



Value Relevance of Accounting Information in India Capital Market Post-1991 Reforms

Gregory D. Lyimo¹

Department of Accounting and Finance
Institute of Finance Management

Abstract

This study examines the value relevance of Indian Generally Accepted Accounting Principles (GAAPs) after introducing profound financial reporting and firm governance reforms in India. Specifically, it scrutinises the association between share prices and both earnings and the book value of equity using 33,643 firm year observations. It employed robust regressions to estimate year-wise regression over the sample period that ranges from 2002 to 2015. The results reveal that accounting information proxied by earnings and book values of equity is value relevant over the sample period.

The study also estimated the trend of value relevance of accounting information over the sample period. It was found that there is an insignificant liner decline in the value relevance of accounting information in India over the sample period. This problem needs to be addressed by implementing reforms in Indian GAAPs to increase the trend of value relevance of accounting information. The increase in value relevance will boost investor's confidence and increase the level of foreign and domestic capital inflows in Indian capital markets.

Keywords: Value relevance, accounting information, GAAPs, IFRS, reforms

Introduction

This study investigates the value relevance of accounting information in India, whereby the profound transformation in terms of the firm's governance and financial reporting has been made since the mid of nineties. Specifically, it examines the association between the share prices and both earnings and book value of equity in India capital markets after implementing the reforms. The

¹ Corresponding Author: gregory.lyimo@ifm.ac.tz.

study aims to examine whether the reforms have improved the value relevance of accounting information and the trend of value relevance.

The liberalisation of the economy in India in the mid-nineties increased competition and the need to meet international demands for high-quality accounting information for capital markets in India (Anderson and Lanen, 1999). To meet these international demands for high-quality information, the Institute of Chartered Accountants of India (ICAI) has been working together with the Accounting Standard Board, Auditing and Assurance Standard Board, Ministry of Corporate Affairs, as well as the Securities and Exchange Board of India in regulating accounting practices and improving the quality of accounting information (Jain, 2011; Narasimhan and Srinivan, 2012). This is geared toward improving transparency, harmonising accounting standards and integrating India with other international capital markets.

Recognising the need to improve accounting information, the ICAI has developed accounting standards that are in line with the International Financial Reporting Standards (IFRS) (Jain, 2011). So far, 32 Indian GAAPs have been issued by ICAI in connection with the IFRS covering major aspects of financial reporting (Jain, 2011). This development shows the importance of improving transparency and enhancing comparability of accounting information across countries. This attempt has resulted in a large inflow of foreign direct investment in India, which increased from \$224 million as reported in 1992/1993 to an average of \$20 billion as reported from 2006/2007 onwards (Mohan, 2011).

Indian GAAPs in line with the IFRS are expected to improve transparency and comparability to meet the need for high-quality accounting information and value relevance accounting information over the period of reforms. Specifically, it is predicted that earnings and book value of equity will be significantly associated with share prices after implementing the reforms.

Therefore, this study is motivated to investigate whether financial reporting reforms made in the past decade have improved the value relevance of accounting information. This investigation is significant because of several reasons. First, it helps to understand whether the Indian GAAPs developed in line with the IFRS improve the value relevance of accounting information. Second, it provides information to policy makers on the trend of value relevance of accounting information based on the Indian GAAPs. Finally, it offers

information to policy makers on whether the switch to the IFRS will increase the value relevance of accounting information.

Literature Review

Value relevance refers to the association between accounting information and share prices (Ball et al., 2008; Francis and Schipper, 1999). Accounting information is value relevant if it can predict the relationship with the share prices. This stream of research is rooted in earlier work of Ball and Brown (1968) which investigated information content and timelines of the reported earnings. Since then, there has been a growing research interest in assessing the value relevance of accounting information for policy implication. Many of these studies have used the earnings and book value of equity to investigate the value relevance of accounting information in capital markets in emerging and developed economies (Barrak, 2011; Barth et al., 2008; Chalmers et al., 2010; Easton and Harris, 1991; Kothari, 2001; Werner, 2011; Okafar et al., 2016). However, other studies have used elements of financial statements such as sales, operating cash flow, comprehensive income, financial assets and liabilities, as well as performance measures based on local and international standards (Albring et al., 2010; Ebaid, 2012; Plantin et al., 2008).

Several studies have assessed whether the convergence to IFRS leads to high value relevance of accounting information for the capital market in the attempt to promote IFRS across countries (Ball et al., 2008; Bartov et al., 2005; Beckman et al., 2007). Other streams of research have investigated whether the accounting information generated by local accounting standards is value relevant in promoting local GAAPs (Barrak, 2011; Chen et al., 2001; Ebaid, 2012; Kim and Key, 2014; Narasimhan and Srinivan, 2012; Olugbenga and Atanda, 2014).

Value relevance studies have not reached the conclusion on which accounting standards lead to more value relevant accounting information (local accounting standards vis-à-vis IFRS). On one hand, the studies showed that the reforms in local accounting standards have led to value relevance accounting information. For instance, Chen et al. (2001) examined the value relevance of Chinese GAAPs on equity valuation for firms listed in the Chinese stock exchange using 2,976 firm year observations from 1991 to 1998. Using the earnings and book value of equity to proxy value relevance of accounting information, they found that both earnings and book value per share explained share prices. Likewise, Chalmers et al. (2010) investigated the value relevance of accounting information for pre-

and post-2001 reforms of introducing accounting system for business enterprises in China-based on the sample of 1,397 firm year observations for pre-reforms from 1997 to 2000 and 3,183 firm year observations for post-reforms from 2001 to 2004. Using the earning, book value per share, leverage and cash flow from operation, they affirm that value relevance increased after introducing the new local GAAPs.

Barrak (2011) investigated the value relevance of accounting information based on the local accounting standards in Saudi Arabia from 1993 to 2009. Based on 997 firm year observations, the study found that earnings and book value of equity are value relevant after implementing the reforms of their local GAAPs. The results also reveal that there is a decline in value relevance of earnings and book value. Using different accounting performance measures, Ebaid (2012) assessed the incremental value relevance of the key accounting measures of performance in the emerging market. They found that the earnings have the highest incremental value relevance relative to total comprehensive income, sales and cash flow from operations.

Similarly, Kim and Key (2014) examined the value relevance of earnings and book value of equity in Korean stock market from 1982 to 2011. Using a sample of 12,109 firm year observations, they showed that earnings and book value of equity are value relevant over the sample period. They also affirmed that the value relevance of earnings and book values of equity has been increasing. Moreover, Hellström (2006) assessed the value relevance of accounting information in Czech Republic from 1994 to 2001 using 72 firms. The study revealed that the value relevance of accounting information increased over the sample period. However, when comparing the value relevance with Swedish firms, the study found that the value relevance of Swedish firms outperforms Czech Republican firms in estimating share prices. Likewise, Alali and Foote (2012) explored the value relevance of IFRS in Abu Dhabi Stock Exchange. Using Ohson's (1995) model and 65 firms listed from 2000 to 2008, they revealed that Earning per Share (EPS) and book value are positively related to share prices. The study showed that the value relevance of accounting information has improved since the inception of the Abu Dhabi stock market.

Shehzad and Ismail (2014) assessed the value relevance of accounting information in Pakistan for 19 banks listed in the Karachian Stock Exchange. They discovered that EPS is more relevant than book value in explaining share

prices. Furthermore, Olugbenga and Atanda (2014) investigated the value relevance of accounting information for the companies listed in Nigerian Stock Exchange from 1992 to 2009. The study revealed that accounting information is value relevant. Moreover, they discovered that value relevance does not have a proper pattern. Also, Vijitha and Nimalathasan (2014) examined the value relevance of Sri Lanka manufacturing companies. They revealed that the accounting information has higher incremental value relevance with EPS. Similarly, Ebaid (2012) investigated the value relevance of accounting based on performance measures in Egypt. The study used a sample of 115 firms listed in the Egyptian Stock Exchange and found that the value relevance is more pronounced for the bottom-line item of the income statement.

Several studies have examined the value relevance of accounting information after introducing IFRS. For instance, Prather-Kinsey (2006) investigated the value relevance of both book value of share and earnings on equity valuation in South Africa and Mexico for the sample period from 1998 to 2000 after introducing IFRS. The study showed that both earnings and book value of share are value relevant in both countries after introducing IFRS. Goncharov and Hodgson (2011) assessed the value relevance of the components of comprehensive income in explaining the share prices across 16 developed countries. They revealed that share prices are better explained by the net operating income than other components of income. Similarly, Ngole (2012) studied the effect of IFRS adoption on value relevance in the capital markets; namely Botswana, Johannesburg, Cairo and Alexandria Casablanca as well as Nairobi Stock Exchanges. Based on a large sample of 347 firms from 2002 to 2009, the study revealed that overall adoption of IFRS increases the value relevance of accounting information. The study also affirmed that IFRS adoption in those markets leads to more value relevance accounting information in code laws countries relative to common laws countries.

Kargin (2013) examined the impact of IFRS on the value relevance of accounting information in Turkey. The study used 1954 firm year observations for companies listed in Turkey from 1998 to 2011 and found an increase in value relevance after the adoption of IFRS. Moreover, Lam, Sami and Zhou (2013) assessed the value relevance of accounting information from the emerging market of China. Using 11,199 firm year observations of companies listed in the Chinese stock market, they found that the value relevance is more prominent in small companies and companies with lower growth rates.

Furthermore, Okafar et al. (2016) examined the value relevance of accounting information after the adoption of IFRS in Canada. They used Ohson's (1995) model and modified Balachandran and Mohanran's (2011) models to examine the incremental value relevance after the adoption of IFRS. Using archival data of 646 companies listed in the Toronto Stock Exchange, they found that the accounting information prepared under IFRS depicts higher value relevance than the accounting information prepared under GAAPs. Likewise, Kousenidis et al. (2010) assessed the value relevance of accounting information in Greece before and after the adoption of IFRS accounting. The finding revealed that the adoption of the IFRS increased the incremental value relevance of earnings. However, the incremental value relevance of the book value declined.

Studies have shown that neither reforms of local standards nor IFRS have increased the value relevance of accounting information in emerging and developed economies (Albring et al., 2010; Werner, 2011). For instance, Werner (2011) assessed the value relevance of pension accounting information before and after introducing fair value measurement in the US. The results revealed that introducing fair value measurement for pension does not increase the value relevance of pension accounting information. In addition, Albring et al. (2010) compared the value relevance of GAAP and non-GAAP performance measurement in the US. Their results revealed that non-GAAP performance-based measures are more value relevant than GAAP performance measures.

Subramanyam's and Venkatachalam's (2007) study associated both earnings and cash flow from an operation with intrinsic value of equity. They found that earnings explain better intrinsic value of equity relative to cash flow from operation. Moreover, Kim and Kross (2005) investigated the value relevance of earnings and book value of equity in the US from 1972 to 2001. Using a large sample of 100,266 firm year observations, they discovered that earnings and book value of equity are value relevant, however, the relationship is declining.

Moreover, Chen et al. (2006) assessed the effect of introducing fair value measurement in the US on the association between accounting information and market information. Based on 43,908 firm year observations from 1984 to 2003, they revealed that the association between accounting information and market information did not increase after introducing fair value measurement. Khanagha (2011) also examined the value relevance of accounting information in the United Arab Emirates. Using a small sample with 136 firm year

observation, the study found that the value relevance declined after the introduction of IFRS. However, these results may be attributed to the small sample size.

Devalle et al. (2010) investigated the value relevance of accounting information in European markets after the introduction of the IFRS from five stock exchanges namely, London, Frankfurt, Paris, Milan and Madrid. They revealed a slight increase in value relevance that suggests earnings have more influence on the share prices after the adoption of IFRS. On the contrary, the value relevance of book value of equity declined after the adoption of the IFRS. Similarly, Narasimhan and Srinivan (2012) examined the value relevance of consolidated financial statement in India-based firm from 2004 to 2005 and 2007 to 2008 after the profound reforms of local Indian GAAPs. They reported that the accounting information is not value relevant over the sample period. However, they affirmed that only annual parent financial statements are value relevant.

In summary, the studies that investigate the value relevance of accounting information based on local standards and IFRS have mixed findings. As a result, this study examines the value relevance of accounting information in the Indian capital market to shed light on the findings from the emerging market after implementing the profound reforms of 1991. This study differs from the study that was conducted by Narasimhan and Srinivan (2012) on the Indian market based on the following reasons: First, this study uses a larger sample of 33,643 firm year observations and a longer sample period of 14 years. Second, the current study uses year wise estimation, which is relevant in understanding of the trend of the value relevance over time rather than pooled regression. Therefore, this study sheds new findings from the emerging market of the value relevance of Indian GAAPs post-1991 reforms.

Research Methodology

This study used a quantitative research approach to investigate the value relevance of accounting information in estimating the share prices in Indian markets. Specifically, it employed multiple regression models to examine the association between accounting information and share prices. The discussion of hypothesis development, model specification, data and sample selection are presented below.

Data and Sample Selection

The data for the present study has been extracted from the Prowess database, which is maintained by the Centre for Monitoring Indian Economy. The sample period for this study is 14 years, from 2002 to 2015. Key accounting information earnings and book value of equity for each financial calendar have been extracted from the database. The share price information, which is three months after the financial calendar, was obtained from the same database.

The following criteria were met for a firm to be selected: first, the firm must be part of the Bombay Stock Exchange (BSE); second, the firm must have accounting information (earnings per share and book value of equity) extracted from consolidated financial statement; and finally, the share price information should be taken after three months of accounting calendar. Table 1 depicts the sample size based on a year-wise classification.

Table 1: Sample Size Year-wise

Year	Number of Firms Observations
2002	1160
2003	1219
2004	1834
2005	2232
2006	2729
2007	2820
2008	2610
2009	2311
2010	2788
2011	2813
2012	3519
2013	2211
2014	2423
2015	2974

Notes: Sample size classified in year-wise

Hypothesis Development

The question of whether local GAAPs and IFRS lead to value relevance accounting information is still a paradox (Devalle et al., 2010; Kargin, 2013; Ciftci et al., 2014; Chalmers et al., 2010; Narasimhan and Srinivan, 2012; Okafar

et al., 2016). However, many studies have supported the view that the improved local standards and IFRS lead to more value relevance of earnings and book value of equity for predicting the share prices of firms (Barrak, 2011; Chen et al., 2001; Ciftci et al., 2014; Kargin, 2013). For instance, Ciftci et al. (2014), discovered positive link between both earnings and book value of equity and share price in US for intangible intensive industries. Okafar et al. (2016) revealed significant positive link between earnings and share price for Canadian firms. Likewise, Kargin, (2013) revealed a significant role of earnings and book value of equity in influencing significant positive share prices of Turkish companies. Moreover, Barrak, (2011) documented a significant positive link between earnings, book value of equity and share price of Saudi Arabia companies. Based on this theoretical argument, it is hypothesised that earnings and the book value of equity are value relevant in Indian capital markets.

Hypothesis 1: *Earnings and book value of equity are value relevant; significantly related to share price in 2002-2015.*

Since the mid-nineties, India has been implementing several reforms on financial reporting and governance. Some of these reforms include: Kumar Mangalam Birla Committee Report on Corporate Governance of 1999; Naresh Chandra Committee on Corporate Audit and Governance of 2002, Major Revision of Clause 49 of 2004, Corporate Governance Voluntary Guidelines for Companies of 2009 and Indian Company Act of 2013. It is expected that the value relevance of accounting information has increased over time, thus reflecting the new improvement in financial reporting. Therefore, the current study hypothesised the following:

Hypothesis 2: *Value relevance of earnings and book value of equity have increased over time from 2002 to 2015.*

Model Estimation

To estimate the link between market value and accounting data, the study adopted the Ohlson (1995) theoretical framework. As a result, the study used the price model which is extensively used in value relevance studies (Barrak, 2011; Chalmers et al., 2010; Collins et al., 1997; Goncharov and Hodgson, 2011, Kim and Kross, 2005; Okafar et al., 2016). The study used Collins et al. (1997)

and Kim and Kross' (2005) models to estimate the value relevance of accounting information and the trend of value relevance over time using equations 1 to 5.

$$P_{i,t} = \phi_0 + \phi_1 EPS_{i,t} + \phi_2 BVPS_{i,t} + \nu_{i,t} \quad (1)$$

$$P_{i,t} = \beta_0 + \beta_1 EPS_{i,t} + \nu_{i,t} \quad (2)$$

$$P_{i,t} = \lambda_0 + \lambda_1 BVPS_{i,t} + \nu_{i,t} \quad (3)$$

$$R^2 = \eta_0 + \eta_1 Time + \psi_t \quad (4)$$

$$R^2 = \delta_0 + \delta_1 Time + \delta_2 Time^2 + \nu_t \quad (5)$$

Where:

$P_{i,t}$ = Share price for the firm three months after the annual report for firm i at time t

$EPS_{i,t}$ = Earnings per share for firm i at time t

$BVPS_{i,t}$ = Book value of equity per share for firm i at time t , $\nu_{i,t}$ = error term for firm i at time t

In line with the prior studies, the study used equation 1 to estimate the value relevance of the earnings and book value of equity. It is predicted that ϕ_1 and ϕ_2 will be positive and significant to show the value relevance of earnings and book value of equity in predicting the share prices (Barrak, 2011; Collins et al., 1997; Chalmers et al., 2010). However, there is no theoretical meaning attached to the coefficient ϕ_0 , hence it is expected to be 0. Equation 1 is decomposed into equations 2 and 3 to estimate incremental explanatory power of earnings and book value of equity, thus determining which variable is more value relevant. Therefore, β_1 and λ_1 are expected to be positive and significant.

Moreover, in investigating the trend of the value relevance, equations 4 and 5 are used and η_1 , δ_1 as well as δ_2 are predicted to be positive and significant to show that the value relevance of earnings and book value of equity increased.

Empirical Results and Discussion

Descriptive Statistics

Table 2 shows descriptive statistics of the variables used to estimate the association between the share prices and both the earnings and the book value of equity in the price model. The share prices have a mean value ranging from 44.55 to 242.53. This mean value shows that there is a fluctuation in the share prices over the sample period. Similarly, Narasimhan and Srinivan (2012) reported a mean value of 81.25, which is within the range of the average share price. The mean value of earnings per share ranges from 4.83 to 10.67. Narasimhan and Srinivan (2012) also revealed the earnings per share of 6.62 which is within the range of earnings per share as depicted by the present study. In addition, the mean value of book value of equity per share ranges from 50.29 to 143.52, contrary to Narasimhan and Srinivan (2012) who reported a lower mean of 4.85 in India.

Table 2: Descriptive Statistics

Year	N	P		EPS		BVPS	
		μ	q50	μ	q50	μ	q50
2002	1160	73.69	16.35	5.33	1.84	70.79	36.08
2003	1219	44.55	15.95	4.83	1.20	58.29	28.01
2004	1834	96.33	17.25	7.32	1.97	61.43	28.95
2005	2232	115.15	29.85	7.56	2.24	54.77	24.80
2006	2729	173.76	35.35	7.30	2.37	50.29	22.30
2007	2820	148.47	35.45	8.32	2.89	55.49	25.02
2008	2610	176.65	45.90	10.67	3.90	69.88	35.86
2009	2311	92.79	23.35	9.14	2.83	83.47	41.73
2010	2788	170.19	42.12	9.14	2.10	74.44	36.58
2011	2813	168.16	41.20	9.25	2.63	123.46	36.28
2012	3519	131.76	25.15	6.73	1.23	106.73	29.06
2013	2211	148.17	30.40	8.61	2.22	143.52	46.55
2014	2423	176.64	31.35	6.35	1.10	140.48	41.06
2015	2974	242.53	38.45	5.23	0.71	88.15	32.97

Notes: Table 2 depicts the descriptive statistics for the value relevance variables. N = the number of observations, q50 = median, μ = mean and δ = deviation. P stands for share price, EPS for earnings and BVPS for book value of equity per share.

Pair-wise Correlation

In estimating the multi-collinearity, the present study used a pair-wise correlation, as depicted in Table 3. The study finds that the correlation between the share price and earnings per share is significant at 5% from 2001 to 2015. However, the results show that the coefficient is less than 0.8 except for 2005, which show a lack of serious problem of multi-collinearity (Field, 2006). Similarly, the price is significantly correlated with book values per share throughout the study period. However, the coefficient is less than the cut-off points of 0.8. It was also found that the earnings and book values per share are significantly correlated at 5% level of significance. However, the coefficient of correlation in most years is less than 0.8. In summary, the results of the pair-wise correlation show that there is no serious problem of multi-collinearity amongst the variables as the coefficients are less than the cut-off point of 0.8 as recommended by Field (2006).

Table 3: Pair-wise Correlation

Year	P vs EPS	P vs BVP	EPS vs BVP
2002	0.6720*	0.7206*	0.7186*
2003	0.5997*	0.7013*	0.7936*
2004	0.6954*	0.7033*	0.7351*
2005	0.8087*	0.7867*	0.8413*
2006	0.7847*	0.7590*	0.8623*
2007	0.5450*	0.6929*	0.6592*
2008	0.4695*	0.4984*	0.7216*
2009	0.3945*	0.3926*	0.5380*
2010	0.4163*	0.4516*	0.8687*
2011	0.4835*	0.1581*	0.0971*
2012	0.3509*	0.1660*	0.0628*
2013	0.6660*	0.0741*	0.0742*
2014	0.5904*	0.1006*	0.0699*
2015	0.6452*	0.7993*	0.7466*

Notes: Table 3 depicts the simple pair-wise correlation amongst the variables to detect a multi-collinearity problem.

Multiple Regressions: Year-wise Results

Table 4 shows the results of an annual regression of the share price on both earnings and book value of equity. The depicted results of F-test revealed F-value is greater than the critical value of 3.09 at 5% level of significance for both a whole sample and a profit-making sample. This indicates that there is an association between the share prices and both the earnings and book value of earnings for each year from 2002 to 2015. These results support the first hypothesis that the earnings and book value of equity are value relevant to Indian capital markets. They are also similar to the ones reported in China, Saudi Arabia and Canada by Chalmers et al. (2010), Barrak (2011) and Okafar et al. (2016) respectively.

The results also showed that the combined explanatory power of book value and earnings in explaining the share prices three months after the calendar ranged from 0.64 to 0.14. However, when excluding the loss-making firms, the explanatory power increased as it ranged from 0.71 to 0.21. In almost each year, the explanatory power of profit-making firms exceeded that of the whole sample except in 2003, 2009 and 2010 whereby the explanatory power of profit-making firms was very close. These findings support Hayn's (1995) assertion that the loss-making firms are less associated with the share prices as the market participants have an option to sell and invest in more profitable firms. The results are also similar to Chen et al. (2001) and Chalmers et al. (2010) in China. According to them, the local Chinese standards are value relevant to accounting information after introducing the reforms. Similarly, Barrak (2011) reported that the Saudi Arabia local standards are value relevant.

Table 4: Multiple Regression: Year-wise Price Model

$$P_{i,t} = \chi_0 + \chi_1 EPS_{i,t} + \chi_2 BVPS_{i,t} + \nu_i, t$$

Year	Whole Sample						Excluding Losses					
	N	CONST	EPS	BVPS	R-sq	F-test	N	CONST	EPS	BVPS	R_sq	F-test
2002	1157	13.03 (0.06)	3.49 (0.05)	0.61 (0.00)	0.57	41.91	783	-20.75 (0.05)	8.55 (0.001)	0.28 (0.107)	0.66	121.84
2003	1219	-6.42 (0.63)	0.96 (0.55)	0.92 (0.00)	0.49	11.97	830	-11.96 (0.49)	0.93 (0.72)	0.96 (0.02)	0.49	11.4
2004	1834	9.79 (0.55)	4.21 (0.07)	0.91 (0.00)	0.56	10.93	1313	-10.18 (0.73)	6.5 (0.08)	0.57 (0.12)	0.59	10.21
2005	2232	41.94 (0.00)	4.39 (0.00)	0.73 (0.01)	0.69	33.09	1675	30.99 (0.05)	5.35 (0.00)	0.64 (0.03)	0.74	53.24
2006	2729	40.88 (0.04)	9.67 (0.00)	1.24 (0.00)	0.64	15.98	2115	18.64 (0.53)	12.88 (0.00)	0.78 (0.15)	0.68	16.08
2007	2820	50.49 (0.00)	2.15 (0.03)	1.44 (0.00)	0.49	58.08	2225	48.13 (0.00)	3.06 (0.09)	1.32 (0.00)	0.52	34.78
2008	2610	47.59 (0.00)	4.2 (0.00)	1.2 (0.00)	0.27	32.85	2128	49.5 (0.01)	6.98 (0.00)	0.66 (0.07)	0.28	28.26

	Whole Sample						Excluding		
Year	N	CONST	EPS	BVPS	R-sq	F-test	N	CONST	EPS
2009	2311	40.43 (0.00)	2.93 (0.02)	0.31 (0.00)	0.21	27.56	1697	35.6 (0.09)	3.49 (0.03)
2010	2788	37.21 (0.00)	1.76 (0.01)	1.57 (0.00)	0.21	36.99	2060	42.59 (0.03)	2.32 (0.11)
2011	2813	28.3 (0.63)	14.32 (0.04)	0.06 (0.42)	0.25	2.07	2177	-85.93 (0.43)	19.89 (0.02)
2012	3519	68.57 (0.00)	8.45 (0.00)	0.06 (0.41)	0.14	8.67	2448	5.34 (0.74)	12.58 (0.00)
2013	2211	87.8 (0.00)	6.91 (0.00)	0.01 (0.39)	0.44	12.49	1600	5.37 (0.78)	5.63 (0.07)
2014	2423	134.81 (0.00)	6.15 (0.04)	0.02 (0.340)	0.35	2.81	1591	10.33 (0.62)	6.7 (0.00)
2015	2974	-1.99 (0.93)	1.79 (0.39)	2.67 (0.00)	0.64	101.22	1904	-3.52 (0.90)	6.82 (0.11)

Notes: Year-wise regression of the share prices on both the earnings and book value of equity indicate the p-values attached to the coefficient.

Moreover, the annual regressions for the whole sample revealed that earnings were significantly and positively associated with the share prices in twelve years except in 2003 and 2015. Likewise, the book value of equity is significantly positively related to the share prices in 11 out of 14 years.

The year-wise regression for the profit-making firms indicates that earnings are significantly and positively correlated with the share prices for 11 years except in 2003, 2010 and 2015. Also, out of 14 year-wise regressions, the results show that 8 years of book value of equity are positively associated with the share prices for the profit-making firms.

The results of F-tests and level of significance, which were depicted by coefficient show that the earnings and book value of equity are value relevant over the whole period under study. It was found that the predictive explanatory power of the book value and earnings in explaining the share prices for profit-making firms was higher than the sample which contained both non-profit and profit-making firms. Finally, the coefficient of both earnings and book value of equity showed that earnings and book value of equity were value relevant.

Incremental Explanatory Power of Earnings and Book Value of Equity

Table 5 portrays the results of the incremental explanatory power of earnings and book value of equity to supplement the results of the year-wise regressions. To understand which one among the earnings and book value has the highest explanatory power, the share prices were regressed on earnings and book value of equity separately as depicted by models M2 and M3. The results indicated that both the earnings and book value provide information for predicting security prices. In addition, Figure 1 depicts the graphs for incremental earnings, book value and combined incremental power. However, the incremental explanatory power is not used to determine which element is more value relevant.

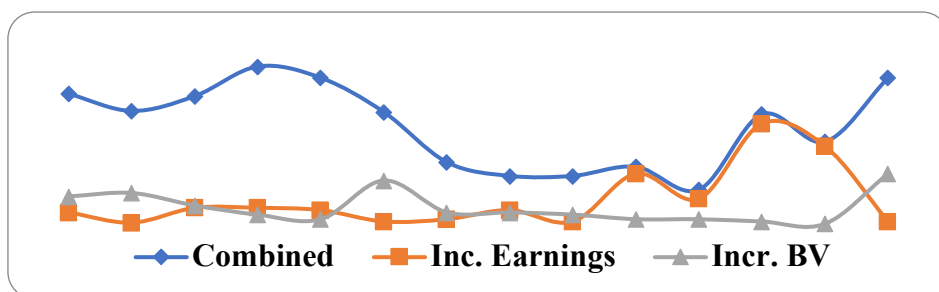


Figure 1: Incremental Explanatory Power of Earnings and Book Value

Table 5: Incremental Earnings and Book Value of Equity: Year-wise Results

$$\mathbf{M1:} P_{i,t} = \alpha_0 + \alpha_1 EPS_{i,t} + \alpha_2 BVPS_{i,t} + v_{i,t}$$

$$\mathbf{M2:} P_{i,t} = \beta_0 + \beta_1 EPS_{i,t} + v_{i,t}$$

$$\mathbf{M3:} P_{i,t} = \phi_0 + \phi_1 BVPS_{i,t} + v_{i,t}$$

		M 1	M2		M3		Inc. Earnings	Incr. BV
Year	N	R-sq	EPS	R-sq	BVPS	R_sq	M 1- M 3	M 1 - M2
2002	1157	0.57	7.29 (0.00)	0.45	0.89 (0.00)	0.52	0.05	0.12
2003	1219	0.495	4.97 (0.00)	0.36	1.06 (0.00)	0.49	0.005	0.135
2004	1834	0.56	7.54 (0.00)	0.48	1.53 (0.00)	0.49	0.07	0.08
2005	2232	0.69	7.06 (0.00)	0.65	1.58 (0.00)	0.62	0.07	0.04
2006	2729	0.64	14.94 (0.00)	0.62	2.93 (0.00)	0.58	0.06	0.02
2007	2820	0.49	7.51 (0.00)	0.3	1.69 (0.00)	0.48	0.01	0.19
2008	2610	0.27	8.62 (0.00)	0.22	1.8 (0.00)	0.25	0.02	0.05
2009	2311	0.21	4.49 (0.00)	0.16	0.47 (0.00)	0.15	0.06	0.05
2010	2788	0.21	7.48 (0.00)	0.17	1.93 (0.00)	0.2	0.01	0.04
2011	2813	0.25	14.65 (0.05)	0.23	0.08 (0.413)	0.03	0.22	0.02
2012	3519	0.14	8.68 (0.00)	0.12	0.07 (0.39)	0.03	0.11	0.02
2013	2211	0.45	6.93 (0.00)	0.44	0.02 (0.40)	0.01	0.445	0.01
2014	2423	0.35	6.19 (0.05)	0.35	0.03 (0.40)	0.01	0.34	0
2015	2974	0.64	10.55 (0.001)	0.42	2.97 (0.00)	0.63	0.01	0.22

Notes: Annual regression used price models 1, 2 and 3 to calculate the incremental earnings and book value of equity.

Trend of Value Relevance over the Sample Period

Many studies investigated the trend of value relevance of accounting information over different time by regressing R-square on time to understand whether the value relevance of accounting information is increasing or decreasing. For example, Barrak (2011), Balachandran and Mohanram (2011) regressed R-square on time trend to assess the value relevance of accounting information over time.

Table 6 shows the trend of value relevance in India from 2002 to 2015 using models 1 and 2. Model 1 assessed the linear relationship between the explanatory power and time, while model 2 examined a non-linear relationship between explanatory power and time. Under linear model 1, the whole sample depicts an insignificant negative link between value relevance and time indicating that there is an insignificant decline in the value relevance of accounting information in the Indian market ($\eta_1 = -0.018$, $p=0.14$). Moreover, when R-square was regressed on time trend for profit-making firms, the results revealed an insignificant decline in value relevance ($\eta_1 = -0.007$, $p=0.62$). The incremental book value of the equity coefficient also indicated that there is an insignificant decline in value relevance ($\eta_1 = -0.003$, $p=0.52$). Similarly, the incremental earnings coefficient showed that there is an insignificant decrease in value relevance ($\eta_1 = -0.017$, $p=0.16$). These findings do not support the second hypothesis which indicated that the value relevance in India is increasing. The findings are similar with studies done by Werner (2011) and Chen et al. (2011) that discovered that there was insignificant change of value relevance for US listed companies.

The present study estimated the trend of value relevance using non-linear model by regressing R-square on both time and time square. The results to the large extent remain the same. The study found that there is a significant non-linear increase in value relevance for the whole sample and firms making profits ($\delta_2 = 0.006$, $p=0.06$, $\delta_2 = 0.008$, $p=0.02$). However, there is insignificant non-linear increase in value relevance for the incremental earnings and book value ($\delta_2 = 0.001$, $p=0.63$, $\delta_2 = 0.002$, $p=0.15$). The results of whole sample and firms

making profit support the hypothesis that the value relevance increased in non-linear fashion over the sample period. The results are similar with that of study conducted by Atanda (2014) that discovered non-linear increase in value relevance in Nigeria.

Table 6: Trend for Value Relevance

Model 1: $R^2 = \eta_0 + \eta_1 Time + \psi_t$ **Model 2:** $R^2 = \delta_0 + \delta_1 Time + \delta_2 Time^2 + \nu_t$

Explanation	Model 1			Model 2				
	η_0	η_1	R-square	δ_0	δ_1	δ_2	R-square	F-test
Whole sample	0.564 (0.00)	-0.018 (0.14)	0.173	0.806 (0.00)	-0.109 (0.03)	0.006 (0.06)	0.17	2.51
Exclude losses	0.551 (0.001)	-0.007 (0.62)	0.02	0.897 (0.00)	-0.137 (0.02)	0.008 (0.02)	0.41	3.85
Incr. earnings	-0.021 (0.77)	-0.017 (0.16)	0.271	0.026 (0.83)	-0.001 (0.99)	0.001 (0.63)	0.29	2.22
Incr. book value	0.094 (0.04)	-0.003 (0.52)	0.05	0.172 (0.02)	-0.032 (0.12)	0.002 (0.15)	0.21	1.46

Notes: Estimating the trend of value relevance using both linear and nonlinear model

Conclusion

This study investigated the value relevance of accounting information in India after implementing the reforms of developing Indian GAAPs in line with IFRS to meet the demands of investors. Specifically, the study investigated the association between the earnings and book value of equity and share prices.

The association between the share prices and both earnings and book value of equity was estimated using a year-wise regression. It was found that earnings and book value of equity are value relevant over the study period (2002 to 2015). Moreover, the results revealed that the explanatory power of profit-making firms exceeds that of the whole sample almost every year. These results are consistent with Hayn's (1995) assertion that loss-making firms are less associated with share prices as the market participants have the option to sell and invest in profit-making firms. The study findings are supported by the prior studies by Barrak, (2011), Chen et al. (2001), Okafar et al. (2016) and Chalmers et al. (2010).

Moreover, the study revealed that there is an insignificant linear decline in the value relevance of earnings and book value of equity in the period under study. Similarly, Werner (2011), Chen et al. (2011) and Barrack (2011) reported insignificant change in value relevance over time in the US. The findings also show a significant non-linear increase in the value relevance; in other words, the value relevance is moving randomly and not in a linear fashion.

The study recommends further reforms of Indian GAAPs to overcome the problem of an insignificant decrease in the value relevance of the accounting information.

References

- Alali, F., & Foote, P. (2012). The value relevance of International Financial Reporting Standards: Empirical evidence in an emerging market. *International Journal of Accounting*, 47, 85–108.
- Albring, S., Lubin, J., Garcia, M., & Reck, J. (2010). The value relevance of non-GAAP performance metric to the capital markets. *Review of Accounting and Finance*, 9(3), 264–284.
- Anderson, S., & Lanen, W. (1999). Economic transition, strategy and the evolution of management accounting practices: The case of India. *Accounting, Organizations and Society*, 24, 379–412.
- Balachandran, S., & Mohanram, P. (2011). Is the decline in the value relevance of accounting driven by increased conservatism? *Review of Accounting Studies*, 16(2), 272–301.
- Ball, R., & Brown, P. (1968). An empirical evaluation of accounting income numbers. *Journal of Accounting Research*, 6(2), 159–178.
- Ball, R., Robin, A., & Sadka, G. (2008). Is financial reporting shaped by equity markets or by debt markets? An international study of timeliness and conservatism. *Review of Accounting Studies*, 13(2-3), 168–205.
- Barrak, T. (2011). Value relevance and predictive ability of financial statement information: The case of Saudi Arabia [Doctoral dissertation, University of Portsmouth]. Available from <http://eprints.port.ac.uk/7744>. accessed June 17, 2017.
- Barth, M. E., Beaver, W. H., & Landsman, W. R. (1996). Value-relevance of banks' fair value disclosures under SFAS 107. *The Accounting Review*, 71(4), 513–537.

- Barth, M. E., Landsman, W. R., & Lang, M. H. (2008). International accounting standards and accounting quality. *Journal of Accounting Research*, 46 (3), 467–498.
- Bartov, E., Goldberg, S., & Kim, M. (2005). Comparative value relevance among German, U.S. and International Accounting Standards: A German Stock Market perspective. *Journal of Accounting, Auditing and Finance*, 20(2), 95–119.
- Beckman, J., Brandes, C., & Eierle, B. (2007). Analysis and reconciliations from German commercial code to IFRS or US GAAP. *Advances in International Accounting*, 20, 253–294.
- Chalmers, K., Navissi, F., & Qu, W. (2010). Value relevance of accounting information in China Pre- and Post-2001 Accounting Reforms. *Managerial Auditing Journal*, 25, 792–813.
- Chen, C. J., Chen, S., & Su, X. (2001). Is accounting information value relevant in the Emerging Chinese Stock Market. *Journal of International Accounting, Auditing & Taxation*, 10, 1–22.
- Chen, K., Sommers, G., & Taylor, G. (2011). Fair value's affect on accounting's ability to predict future cash flows: A glance back and a look at the potential impact of reaching the goal. *SSRN Electronic Journal*.
<https://doi.org/10.2139/ssrn.930702>.
- Ciftci, M., Darrough, M., & Mashruwala, R. (2014). Value relevance of accounting information for intangible-intensive industries and the impact of scale: The US evidence. *European Accounting Review*, 23 (2), 199–226.
- Collins, D. W., Maydew, E. L., & Weiss, I. E. (1997). Changes in the value relevance of earnings and book values over the past forty years. *Journal of Accounting and Economics*, 24(1), 39–67.
- Devalle, A., Onali, E., & Magarini, R. (2010). Assessing the value relevance of accounting data after the introduction of IFRS in Europe. *Journal of international Financial Management & Accounting*, 21 (2), 85–119.
- Easton, P. D., & Harris, T. S. (1991). Earnings as an explanatory variable for returns. *Journal of Accounting Research*, 29(1), 19–36.
- Ebaid, I. (2012). The value relevance of accounting based performance measures in emerging economies: The case of Egypt. *Management Research Review*, 35(1), 69–88.
- Field, A. (2006). *Discovering Statistics Using SPSS*, 2nd edition. London: SAGE.

- Francis, J., & Schipper, K. (1999). Have financial statements lost their relevance? *Journal of Accounting Research*, 37(2), 319–352.
- Goncharov, I., & Hodgson, A. (2011). Measuring and reporting income in Europe. *Journal of International Accounting Research*, 10(1), 59, 27–59.
- Hayn, C. (1995). The information content of losses. *Journal of Accounting and Economics*, 20, 125–153.
- Hellström, K. (2006). The value relevance of financial accounting information in a transitional economy: The case of the Czech Republic. *European Accounting Review*, 15(3), 325–349.
- Jain, P. (2011). IFRS implementation in India: Opportunities and challenges. *World Journal of Social Sciences*, 1(1), 125-136.
- Kargin, S. (2013). The impact of IFRS on the value relevance of accounting information: Evidence from Turkish Firms. *International Journal of Economics and Finance*, 5(4), 71-80.
- Khanagha, J. (2011). Value relevance of accounting information in the United Arab Emirates. *International Journal of Economics and Financial Issues*, 1(2), 33–45.
- Kim, J. Y., & Key, K. G. (2014). Changes in accounting information value relevance and cash flow prediction: Evidence from Korea. *International Journal of Business and Social Science*, 5(9), 1–11.
- Kim, M. & Kross, W. (2005). the ability of earnings to predict future operating cash flows has been increasing - Not decreasing. *Journal of Accounting Research*, 43(5), 753–780.
- Kothari, S. P. (2001). Capital markets research in accounting. *Journal of Accounting and Economics*, 31(1-3), 105–231.
- Kousenidis, D., Ladas, A., & Negakis, C. (2010). Value relevance of accounting information in the Pre-and Post-IFRS Accounting Periods. *European Research Studies*, 13 (1), 143–152.
- Lam, K., Sami, H., & Zhou, H. (2013). Changes in the value relevance of accounting information over time: Evidence from emerging market of China. *Journal of Contemporary Accounting & Economic*, 9, 123–135.
- Mohan, N. (2011). *Statistical Appendix: Economic Survey*.
<http://indiabudget.nic.in/es2010-11/estat1.pdf>.
- Narasimhan, M. S., & Srinivan, P. (2012). The value relevance of consolidated financial statement in emerging market: The case of India. *Asian Review of Accounting*, 20(1), 58-73.

- Ngole, S. (2012). Does IFRS adoption improve the usefulness of accounting information in African Capital Markets? [Doctoral Dissertation, Leeds University, 2012]. Retrieved from web July 8, 2017. <http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.581945>.
- Ohlson, J. A. (1995). Earnings, book values and dividends in equity valuation. *Contemporary Accounting Research*, 11(2), 661–687.
- Okafar, O., Anderson, M., & Warsame, H. (2016). IFRS and value relevance: Evidence based on Canadian Adoption. *International Journal of Managerial Finance*, 12(2), 136–160.
- Olugbenga, A., & Atanda, O. (2014). Value relevance of financial accounting information of quoted companies in Nigeria: A trend analysis. *Research Journal of Finance and Accounting*, 5(8), 86–93.
- Plantin, G., Sapra, H., & Shin, H. (2008). Marking-to-market: Panacea or Pandora's Box? *Journal of Accounting Research*, 46(2), 435-460.
- Prather-Kinsey, J. (2006). Developing countries converging with developed-country accounting standards: Evidence from South Africa and Mexico. *The International Journal of Accounting*, 41 (2), 141–162.
- Shehzad, K., & Ismail, A. (2014). Value relevance of accounting information and its impact on stock prices: Case study of listed banks at Karachi stock exchange. *Journal of Economic Info*, 3(1), 40–48.
- Subramanyam, K. R., & Venkatachalam, M. (2007). Earnings, cash flows and ex post intrinsic value of equity. *The Accounting Review*, 82(2), 457-481.
- Vijitha, P., & Nimalathasan, B. (2014). Value relevance of accounting information and share price: A study of listed manufacturing companies in Sri Lanka. *Merit Research Journal of Business and Management*, 2(1), 1-6.
- Werner, E. (2011). The value relevance of pension accounting information: Evidence from Fortune 200 Firms. *Review of Accounting and Finance*, 10(4), 427–458.