studied the value relevance of dividends in the US stock market by using quarterly data between 1947 (Q1) and 1994 (Q4) and reported that in forecasting excess returns, both earnings and dividends had identifiable predictive power, with dividends being the more important of the two predictors. The study by Skinner (2004) is the most comprehensive study on value relevance of dividends. His results show that (i) dividend paying firms have more persistent earnings and that this is particularly so for firms with larger dividend payouts, for large firms, and for large firms with larger payouts; (ii) both earnings and dividends are more influential for larger firms with dividends dominating earnings for smaller firms than larger firms, and earnings having the highest and dividends having the lowest explanatory power for mid-range PE firms.

Lastly, the justification for inclusion of dividend as a basic variable in Ohlson model has come from Brief and Zarowin (1999): *First*, using Modigliani and Miller’s (1959) argument, dividends may have a stronger correlation with permanent earnings than reported earnings. *Second*, they derive a model of price in terms of book value and dividends from basic analytical relationships. Further, Brief and Zarowin (1999) justify replacing earnings with dividends in the regression of price on book value with two separate arguments. *First*, the dividends have “information content” in the sense that they provide information about the firm’s permanent earnings. *Second*, given the algebraic properties of accounting systems based on the clean surplus relation, an accounting valuation model can be derived in terms of book value and dividends.

Based on these theoretical arguments, Brief and Zarowin (1999) provide empirical evidence through three sets of findings: *First*, overall BV and dividends have almost the same explanatory power as BV and reported earnings. *Second*, for firms with transitory earnings, dividends have greater explanatory power than earnings but BV and earnings have about the same explanatory power as BV and dividends. *Third*, the most important observation is that when earnings are transitory and BV is a poor indicator for value (for intangible intensive sectors), dividends have the greatest explanatory power of three variables.

**VALUE RELEVANCE OF CASH FLOWS (CF)**

Next to testing of Ohlson model, the most researched area of value relevance is that of cash flow. The impetus for the study of cash flow relevance has come from professional accounting bodies recognizing cash flow statement as a compulsory statement to be included in corporate annual reports since 1992 with the promulgation of IAS 7-Cash Flow Statements. With cash flow being classified into operating cash flow (OCF), investing cash flow and financing cash flow, the focus of cash flow relevance research is exclusively on cash from operations before investments or operating cash flow (OCF) (e.g. Dechow et al: 1998; Subramanyam

Lastly, Hadi (2005) and Valez-Parega (2005) posit that cash flow is not a necessary figure for accounting principles to be based on and thus the requirement of cash flow statements is often questioned by the researchers on the basis of it being included as an accounting principle in recent years (Subramanyam and Venkatachala: 2007).

**VALUE RELEVANCE OF LINE ITEMS**

One of the most researched topics in value relevance has been the impact of line items, which may be defined as the disaggregation of each financial reporting summary figure into smaller components. The need for such disaggregation arises due to ambiguity of the income numbers, which “lack meaning and therefore of doubtful utility (Ball and Brown: 1968).” The most important sources for line items are multi-step income statement, retained earnings statement, and vertical balance sheet. In fact, the disaggregation of line items is based on fundamental analysis, which involves the use of current and past financial statements in conjunction with industry and economic data in order to determine firms’ intrinsic value and identify mispriced securities (Kothari: 2001). This strand of fundamental analysis research
entails the study of value relevance of different components of earnings, expenses, liabilities, and capital and assets (Lev and Thiagarajan: 1993).

Several researchers observe the positive effects of analyzing value relevance from the perspective of line items. Pope and Wang (1999) demonstrate that identification of earnings components and linking with share price generally leads to higher value relevance. Thomas (1993) observes: “Perhaps [the] most important emerging issue in the earnings time-series literature is the contention that reported earnings cannot be described by a univariate time-series process alone. Earnings contain different components, these components follow different processes, and the shocks to these processes are not perfectly correlated with each other.” Bao, Lewis, Lin and Manegold (1983) argue: “Underlying this approach is the belief that a firm's earnings react to changes in economic conditions that are reflected more directly in non-earnings accounting series.” According to Cogger (1981), “Line items have been shown to be more homogeneous than earnings, so the disaggregation of data generally will result in more efficient model estimation.” According to Carnes (2006), “Disaggregation of the financial statements into line items and investigation of the time-series properties of these line items allows an examination of a richer information set than earnings alone can provide.”

Thus it is held that the study of value relevance based on line items touches the heart of fundamental analysis and helps in getting the better statistical fit. It is also important to note that many line items act as proxies in value relevance studies.

Even though line items are easy to be identified, the review of literature on the value relevance of each line item is impossible. This impossibility is due to insurmountable literature being found. Hence a summary review of value relevance has been presented below. Numerous studies find (i) higher value relevance from earnings disaggregated into normal earnings and extraordinary earnings (Ramakrishna and Thomas: 1998; Landsman, Miller and Yeh: 2007); (ii) foreign segment earnings having higher value relevance (Thomas: 1999; Hope and Kang: 2005; Dimitro and Jain: 2008); (iii) unearned revenue negatively influencing market
value (Bauman: 2005); (iv) positive relationship between ad expenditure and market value (Shah, Ali, Stark and Akbar: 2009); (v) one target disclosure instead of multi-target disclosure having higher value relevance (Cools and Van: 2003); (vi) value relevance of accounting information significantly higher for low-growth firms relative to high-growth firms (Frank: 2002); abnormal inventory growth yielding significant abnormal stock market returns in US (Saravanan and Mani: 2012); dividend yield being positively related to stock price (Down: 2001); book-to-market and debt-equity ratios being positively related to stock returns (Mukherji, Dhatt and Kim: 1997); gross profit, administration, distribution expenses, and labour force independently and jointly having positive relation with share price (Al-Debie and Walker: 1999); disaggregation of earnings into operating earnings, non-operating earnings and taxes, and special items improving one-year-ahead forecasts of return on equity leading to higher value relevance (Fairfield, Sweeney and Yohn: 1996); incremental information content in both revenues and expenses increasing by using Value Line forecasts (Swaminathan and Weintrop: 1991); and positive relationship between stock price, and advertising expenditure and R&D expenses (Han and Manry: 2004).

VALUE RELEVANCE OF INTANGIBLE ASSETS

It is observed that financial statements are becoming less informative on the firm’s current financial position and future prospects (Lev and Zarowin: 1998). This loss of relevance of accounting information is attributed to the increasing gap between the market value and the book value of equity of most companies in most countries (e.g. Ely and Waymire: 1996; Collins, Maydew and Weiss: 1997; Francis and Schipper: 1997; Lev and Zarowin: 1998). Specifically, Lev and Zarowin (1998) find a significant increase in the market-to-book ratio of US firms, from a level of 0.81 in 1973 to a level of 1.69 in 1992 and this means that nearly 40% of the market value of companies is not reflected in the balance sheet. The underlying reason for
this increasing gap between share price and book value is identified to be mergers and acquisitions (e.g. Gray: 1991; Johnson and Tearney: 1993; Swieringa: 1997).

In the background of these developments, it is argued that Ohlson’s residual income model has lower explanatory power (Green, Stark and Thomas: 1996; Goldfinger: 1997; Canibano, Carco-Ayuso Covarsi and Sanchez: 1999).

However, the presence of intangible assets has caused complexities in estimating the value relevance. The reason lies in intangible investments failing to meet asset recognition criteria in financial reporting principles (Lev: 2001; Kabir: 2008). The value relevance is conditional upon reliability of the information about intangible assets (Dahmash, Durand and Watson: 2009). This absence of principles to recognize intangible assets in financial reporting leads to expensing of these assets instead of capitalizing them and this practice has caused reduced usefulness of relevance of accounting information (e.g. Lev: 2001; Upton: 2001).

Broadly speaking, intangible assets are any non-physical and non-financial instruments that have future benefits accruing to the firm as a result of past transactions and events. Lev (2001: 5) defines intangible assets as “claims to future benefits that do not have a physical or financial (such as a stock or a bond) embodiment that are generated by innovation or discovery, unique organizational designs, or human resources practices.” The observation of this definition of intangible assets results in enormous events being included and the list is always inclusive. Another approach to identify intangible assets is to find a proxy for it and most of the time the P/B ratio is considered to be the most reliable proxy. Further, these intangible assets are always expressed as intellectual capital (Lev: 2001).

The approaches to measure intellectual capital include direct method and indirect method. Direct method envisages the quantification of all intangible assets to study value relevance. However, intangible assets are very difficult to be identified. Hence it is posited that financial information of these firms is of limited value to investors (Amir and Lev: 1996) and also market value and book value have a substantial gap in these industries (Liang: 2005).
The impossibility of applying direct method has resulted in the adoption of indirect method that entails the use of a proxy to identify these intangible assets. Many studies have used P/B ratio or MV/BV ratio as a proxy to measure value relevance of intangible assets successfully (e.g. Block: 1995; Cheng: 2005; Chang, Hung and Huang: 2011). In fact, these ratios are often used as proxies to measure intangible assets.

Early value relevance studies attribute the reason for decreasing value of accounting information to the non-consideration of intangible assets (e.g. Lev and Sougiannis, 1996; Collins et al., 1997; Lev and Zarowin, 1999). Subsequent studies document value relevance of intangible assets firms is higher than those of other firms (Collins; 1997; Francis and Schipper: 1999). Some studies find value relevance of intangible assets being higher in comparison with other firms or by including them as extended variables or control variables (e.g. Chan et al: 1991; Lev and Zarowin: 1997, 1999; Aboody and Lev: 1998; Ely and Waymire: 1999b; Kallapur and Kwan: 2004; Suwardi: 2004; Goodwin and Ahmad: 2006; Oliviera et al: 2010).

**VALUE RELEVANCE OF REVENUE**

A survey of 400 CFOs shows that revenue ranks as the second most important performance measures reported to outsiders after earnings and before cash flow from operations (Graham, Harvey, and Rajgopal: 2005, 18). In fact, financial analysts often start with forecasting future revenue based on market demand for the products and services of a company and its expected market share (Penman: 2012). It is observed that operating revenues are a key input to calculate a variety of return ratios, which are directly related to value generation (O’Hanlon and Peasnell: 1998). Further, revenue measurement is more reliable in the sense that its measurement continues to be conservative even after IFRS adoption (Wagenhofer: 2014). However, there was a rampant improper revenue recognition (Levitt: 1998) and it was often found many high-tech ‘new economy’ firms in the late 1990s were characterized by an unusual relationship between stock price values and reported
financial statement information with stock prices being large multiples of reported revenue, while firms reported continuing losses (Keating, Lys and Magee: 2003). Specifically, Xu and Cai (2006) find that aggressive revenue recognition boosts stock prices by comparing earnings, operating cash flows and revenue. Putting aside these issues, extant research suggests that information content of earnings has declined over the years (e.g. Collins et al: 1997; Francis and Schipper: 1999; Lev and Zarowin: 1999).

Research on the value relevance of revenue information is very sparse relative to earnings (Chandra and Ro: 2008). Research on value relevance of revenue got momentum when with the dot-com bubble in the late 1990s when large spurts in share prices were evidenced amidst lower profits or losses by technology firms, but these share prices were geared to sales growth (Chandra and Ro: 2008). Early studies found no evidence of value relevance of revenue beyond earnings (Hopwood and McKeown: 1985; Hoskin et al: 1986; Wilson: 1986) and revenue had surprisingly incremental value relevance minimally (Swaminathan and Weintrop: 1991). However, subsequent researches have established positive relationships between share prices and revenue (e.g. Bowen, Davis, and Rajgopal: 2002; Callen, Robb, Segal: 2008). Several studies find revenues are highly value relevant (e.g. Rajgopal, Kotha and Venkatachalam: 2000; Trueman et al: 2000, 2001; Davis: 2002; Chandra and Ro: 2008; Habib: 2010; Budd and Budd: 2011; Prakash and Sinha: 2013; Wagenhofer: 2014).

With very low level of value relevance of revenue, a few researchers have tested the value relevance of sales growth (e.g. Ertimur et al: 2003; Budd and Budd: 2011). It has been evidenced that sales growth has higher value relevance than revenue (e.g. Amir and Lev: 1996; Choi et al: 2006; Habib: 2010).

VALUE RELEVANCE OF P/E RATIO

An important stock market phenomenon has been the price/earnings (P/E) ratio, which is determined by dividing market price by earnings. It is considered to be
a measure of investor risk. The higher the ratio, higher is the risk and lower the ratio, lower is the risk.

Based on P/E ratio, the companies’ stocks are normally classified into growth stocks and value stocks. Growth stocks are shares in a company whose earnings are expected to grow at an above-average rate relative to the market. A growth stock does not usually pay dividend, but reinvests it as retained earnings. Most technology companies are growth stocks. A growth stock is usually overvalued. Growth stocks have relatively high price-to-earnings ratios with high EPS resulting in high investment levels by investors. A value stock is a share in a company that tends to trade at a lower price relative to its fundamentals and thus considered undervalued by a value investor. Common characteristics of such stocks include a high dividend yield, low price-to-book ratio, and/or low price-to-earnings ratio. Value stocks require less investment from investors. However, many researchers posit that market-to-book ratio is a proxy for risk and hence there is a positive relationship between this ratio and stock returns (Fama and French: 1992, 1996; Vassalau and Xing: 2004), but this view is not accepted because P/B ratio essentially represents intangible assets.

Several researchers find that value stocks have outperformed growth stocks and hence they are identified to be more value relevant (e.g. Williamson: 1970; Basu: 1977; Chan and Lakonishok: 2004). It is also evidenced that a significant portion of value stocks’ superior performance is attributed to earnings surprises (e.g. Lakonishok et al: 1994; Chan and Lakonishok: 2004; Jagadeesh et al: 2004).

**VALUE RELEVANCE OF FIRM SIZE**

In value relevance research, firm size is often used as an extended variable to classify firms into small firms and large firms. The most commonly used variable to classify firms based on size is median market capitalization (Hodgson and Clarke: 2000; Chanderpaul: 2013). Equally, total assets of a firm are used as a basis for classifying firms into small and large firms. Sometimes, the volume of stock trading
is also used as a proxy for accounting choices, risk, growth or political costs (e.g. Freeman: 1987; Collins et al: 1997).

Only a few studies have investigated the value relevance of accounting variables under size and find a positive relationship between firm size and stock price (e.g. Bae and Jeong: 2007; Brimble and Hodgson: 2007). In recent years, a few studies directly refer to size as having value relevance (Hodgson: 2000; Bae and Jeong: 2007; Chang: 2007; Habib: 2010).

Collins et al (1997) find that book value is more important than earnings in small firms, but not larger firms and this finding is further validated by other studies (Collins et al: 1999; Chen et al: 2001; Gjerde et al: 2005).

Brimble and Hodgson (2007) examine the value relevance of earnings and book value in Australian Stock Exchange from 1974 to 2001. They find low value relevance of earnings, book value and combined variables as 0.10, 0.09 and 0.16 percent respectively. Specifically, they find that explanatory power for small firms is much higher when compared to large firms.

Hodgson and Clarke (2000) examine the value relevance of earnings and cash flows for 121 companies listed in Australian Stock Exchange from 1989-1996. Using annual stock returns as the dependent variable, they find that explanatory power and earnings response coefficients are more pronounced for large firms than small firms.

Bae and Jeong (2007) find that value relevance of accounting information to stock price is significantly smaller for chaebol- affiliated firms (R²=25%) and below average for whole sample (R²=34.5%). They also find that larger firms have higher explanatory power.

Chan and Zhang (2007) examine the cross-sectional relationship between firm’s accounting variables (earnings yield, capital investment, and change in profitability, growth opportunities and discount rate) and stock returns from 1983-2001 using data from CRSP data file. They find that all identified factors are highly significant (R² =16%), but there is no indication of an increasing or decreasing trend for the adjusted R² as size increases.
Inter alia, Habib (2010) finds that coefficient estimates on all the performance measures are much higher for large firms compared to their small firms.

Khanagha (2011) examined the value relevance of earnings and book value in United Arab Emirates for the period between 2001 and 2008 under price model with 136 firm-year observations and under return model with 119 firm-year observations from 17 companies. He found that the combined value relevance of book value and earnings was higher in small companies than in large companies with the $R^2$'s of 58% and 47% respectively.

Chanderpaul (2013) examines the value relevance of firms in Sri Lanka and finds that value relevance is positively related to firm size with $R^2$ in larger firms being higher at 53% than in small firms at 38% and this is mainly due to larger firms having higher disclosure than smaller firms.

**VALUE RELEVANCE OF INTELLECTUAL CAPITAL**

The impetus for the study of value relevance of intellectual capital (IC) comes from Lev et al (2006), who claim that 95% of stock volatility is induced by non-financial information. The main objective of financial reporting is to provide the users with information that leverages value creation from assets (Lev: 2001; Busacca and Maccarrone: 2007). It is held that this leverage effect comes from intellectual capital, which is non-existent in financial statements. With several studies documenting a decline in value relevance of accounting information (e.g. Collins, Maydew and Weiss: 1997; Dontoh et al: 2004), several studies find the reason for this decline in the non-consideration of intellectual capital (e.g. Lev and Sougiannis: 1996; García-Meca and Martínez: 2007). Hence it is posited that the ability of a firm to create value stems from both tangible capital and intangible capital, the latter stemming from the abilities of people in an organization (Firer and Williams: 2003; Okwy and Christopher: 2010).

The most disturbing element in the study of value relevance of non-financial information that is not found in financial statements is the use of the two terms, viz.,
intangible assets, and intellectual capital. Several researchers use these two terms interchangeably with a preference to the usage of the term, intellectual capital (Lev, Canibano and Marr: 2005).

It is also important to note that there is no universally accepted definition of IC (Zambon: 2003) and hence there are a plethora of definitions (Goh: 2005). Intellectual capital is defined as “the soft assets that cannot be found on a balance sheet but certainly has an impact on future success or failure (Haar and Sundelin: 2001).” It is also referred to as “knowledge-based assets” such as the possession of certain domain knowledge, applied experience, organizational technology, customer relationships, and professional skills that can be put in to use to create wealth and competitive edge in the market (Edvinsson and Malone: 1997).


The research on value relevance of intellectual capital has mainly taken two strands. First, many studies find that the disclosure of human capital expenditure has information content that is useful in estimating the behaviour of share prices (e.g, Lev and Schwartz: 1971; Rosett: 2001; Riahi-Belkaoui: 2003; Wyatt: 2009; Kim and Taylor: 2012). Second, many studies have been conducted on the influence of intellectual capital on company performance and this strand of research indirectly supports the view that an improvement in company performance from intellectual capital causes an improvement in market value (Kim and Taylor: 2012).

The study of value relevance of IC based on Ohlson model is an issue of high importance (Kaur and Nor: 2009), because the emphasis of the studies is based on the
theory of efficient market hypothesis (EMH) (Shukor, Ibrahim and Nor: 2009). Basically, several studies find that enhanced IC disclosure has (a) favorable capital market implication (Diamond and Verrecchia: 1991); (b) reduces adverse selection problem (Akerlof: 1970) and (c) improves market liquidity (Healy, Hutton and Palepu: 1999) by providing value relevant information (Vergauwen and Alem: 2005). Most importantly, several studies find a positive relationship between IC and stock prices (Aboody and Lev: 1998; Barth, Beaver and Landsman: 2001; Kim and Taylor: 2014). However, a few studies find no value relevance of IC or mixed results (Bontis et al: 1999; Ferraro and Veltri: 2011; Akhavan et al: 2012).

VALUE RELEVANCE OF OWNERSHIP CONCENTRATION

Kumar and Singh (2013) define a promoter as a person or a group of persons involved in the incorporation and organization of a corporation, and the term finds no recognition in the Indian Companies Act, 1956. But the term finds its expression in SEBI’s Disclosure and Investor Protection Guidelines, 2000 and Substantial Acquisition of Shares and Takeover Regulation, 1997 as ‘promoter or promoter group’ (Kumar and Singh: 2013). An important characteristic of a corporation is its ‘control by every shareholder.’ However, there are evidences that show concentrated ownership in companies in most countries leading to principal voting, rights, control over management and self-serving interests (La Porta et al: 1999).

In India also, one finds concentrated ownership of companies. Chakrabarti (2005) finds a large scale prevalence of pyramiding and tunneling effect of corporate ownership in India and Mathew (2007) finds that 49 per cent of BSE 500 companies have been owned, managed, controlled by promoters based on their shareholding. Generally, it is evidenced that the presence of dominant large shareholder or group can enhance their controlling ability, reduction in agency costs and high performance (Shleifer and Vishny: 1986, 1988). The average promoter shareholding in most firms in India ranging between 48.1% in 2002 (Topalova: 2004) and 50.31% in 2012 (Jaiswal: 2012).
The empirical evidences indicate mixed results on the relationship between accounting numbers and ownership concentration. Thomsen and Pedersen (2000) and Zechhouser and Pound (1990) find that price-to-earnings ratio and ownership concentration has a positive relationship. Al-Dhamari and Ismail (2013) find a positive relationship between ownership concentration, and predictive value of earnings numbers. It is also evidenced that there is a positive relationship between ownership concentration, and informativeness of earnings (Warfield et al: 1995; Vafeas: 2000; Fan and Wang: 2002; Zhao, Davis and Zhou: 2008). Chandrapala (2013) found a positive relationship between ownership concentration and value relevance of earnings and book value in the companies of Sri Lanka (Chandrapala: 2013), and


VALUE RELEVANCE OF CAPITAL STRUCTURE

Long back, Modigliani and Miller proposed that, in the absence of taxes, capital structure is irrelevant in the sense that it does not affect firm value. However, this capital structure irrelevance theory has been reasserted with the advocacy of relevance of capital structure with four sets of theories: signaling theory, agency theory, pecking order theory, and tradeoff theory. Signaling theory posits that when there is asymmetric information about the firm’s value, the manager has an incentive to signal his firm’s type by issuing debt (Ross: 1977). The agency theory (Jensen and Meckling: 1976) advocates that owner-manager behaves as an agent of firm resources that are financed by equity holders and debt holders and hence debt is considered as an instrument to pre-commit to constrain owner-managers (Hart: 1993;
The pecking order theory (Shyam-Sunder and Myers: 1999; Fama and French: 2002) suggests companies prioritize their sources of financing, first preferring internal financing, and then by debt, last by raising equity as the “last resort.” The most well known theory of capital structure is the trade off theory in which an optimal capital structure arises from a tradeoff between the tax benefit of debt on one hand and the bankruptcy by debt on the other (e.g. DeAngelo and Masulis: 1980; Frank and Goyal: 2005; Zechner: 2010). Trade off theory suggests that there is a need to have blend of debt and equity to have an optimal mix in the world of corporate taxes.

The main contributions to the value relevance of capital structure have come from Welch (2004) and Upneja and Hua (2006). Welch (2004) finds that (i) stock returns can explain about 40% debt ratio dynamics, but the remaining 60% of debt issuing is a mystery; (ii) zero-debt firms are eager to issue more equity even after having a median of 33% of firm value; (iii) firms that have underperformed the S&P 500 by 55% end up with an actual debt ratio of 37%, whereas firms that have outperformed the S&P500 by 79% with an actual debt ratio of 14%; (iv) the worst stock performers end up with debt ratios of 41%; and the best stock performers end up with debt ratios of 13%; and (v) the average firm shows no tendency to revert to its old debt ratio and instead allows its debt ratio to drift almost one to one with stock returns;

Upneja and Hua (2006) examine value relevance of equity, earnings and capital structure in the restaurant industry and find that (i) the incremental $R^2$ associated with earnings is generally less than the incremental $R^2$ associated with equity; (ii) the adjusted $R^2$ for both earnings and equity ranges from 0.54 and 0.77; and (iii) the addition of capital structure variable has no incremental explanatory power in explaining the market value of firm in the presence of earnings and equity.
VALUE RELEVANCE OVER TIME

The distinguishing feature of the study of the relationship between stock prices or returns and accounting information is the data set with a time horizon. Research on stock price reactions over short periods of time is referred to as event studies. But value relevance research focuses on the analysis of long-term relationship by using panel data, which may be called longitudinal analysis, time-series analysis or cross-section analysis. The purpose of longitudinal changes in value relevance of accounting information is to understand whether the existing financial reporting models are adequate to report the company performance in a changing reporting environment over a time horizon, which is again classified into several sub-periods based on turning points. However, longitudinal studies have no set pattern of time horizon and it ranges from 5 years (Perera and Thrikawala: 2010) to 54 years (Cooke et al: 2009). To cite Biesland (2009), “Event studies typically analyse stock price behavior centered on announcement dates for which the time window may be as short as a day or two. Association studies are not concerned with how fast the market reacts to new information, as their horizon ranges from three or four months…” In fact, value relevance research extends to find the association between stock prices or stock returns, and accounting information for a long period, usually covering five years to forty years or more. The value relevance over long windows is necessitated because there is a global shift from industrialized economies to high-tech, service-oriented economies and this shift requires an investigation of value relevance over time (Biesland: 2009). Time-series analysis refers to finding the value relevance over a long window without analyzing the trends in sub-periods. Cross sectional analysis of time series refers to the study of value relevance across sample population for each year.

In practice, all these three approaches have been used simultaneously in value relevance research. The testing of increase (decrease) in value relevance is based on the value of $R^2$. Two approaches have been used depending upon the trend in the $R^2$. First, if there is consistency in the trend, then the $R^2$'s of the beginning and ending
period are compared. This type of trend is called “secular trend.” If there is no consistency in the trend in the sense that there is a fluctuation in the $R^2$ for the period, the $R^2$ of each period is compared with each by using ordinary least square method to arrive at the trend value. This is referred to as “cyclical trend.” In value relevance studies, the cyclical trend analysis is adopted.

The empirical studies on time series do not have a set pattern of research. They are varied in nature.

Easton et al (1992) used 10-year windows and found that the adjusted $R^2$ between stock returns and accounting measures was 62% and the correlation at shorter time intervals was much lower.

Collins Maydew and Weiss (1997) found that the combined value relevance of earnings and book values had not declined over the past 40 years and, in fact, had increased slightly. However, the value relevance of bottom-line earnings declined over time, with increased value-relevance of book values replacing it.

Nwaeze (1998) studied value relevance of earnings and book value in highly regulated electric utilities of US. He found that (i) a considerable alignment of the market and book values for utilities; (ii) the contribution of earnings change to explain returns diminishing markedly in the presence of earnings levels; (iii) earnings level complementing book value in explaining market value for manufacturing firms, while earnings change complementing earnings level in explaining returns; and (iv) the market and accounting values exhibiting pronounced misalignments in returns-earnings models.

Francis and Schipper (1999) observed a significant decline in returns to three of the five accounting based hedged portfolios. Results also reported that value relevance decreased.

Lev and Zarowin (1999) studied the relevance of accounting information for the period between 1978 and 1996. They found a decrease in the value relevance of accounting information and the reason was attributed to non-reporting of intangible assets.
Ely and Waymire (1999) examine the changes in the value-relevance of accounting numbers over the tenure of different accounting standard-setting bodies. Their evidence indicates a decline in the value-relevance from the APB era (1960-73) to the FASB era (1974-93) when the return model is used. However, when the price model is used, their results reveal an increase in the value-relevance from the APB era (1960-73) to the FASB era (1974-93).

Ali and Hwang (2000) used accounting information of manufacturing firms in 16 countries for 1986-1995 and reported that the value relevance of financial reports is lower for countries where the financial systems are bank-oriented rather than market-oriented. Similar results were received for the countries where the private sector is not a part in the standard setting process and where tax rules have a greater impact on financial accounting measurements.

Hellstrom (2005) investigates the value relevance of accounting in the Czech Republic in 1994-2001 by taking Sweden as a benchmark country for comparison. The results show that the value relevance of accounting information (i) has increased during the research period; and (ii) is lower in the Czech Republic than in Sweden.

El Shamy and Al-Qenae (2005) investigate the change in the value-relevance of earnings and book values in equity valuation over the last 20 years in Kuwait. They find that (i) earnings and book values, jointly and individually, have significant explanatory power for securities prices over the last 20 years; (ii) the combined value-relevance of earnings and book values has increased over time; (iii) the incremental value-relevance of earnings has increased over time while that of book values has declined; and (iv) the combined value-relevance of earnings and book values has improved and the incremental explanatory power of earnings (book values) has increased (decreased) since the adoption of IASs in 1990.

Goodwin and Ahmed (2006) investigated the value relevance of earnings and intangible assets for Australian firms over a 25-year period (1975-1999) with their results only weakly supported a decline in earnings value relevance and did not support the position that value relevance of financial statement information declined.
Brimble and Hodgson (2007) examined whether the relevance of conventional earnings accounting information for valuation has declined in Australia over a recent period of 28 years. They found that value relevance of core accounting earnings did not decline and book values were relatively less important in Australia when compared to the USA.

Gjerde et al (2007) studied value relevance of accounting information in Norway for the period between 1965 and 2004. They found that value relevance of accounting information has not decreased during that period and that the change from the Continental-European model to Anglo-American model had a positive effect on the value relevance of financial reporting information. However, Knivsfla and Saettem (2007) re-examine Norwegian data and find no change in value relevance in the time period 1965 to 2004.

Chandra and Ro (2008) find that the combined value relevance of earnings and revenues has stayed constant and that the value relevance of earnings declined while the impact on price from revenues did not decrease.

Jenkins, Kane and Velury (2009) find that the value relevance of earnings is higher during economic contractions if an estimate for future earnings expectations is included in the model, and they show that the value relevance of expected future earnings is greater during expansions.

Perera and Thrikawala (2010) found relations between market price per share and selected accounting information of commercial banks for 5 years in Sri Lanka. According to their findings, there is a positive relationship between accounting information and market price per share.

Glezakos et al (2012) related book value and earnings per share to share prices in Athens Stock Exchange for 38 firms. They found that the value relevance of book value and earnings per share increased over time.

Hail (2012) found the loss in relevance of the income statement and stability of balance sheet, and higher value relevance in countries with higher shareholder protection.
On the whole, during there has been an interest in the long term development of accounting information’s relevance to investors. Most of this research has been conducted in the U.S. where there is rather undisputed evidence that accounting information has lost some of its relevance over time (Collins, Maydew, and Weiss: 1997; Chang: 1998; Brown, Kin, and Lys: 1999). Several explanations for the loss of value relevance under long-term analysis is offered in the existing literature, including an increased portion of non-information-based stock trading (Dontoh, Ramakrishnan, and Ronen: 2004), an increased volatility in stock returns (Francis and Schipper: 1999), an increased frequency of negative earnings and non-recurring items (Collins, Maydew, and Weiss: 1997; Hayn: 1995) and an increased change in pace (Lev and Zarowin: 1999. These explanations are not mutually exclusive. Firms operating in an uncertain environment can be more prone to report losses and irregularities. Similarly, an accounting system’s failure to account for changes often creates losses and irregularities among firms.

Another strand of research attributes the declining value relevance of information to the increasing gap between the market value and the book value of equity of most companies in most countries (e.g. Eccles and Mavrinac: 1995; Ely and Waymire: 1996; Ramesh and Thiagarajan: 1996; Collins, Maydew and Weiss: 1997; Francis and Schipper: 1997; Lev and Zarowin: 1998).

To sum up, the value relevance literature provides mixed results on both the direction and source of the change in the value relevance of accounting information and this is mainly due to interplay of various accounting measurement deficiencies and changes in the economic structure of the firms.

VALUE RELEVANCE ACROSS INDUSTRIES

It is posited that the value relevance of accounting information varies according to industry sectors due to underlying economic activities (e.g. Scheere: 1980; Francis and Schipper: 1999; Gjerde et al: 2005). The industry differences in value relevance are tested by studying earnings and book value mainly. A number of
Researchers have provided evidence that the effect of earnings and book values on stock prices is different for different industries (Hughes: 2000; Boone: 2002; Zhao: 2010) or different countries (e.g. Goodwin and Ahmed: 2006; Habib: 2004; Filip and Raffournier: 2010).

It is generally evidenced that there is no consistency in the results across industries. Using price and return models and data from US markets, it is evidenced that earnings and book value are largely irrelevant in wireless communication industrial sector, which is characterized by intangible assets intensity (Amir and Lev: 1996). Earnings are more value relevant in US companies than in German industrial and services companies (Harris et al: 1994). Book value is more value relevant than earnings in UK services and industrial sectors (Vardavaki and Mylonakis: 2007) and in Australian companies (Whelan: 2004). The value relevance of book value has increased in Korean industrial and service sectors (Gee-Jang, 2009) and in Indonesian sectors (Suwardi: 2009), while earnings have been found to be irrelevant (Gee-Jang: 2009).

To conclude, the selected empirical studies show mixed results, which are industry-cum-country specific. However, a broader conclusion is that earnings have higher value relevance across industries.

**VALUE RELEVANCE UNDER NATURE OF TRANSACTIONS**

A variant of industry-centric value relevance studies is the study of value relevance in finance-firms vis-à-vis non-finance firms. Compared with other industries, financial instruments dominate financial institutions’ financial statements and major assets are loans requiring fair value estimates (e.g. Khurana and Kim: 2003; Barth et al: 2001). Barth et al (1996) find that fair value estimates of loans and long-term securities add incremental explanatory power to the bank share prices. Barth et al (1999) find that regulated industries, such as financial institutions and utilities, have lower earnings response coefficient (ERC) than other industries. Wong (2000) finds that the disaggregated derivative disclosure provides useful information
for stock price level. Ahmed et al (2006) find derivatives providing additional information contents to equity valuation. Lastly, Asthana and Chen (2007) investigate the change in the value-relevance of earnings and book value information in the financial industry compared to other industries from 1970 to 2005 in view of prior literature rendering mixed results using Ohlson’s model. Using 34,252 firm-year observations in the financial industry and 160,206 firm-year observations in other industries, they find increasing value-relevance for earnings and book value for the financial and other industries, but there is slower growth trend in financial sector. But the study by Asthana and Chen (2007) were based on fair value estimates for financial sector. The most important study on the value relevance in finance companies vis-à-vis non-finance companies was also done by Khanagha (2011) based on the historical cost-based data of companies listed in United Arab Emirates for the period between 2001 and 2008. He found the combined $R^2$ of book value and earnings were higher at 76% in non-finance companies than at 62% in finance companies for the period 2001-08 and the results were statistically significant at 0.01.

Though several studies find that value relevance of earnings and book value is generally higher in finance companies than in non-finance companies based on fair value estimates only, there is a dearth of research on a comparative study of value relevance in finance and non-finance companies based on historical cost accounting information with the exception of the study by Khanagha (2011) in the companies listed in Abu Dhabi Stock Exchange, which was based historical cost-based accounting information.

VALUE RELEVANCE IN SOEs

From an economic perspective, it is found that state-owned enterprises (SOEs) or government-owned enterprises in a competitive market are inferior to privately-owned enterprises (Megginson and Netter: 2001; Sun et al: 2002). It is evidenced that state ownership is the basic cause of all sorts of problems facing the listed SOEs, but some studies find that state shareholding is not always bad (e.g. Megginson et al:
1994; Chen and Wang: 2004, Bai et al: 2004). It is generally evidenced that stock price formation is very low in SOEs due to state holding higher percentage of shares that are not tradable in the open market (Hovey et al: 2003; Wang and Jiang: 2004; Wang: 2005). Gao (2002) posits that a higher frequency of a stock trading increases the chance of higher price formation and this finding is further supported with the findings from Liu and Liu (2007); Firth, Fung, and Rui: 2007; and Jiang and Habib: 2012). But this higher price formation in SOEs has been found to be further hindered by lack of contestable managerial job market, absence of pay performance sensitivity and politically-determined managerial positions (Lin: 2001) on one hand and the government intervention often diverting managerial objectives away from profit maximizing and toward objectives such as infrastructure development and employee and social welfare maximization (Liu: 2006).

Basically, the study of value relevance of accounting information in SOEs has been spurred by the focus on the impact of state ownership on firm performance (Sun and Tong: 2007). The firm performance is evidenced to be hindered by state interference in management (Sami et al: 2009). However, some studies find that a proactive state ownership will increase firm performance leading to positive stock price formation (Ellul et al: 2007; Hope et al: 2009). Specifically, Tian (2001) finds that corporate value decreases with an increase in shareholding. Hoovey et al (2003) and Che (2007) find a negative relationship between firm value and state ownership. However, Sun et al (2002) find that government ownership is positively related to firm performance in China.

**INDIAN STUDIES**

An interesting feature of capital market research in India is that the research has been contributed by researchers in economics, finance and accounting. Much of the literature from economists and finance theorists focuses on dividend behaviour and its determinants and this is characterized by an indirect reference to value relevance. Only a few studies from accounting researchers have been conducted on
value relevance of accounting information. Therefore, the research on value relevance of accounting may be derived from the contributions from other disciplines, especially from dividend behavior researchers. An important conclusion is that the findings vary due to differences in the choice of firms, sample period and econometric methods chosen for empirical investigation (Nirmala, Sanju and Ramachandran: 2011). In this background, the literature on value relevance research in India may be broadly divided into (i) Valuation Studies; and (ii) Value Relevance Studies.

(i) Valuation Studies:

Many studies have been conducted in India on the relationship between stock prices and various accounting variables. But these studies have mainly focused on accounting variables influencing financial performance and valuation of shares. An important feature of these studies is that much of the research has focused on dividend and earnings alone.


Equally, earnings is also found to influence share prices positively (Bhole: 1980); Zahir: 1992; Sen and Ray: 2003; Sharma and Singh: 2006; Bapat and Raithatha: 2009). Further, if Srivastava (1968) reports that retained earnings do not influence share prices, Chawla and Srinivasan (1987) present evidence of retained earnings influencing share prices.

(ii) Value Relevance Studies:

It is important to note that studies on value relevance in India with an emphasis on the relationship between accounting variables and stock prices are very much limited.
Vishnani and Shah (2008) studied the value relevance of published financial statements of 24 Sensex companies in India with the time frame of 10 years between 1996-97 and 2005-06. The data set includes P/B ratio, net worth, cash flow from investing activities, profit after tax (PAT), net cash flow from operating activities, and return on net worth. The study finds that a very negligible value relevance of balance sheet, cash flow statement and income statement, but the coefficient value of RONW is highly statistically significant thus indicating ratios are more value relevant than absolute values. The researchers observe that this negligible value relevance is mainly due to Indian investors generally focusing on short term capital gains, and tending to be speculative or irrational for unusual events, instead of using published financial data in stock valuation.

Padmini Srinivasan and Narasimhan (2010) examined value relevance of consolidated earnings and cash flows based on financial statement information of 59 firms with sales and assets of subsidiaries being more than 20% of the parent companies for the period 2002-08 with return model being examined for the period 2006-08. The study found that (i) The correlations between the return and parent-only and consolidated earnings were strong with the coefficients of 0.42 and 0.31 respectively as against return and cash flows being correlated with very low coefficients of 0.05 and 0.03 respectively; and (ii) The $R^2$ of earnings and cash flow in relation to returns was 19% for the period.

Mohan and John (2011) investigated value relevance of book value, earnings and return on equity in 21 frequently traded listed banks of A group in BSE for the period between 2006-07 and 2009-10. The selection of these banks was based on the assumption that these banks were more transparent in their financial reporting practices. They found that (i) the explanatory power of book value ranged between 42% and 78% with an increasing trend; (ii) the explanatory power of earnings was lower than that of book value with the value ranging between 59% and 66% with a decreasing trend; (iii) the explanatory power of ROE was the lowest with the adjusted $R^2$ ranging between -1% and -8%.
Sharma, Kumar and Singh (2012) examined the value relevance of financial statements in Indian corporate sector based on the sample data of 71 non-financial CNX 100 firms listed at the NSE for the period 2000-2008. The findings were that (i) value relevance of financial statements was negligible; (ii) some ratios showed significant association with stock market indicators; and (iii) the value relevance of return on net worth (RONW) was statistically significant.

Das and Samanta (2012) found dividend policy being the most determinant factor in shareholders’ wealth creation in Indian banking sector.

Manisha Khanna (2014) examined the value relevance of earnings and book value under Ohlson (1995) model in 241 firms in BSE-500 based on the data for the period between 2006 and 2010 with 1,205 firm-year observations. The results provided evidence that (i) accounting information was value relevant; (ii) the combined value relevance of earnings and book value declined with insignificant incremental information content.

CONCLUSION

Value relevance of accounting information is a sub-set of market based accounting research (MBAR). Value relevance research is founded on the assumptions that the capital market is efficient and share prices are a function of basic accounting variables. While establishing value relevance of accounting information, $R^2$ is used as a proxy for value relevance. The review of literature points towards three strands of value relevance research, viz., the exclusive approach, the inclusive approach, and the eclectic approach. In fact, these approaches have evolved over time. The exclusive approach is basically derived from Ohlson model, which in turn is founded on fundamental analysis and the approach restricts itself to the study of value relevance of earnings, book value and dividends. But much of the research under Ohlson model focuses on the value relevance of earnings and book value alone and leaves out dividend based dividend irrelevance theory. However, in recent years several empirical studies find a stronger association between share prices and
dividends and hence the inclusion of this variable has gained momentum under exclusive approach. The investigations under Ohlson model from several researchers indicate mixed results. The inclusive approach extends the Ohlson model by including numerous accounting variables under “line items” and qualitative variables and there is no limit for this extension and the research is expanding very fast. The eclectic approach is a blend of exclusive approach and inclusive approach and it has become accepted approach in value relevance studies. All these approaches aim at quantifying value relevance through relative association, incremental association and marginal information content analysis and in fact these orientations have given rise to new approaches per se.

The heart of value relevance research is model building. Basically, value relevance models include return model and price model. Return model envisages the study of association between returns measured in terms of share price changes between two points of time plus dividends and share prices. The early history of value relevance research indicated an emphasis on the investigation of value relevance of returns and the results indicated substantially lower explanatory power of returns. Due to inherent deficiencies of return model, value relevance researchers have shifted their emphasis on price model, which investigates the association between share prices and accounting variables. The result is an explosion in price-model related value relevance research by considering as many variables independently and jointly as possible and the results are mixed. Generally, it is found under cross-sectional analysis that share prices are positively related to earnings, book value, dividends, cash flow, firm size, firm age, profitability, intangibles, debt-asset leverage, intellectual capital and investor risk, and inversely related to ownership concentration. With regard to value relevance over time, most of the studies find decreasing value relevance of earnings as against increasing value relevance of book value, and dividends. The general conclusion of value relevance studies in India point towards low value relevance of accounting information.
From the viewpoint of Indian corporate sector, much of the research has been done on dividend policy and dividend behaviour on one hand and determinants of valuation of shares on the other. Not much research was found to be done on value relevance of accounting information. A few studies that were conducted focused only on cash flow and traditional accounting variables consisting of earnings, book value and dividends. It was found that no value relevance research was conducted in Indian corporate sector from the viewpoint of nature of industry, nature of transaction, ownership structure, intellectual capital, intangible assets, investor risk, firm age, firm size, assets, value added, sales, sales growth, capital intensity, and productivity. In this background, the present study was taken up to bridge the gap in value relevance research in Indian corporate sector. The results of the present empirical study have been in Chapters III, IV and V.