

ANALYZING ECONOMIC VALUE ADDED (EVA) AND MARKET VALUE ADDED (MVA) PERFORMANCE MEASURES OF THE SELECTED INFORMATION TECHNOLOGY COMPANIES IN INDIA

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ABSTRACT

The study attempts to analyze the shareholders' value using Economic Value Added (EVA) and Market Value Added (MVA) performance measures on the selected Information Technology (IT) companies in India. It provides the ranking and classification of the selected IT companies in India based on MVA and EVA measures. A sample of 119 Information Technology companies in India has been selected using the Capitaline Database for the year 2009 to 2017. The study found that in totality, all the selected Information Technology companies were value creators (EVA^+) except a few companies which were neither value creator nor value destroyer ($EVA=0$). Accordingly, almost 45% (i.e., EVA^+ and MVA^+) of the companies are value creators as well as wealth creators, while 55% of the IT companies (EVA^+ and MVA^-) are performing well. Still, the market is not optimistic about these companies. The IT giants like Wipro Ltd., HCL Technologies Ltd., Tech Mahindra Ltd., Tata Consultancy Services Ltd. , and 3i Infotech Ltd. BPO have emerged as the best-performing companies in India. The in-depth analysis based on EVA and MVA of the selected companies will provide insights into the Information and Technology sector to help the investors in their decision to invest in this sector.

Keywords: Economic Value Added, Market Value Added, Information Technology Sector, India

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INTRODUCTION

The rapid growth of technological development in a market-driven economy, where stiff competition is coming from domestic as well as overseas firms, has made the sustainability of the organizations a challenging task. These firms need to remain concerned about the performance measurement, a significant tool for assessing the corporate abilities of its stakeholders. It contributes towards the creation of shareholder's Value and achieving the objective of wealth maximization (Khan and Hussanie, 2018).

The term EVA was developed in 1982 by Stern-Stewart, a consulting firm (Grant, 2003). It is computed as the difference between the net operating profits after taxes and a charge on capital employed, which is (minimum rate of return) for producing profits (Stern et al., 1995). It reflects the real economic profit of a business which differs from accounting profits. Economic Value Added is also termed as residual income or economic profit, which is the revenue earned minus income required, which is the cost of capital multiplied by investment (Brealey, et al., 2011). It determines how well a company has been creating value for its investors, and if compared with peer companies, how well a company is creating value for its industry. It encourages its employees and managers to not only concentrate on growing earnings but also the increase in the Value of the firm (Ibid). This value-based performance measurement is quite useful for better decision-making.

Market Value Added (MVA) is the most excellent measure of a company's performance for investors. It expressed value-added over and above the invested capital in the company for its investors (Sweety, 2010). MVA can also be referred to as the difference between the market value of the capital, which includes both debt and equity (V), and the book value of capital invested (C) in the firm. If the MVA of a firm is positive, it means the company is creating wealth for its shareholders, and if the MVA of a firm is negative, it means the company is destroying wealth for its shareholders (Stewart, 1991).

The board of directors is responsible for their strategic decisions, which consist of maximizing shareholders' value. To increase such value, it has to consider initially the alternate avenues, where the investment can generate sufficient returns on its invested capital in the long run. In other words, the analysis of the difference between the expected rate and the actual rate of economic value added leading increase in wealth of shareholders is ascertained. Such decisions highlight how economic value is added sensitive towards its components (Kalaiselvi, 2009) and whether the organizations are utilizing their total assets to generate returns (Pruthy and Hara, 2014).

Relationship between Economic Value Added and Market Value Added

Although EVA and MVA have received substantial attention in recent years and are in practice these days to assess corporate performances, there have been limited studies with emphasis on a specific sector. The relationship between EVA and MVA can be expressed as follows:

1. EVA exhibits the value-added for a given year period, while MVA exhibits the performance of a company over the entire life period (Brigham & Ehrhardt, 2015; Ramana, 2005).
2. EVA is used for an individual department or other departments of a large organization, while MVA can be used for the whole organization (Ibid.)
3. MVA is the present value of all the future EVAs, which a company is supposed to generate i.e., discounted at a weighted average cost of capital (Joibary, 2013).
4. EVA is a performance metric, while MVA is a wealth metric that measures the value of a company acquired over time.

Despite having a broad interest in economic value-added and market value-added in evaluating corporate performance, a little evidence exists on the efficacy of using these measures versus more traditional accounting measures to evaluate firm

performances on a specific industry, especially on information technology & information and technology-enabled services (IT & ITeS) industry.

IT & ITeS Sector in India

The evolution of Information Technology (IT) industry is considered as one of the most governing factors in the ever-changing times today. Indian IT industry has grown fabulously in the past years because of the adoption of liberalization, globalization, and favorable government policies. The availability of highly professional employees at a low cost promised a decent growth rate to the information technology industry in India. The Indian information technology industry is not an old industry, but it has evolved in India in the 1990s only. Overall, due to continued growth, this industry has become one of the significant growth contributors in the Indian economy. Over the years, the image of the Indian IT industry has transformed from a slow-moving bureaucratic economy to a land-living of the innovative entrepreneurs. India has become a global player, providing world-class technology solutions and business services. The common factors influencing the evolution and growth of this industry are the availability of skilled staff, English speaking workforce, liberalization, globalization, export orientation schemes, government policies, initiatives, and adhering to global quality standards. The information technology, software, and hardware related to the IT industry are an essential part of every global industry. The Information Technology industry is contributing incredibly in putting the country as a preferred investment destination among worldwide investors and generating enormous job opportunities in India, the USA, Europe, and all over the world. India's IT industry amounts to 7 percent of the global market, mainly due to exports and export revenues from the industry. The IT sector of India has grown at a CAGR of 12.25% from US\$ 50 billion in FY10 to US\$ 126 billion in FY18 (IBEF, July 2018). India comprises more than 15,000 IT sector firms, of which 1000+ are large firms (*Ibid*). This industry has differentiated itself from other industries in terms of competition, continuous service, and guaranteed results and also helped to manage bilateral trade with other nations. The IT industry in India has made economic transformation by altering the perception of India into

the global economy. Large-sized global IT companies have introduced global delivery models and set IT and R & D centres in India to get IT services and innovative product.

In short, the Indian IT industry brings a significant change in the marketplace of IT services around the world by giving a fierce competition to American and European markets. However, the Indian IT firms have been facing more challenges at their home markets than the US or Europe due to dysfunctional policies, project management issues and stuck payments as significant causes for conflict in IT contract with the government, which is the largest client of technology and related services (Mendonca, 2014). Due to the lack of payments or delayed payments, the small firms had been driven to the brink of bankruptcy (*Ibid*). So far, IT sector has been studied along with other sectors, where a small number of IT firms had been taken for study. However, an extensive study primarily for IT sector has not been conducted by taking into consideration its different financial dimensions. Further, for helping the corporates in generating value, a value-based management system has been developed (Kalaiselvi, 2009). There is a need to study the foremost growing IT sector, which is growing well and a need to know whether this sector has been creating value for its owners. Hence, the study is an attempt to rank firms based on EVA and MVA financial performance measures for depicting the best-performing companies in the IT sector of India.

REVIEW OF RELATED STUDIES

Kaur (2019) attempted to analyze the performance of selected companies using economic value added (EVA). The study was undertaken on three companies viz. Interglobe Aviation Ltd. (Indigo), Jet Airways and Spice Jet. The study was based on secondary data for the year 2017-18. The study analyzed that Indigo had the highest EVA, thereby proving its dominance in the market by around 40% share in the financial year of 2017-18 while Jet Airways had a negative EVA, which indicated that the company was not generating enough value from the funds invested into the business. The study found that even SpiceJet's performance was not consistent

during this financial year, since it also made losses in the 2nd quarter, but balanced out by coming up with additional measures like improving their onboard service, launching new direct flights, etc.

Khaddafi and Heikal (2014) analyzed the financial performance by using the economic value added of industrial consumption enterprises in the Indonesia stock exchange. The study was conducted on 12 sample companies for three consecutive years of 2010-2012. Using EVA in manufacturing industries, the results found that the average consumption was negative, only the Pt. Ades Waters Indonesia Tbk firm had a value of positive EVA or $EVA > 0$. It indicated that the cost of capital was greater than the operating profit after tax. The study concluded that the company's financial performance was not good because it could not maximize shareholder value. The study suggested that the company should be more transparent in its financial reports to be able to improve the performance of the company in generating profits and minimizing costs to achieve its objectives. The study also suggested that the company should demonstrate its financial statements using EVA analysis so that investors can determine the condition of the performance of the company, and they can make decisions about how much investment will be made in the future.

Chauhan and Patel (2013) analyzed the trend and growth of value creation in the Indian Pharmaceutical industry in terms of economic value-added, market value added and return on investment by using regression analysis. The study was based on secondary data. The period of research was ten years from 2001-2010. In the study, 10 sample units were selected out of the universe of 128 Pharmaceutical companies. The study found that high return on net worth, high debt-equity ratio, and high-interest coverage ratio were leading to high return on investment, but its creditor's velocity was negative in the firm. The study observed that the firm's shareholders value creation is based on firms earning ability and firms return on its net worth. The study concluded that the regression model was applicable and fit for the study. The study suggested that the future of the industry will depend on its ability to diversify its risk, and the industry should be willing to take up the risk with an optimistic approach that will pay rich dividends in the future.

Joibary (2013) evaluated the financial performance of 180 listed companies of the Tehran Stock Exchange (TSE) to determine whether these companies create value or not. It also compared EVA with the traditional measure to see whether EVA was a better measure of wealth creation than other financial ratios and MVA. The study was conducted for five years from 2005 to 2009 by using correlation and regression as statistical tools. The study observed that EVA was different from other measures of performance and illustrated that EVA was the best measurement tool for measuring the financial performance of the company because, in this study, most traditional accounting tools could not predict the amount of worth and value creation. The study concluded that EVA as a strategy formulation and financial performance management tool helps the corporation to make higher than its cost of capital.

Reddy *et al.* (2012) evaluated the financial performance of selected cement companies in India through EVA and MVA approach and ranked them based on these measures. For the study, ten companies were chosen out of 154 listed on BSE, with the assumption of availability of a minimum of ten years of historical data (2001-02 to 2010-11). The study resulted that all selected companies were showing satisfactory performance with consistent returns. And the study found that the linear growth rate of all companies is negative. The study observed that EVA and MVA showed similar results regarding the performance of the companies.

Raiyani and Joshi (2011) studied the Indian Bank's profile to demonstrate a direct correlation between investment in stakeholder relationships and corporate performance. In the study, with the help of Economic Value Added (EVA) which tell what the institution was doing with investor's hard-earned money, the report examined an appropriate way of evaluating bank's performance and found out which Indian banks have been able to create (or destroy) shareholders wealth. The study was mainly based on secondary data, all the data of two Indian public and private sector banks i.e. SBI and HDFC bank that were listed on the National Stock Exchange. The study was made for a three year period from 2005-06 to 2007-08. The study was analyzed by using many factors of interpretation like Net Operating Profit after Tax (NOPAT) & capital charge. The study found that Return on Invested Capital

(ROIC) was higher in all the three years, in HDFC bank than SBI bank, which had a greater impact. The study concluded that the EVA in percentage terms was higher for private banks because the amount of invested capital was low compared to public sector banks & The EVA in rupee terms was higher for public sector banks compared to private sector banks in each of the years due to their invested capital gave a higher return to public sector banks so as to generate a consistent amount of NOPAT.

Sweety (2010) made an attempt to examine whether the value-based measures of firm performance are more highly associated with a firm's MVA than other long-established traditional measures. The study was conducted on secondary data for a sample of 100 companies for the 12 year period, i.e., from 1996 to 2007. The study applied panel data analysis model. In the study, MVA has been used as the dependent variable and Accounting variables such as Return on Capital Employed (ROCE), Return on Net Worth (RONW), Profit After Tax (PAT), Earning Per Share (EPS) and Return on Total Assets (ROTA) whereas value-based measures include Economic Value Added (EVA), Eva in percentage terms (EVA%), Employees Productivity (Ep) and Capital Productivity (Cp) were considered as an independent variable. The study found no clear evidence to support that EVA is better than traditional accounting measures in association with MVA. Thus, the study suggested Indian markets to be more focused on profits than value-based measures like 'EVA'.

Shil (2009) made an earnest effort to introduce EVA as a value-based performance measurement tool. This study was targeting the readers who have no previous idea of the technicality of EVA. In the study, EVA was defined with historical backgrounds, its implementation process, and their advantage was discussed with reference to other performance measurement tools. The study found that EVA was well accepted by both owners and management because owners were happy to see the amount of value-added, and management was happy to get reward proportionally. The study showed that calculating EVA is a challenge, but it can be tailored through the EVA team, formed for the successful implementation of the tool. The team will be responsible for finding out all distortions and the way to adjust them to convert

accounting profit into economic profit. The study suggested that using EVA is not only the right decision; rather, it should be used with others to make the decision more effectively.

Wibowo and Berasategui (2008) examined the relationship between EVA and MVA with the reported earnings from different regression models. In the study, with a sample of 40 Indonesian listed companies in Indonesia stock exchange from the year 2004 to 2007, the hypothesis testing was used to find the relationship among variables. The study used four models of regression analysis against reported earnings for calculating EVA and MVA. The study found evidence in the relationship between EVA and MVA with reported earnings, and the highest correlation among the models was the relationship within the same year period, which can be used for evaluation purposes. The study also found only the relationship of EVA in the previous year and reported earning changes was proved insignificant. But still, MVA was more significant in explaining its relationship with reported earnings rather than EVA. The study concluded that in general, Indonesian listed companies still produce negative EVA. On the other hand, the result of EVA was lower than MVA. Therefore, the study mentioned that there was still not enough evidence that EVA can be used to explain the reported earnings effectively other than MVA.

Ramana (2005) examined the relationship between EVA and MVA of the Indian companies, and it also tried to understand the relationship between MVA and other common accounting numbers like NOPAT, PAT, PBIT, and CFO. The study was conducted on 243 companies for four years from 2000-2003 by using the data published by the BT stern steward and CMIE database. The study found that there was no strong evidence to support the claim that EVA was superior to traditional performance measures. The study also found that NOPAT and PAT better explain MVA. Overall' the study indicated that PAT emerged as a relatively better explanatory variable, and the accounting adjustments for EVA seem to be unjustified and costly. The study suggested that one can continue to use conventional accounting, but the usefulness of EVA for decision-making also cannot be ruled out.

Lehn and Makhija (1996) investigated the effectiveness of EVA and MVA as measures of performance, as signals of strategic change and as a metric for strategic development. The study was conducted on 241 firms for the period of 1987 to 1993. The study analyzed firm performance by measuring the relationship between various performance measures and stock returns. The study found EVA and MVA were positively related to stock price and negatively related to CEO turnover. The study also found that firms that focused more on their business activities have higher MVA as compared to those who didn't focus on their business activities. The study suggested that EVA and MVA were the effective performance measures which helped in qualitative strategic decisions and served as a good signal for strategic change.

METHODOLOGY

The study is based on secondary data obtained from Capitaline Plus Database over the nine years from 2009 to 2017 for the selected sectors from the database for IT companies viz. Computer Software Medium Small, Computer Software Large, Computer Hardware Medium Small, Computer Hardware Large, Computer Peripherals Accessories, IT BPO, Computer Software Converts, and Computer Education. In the study, a panel of subsequent annual reports data from Capitaline Plus Database has been utilized in this research. A total of 219 IT companies were selected initially, having data for the year ranging from 2009 to 2017. Out of 219 selected companies, 18 companies were removed from the list due to the problem of missing data. While calculating the ratios for the study, the figures for 2007 were not available in the database, the year 2008 was made as the base year. Hence, the ratios for nine years have been considered in the study. Further, 82 companies were eliminated due to the problem of outliers that may violate the assumptions of statistical measures. Finally, the data of 119 companies were analyzed for the analysis.

Computation of EVA

EVA has been calculated as Net operating Profits after Tax (NOPAT) minus the overall cost of capital (*Khaddafi and Heikal, 2014*). EVA based performance measurement attempts to depict the true report on corporate financial performance and can be applied as:

$$\text{Economic Value Added (EVA)} = \text{Net Operating Profit after Tax (NoPAT)} - \text{Cost Of Capital Employed (CoCE)}$$

where,

$$\begin{aligned} \text{Net Operating Profit after Tax (NoPAT)} &= \text{Reported Net Profit} + \text{Interest Paid;} \\ \text{Cost of Capital Employed (CoCE)} &= \frac{\text{Capital Employed} \times \text{WACC}}{100} \\ \text{Capital employed (V)} &= \text{Total Debt} + \text{Total Equity} \\ \text{Weighted Average Cost of Capital (WACC)} &= \frac{\text{Debt level} \times \text{Cost of Debt} (1 - \text{Level of Tax}) + \text{Equity level} \times \text{Cost of Equity}}{\text{Total Debt} + \text{Total Equity}} \end{aligned}$$

The Economic Value Added of a company computed by deducting the weighted average cost of capital from its NOPAT (as given in formula above). If such profits of a company are more than its overall cost of capital ($r > c$), it means the company is creating shareholders' value (i.e. positive EVA). If such profits of a company are less than its overall cost of capital ($r < c$), it means that the company is a value destroyer (i.e. negative EVA). However, in case, if EVA is zero, it means the company is at breakeven point implies the company is just earning sufficient return to cover its overall cost of capital. It expresses that the company has neither been valued creator nor value destroyer.

Computation of MVA

MVA can explain the market value of capital, which includes both debt and equity (V) minus the book value of capital invested (C) in the firm (*Gounder and Venkateshwarlu, 2017*). Here, the market value of the firm is the total amount of debt and the total amount of equity (also called enterprise value). It can be computed as:

$$\text{Market Value Added (MVA)} = \text{Market Value of the Firm} - \text{Invested Capital}$$

If the MVA of a firm is positive, it means that the company has been creating wealth for its shareholders, however, if the MVA of a firm is found to be negative, the company has been considered as the destroyer of the wealth for its shareholders (Stewart, 1991). The positive MVA depicts that the company's market value is more than the company's book value, where the investors would be ready to invest in the company. Moreover, high MVA should not be considered a profitable project only as it also raises investment risk.

ANALYSIS OF THE DATA

For the data analysis, the EVA and MVA for the selected IT companies have been calculated for the year 2009 to 2017. Initially, the total and average of EVA and MVA for the nine years have been calculated. Then, ranking based on the average EVA and MVA has been assigned to each company. For describing the combined ranking of EVA and MVA, the average of EVA and MVA ranking has been taken as shown in table 1.

Table 1: EVA and MVA of Sample Companies (Total, Average and Ranks) and their Respective Directions

Company	EVA			MVA			Sum of EVA and MVA ranking	Ranking based on Sum of EVA and MVA ranking	Direction
	(Rs. In Million)			(Rs. In Million)					
	Total (2009-2017)	Average	Rank	Total (2009-2017)	Average	Rank			
3D PLM Software Solutions Ltd	27.94	3.1	76	-18456	-2050.6	108	184	106	E+ M-
3i Infotech BPO Ltd	112.76	12.52	47	-2805	-311.66	89	136	64	E+ M-
3i Infotech Ltd	15231.7	1692.41	3	155843	17315.8	13	16	5	E+ M+
63 Moons Technologies Ltd	1673.09	185.89	17	46444.6	5160.51	19	36	12.5	E+ M+
ABM Knowledgeware Ltd	6580.89	731.21	8	1892.71	210.3	43	51	20.5	E+ M+
Accel Frontline Ltd	29544.1	3282.67	2	-6666	-740.66	97	99	41	E+ M-
Ace Software Exports Ltd	0.97	0.11	111	-870.88	-96.76	72	183	105	E+ M-
Advent Computer Services Ltd	0	0	117	-1047.3	-116.36	74	191	111	E+ M-
Atek Ltd	664.2	73.8	23	-34064	-3784.9	114	137	65.5	E+ M-
AGS Transact Technologies Ltd	3274.92	363.88	12	-26981	-2997.8	112	124	55	E+ M-
Akshay Software Technologies Ltd	1.79	0.19	107	-1469.8	-163.31	81	188	110	E+ M-
Allied Digital Services Ltd	1070.06	118.89	21	-22385	-2487.2	109	130	59.5	E+ M-
Allsec Technologies Ltd	45.49	5.05	63	-1891.2	-210.13	83	146	72.5	E+ M-

Company	EVA			MVA			Sum of EVA and MVA ranking	Ranking based on Sum of EVA and MVA ranking	Direction
	(Rs. In Million)			(Rs. In Million)					
	Total	Average	Rank	Total	Average	Rank			
Archana Software Ltd	0	0	117	-127.6	-14.17	59	176	101.5	E+ M-
Avance Technologies Ltd	3.56	0.39	101	-14608	-1623.1	107	208	117	E+ M-
BNR Udyog Ltd	2.02	0.22	103.5	-6.2	-0.68	55	158.5	82	E+ M-
Capgemini Technology Services India Ltd	748.07	83.11	22	-261164	-29018	118	140	67	E+ M-
Capricorn Systems Global Solutions Ltd	1.089	0.121	110	272.56	30.28	52	162	85.5	E+ M+
Cerebra Integrated Technologies Ltd	17.33	1.92	85	1710.9	190.1	45	130	59.5	E+ M+
CES Ltd	24.55	2.72	78	-2219.1	-246.56	85	163	88	E+ M-
CG-VAK Software & Exports Ltd	19	2.11	83	21.22	2.35	54	137	65.5	E+ M+
Cigniti Technologies Ltd	87.99	9.77	55	35319.8	3924.42	25	80	34	E+ M+
Cognizant Technology Solutions India Pvt Ltd	23.2	2.57	79	-2E+06	-166850	119	198	112	E+ M-
Compuage Infocom Ltd	2233.23	248.13	13	15312.3	1701.36	29	42	16	E+ M+
Compucom Software Ltd	357.88	39.76	28	-1078.5	-119.82	75	103	44	E+ M-
Cosmic Global Ltd	7.67	0.85	91	-322.7	-35.85	65	156	80	E+ M-
Cybertech Systems & Software Ltd	30.14	3.34	72	-7097.1	-788.57	99	171	94.5	E+ M-
Cyient Ltd	64.5	7.16	59	95938.1	10659.8	15	74	27	E+ M+
Danlaw Technologies India Ltd	7.1	0.78	93	-2121.3	-235.69	84	177	103	E+ M-
Datamatics Global Services Ltd	237.53	26.39	36	-5960.3	-662.25	95	131	61.5	E+ M-
Dion Global Solutions Ltd	1699.72	188.85	16	11923.5	1324.83	31	47	17	E+ M+
DotEx International Ltd	10.6	1.17	89	-6821	-757.88	98	187	109	E+ M-
Dynacons Systems & Solutions Ltd	149.38	16.59	45	-425.97	-47.33	67	112	50	E+ M-
eClerx Services Ltd	33.6	3.73	69	197832	21981.4	10	79	32	E+ M+
ERP Soft Systems Ltd	0	0	117	273.4	30.37	51	168	90	E+ M+
Evolve Technologies Pvt Ltd	20.71	2.3	81	-1414.8	-157.2	80	161	83.5	E+ M-
Excel Realty N Infra Ltd	48.73	5.41	62	-6019.7	-668.85	96	158	81	E+ M-
FCS Software Solutions Ltd	77.47	8.6	57	-34515	-3835	115	172	96.5	E+ M-
Firstobject Technologies Ltd	5.24	0.58	98.5	-1280.1	-142.23	77	175.5	100	E+ M-
Firstsource Solutions Ltd	5009.37	556.59	9	59767	6640.78	17	26	7.5	E+ M+
Genesys International Corporation Ltd	102.84	11.42	53	13445.2	1493.91	30	83	36	E+ M+
Geojit Technologies Pvt Ltd	0.4	0.04	113.5	-7992.9	-888.1	101	214.5	119	E+ M-
Goldstone Technologies Ltd	63.1	7.01	60	-2802.1	-311.34	88	148	74.5	E+ M-
GSS Infotech Ltd	106.46	11.83	50	-10175	-1130.5	105	155	78.5	E+ M-
Harbinger Systems Pvt Ltd	6.63	0.73	94	-3009.7	-334.41	91	185	107.5	E+ M-
HCL Infosystems Ltd	8390.18	932.24	5	40607.3	4511.92	21	26	7.5	E+ M+
HCL Technologies Ltd	6584.07	731.56	7	511200 2	568000	4	11	2.5	E+ M+
Hinduja Global Solutions Ltd	1136.81	126.31	20	17158.5	1906.5	28	48	18	E+ M+
I Power Solutions India Ltd	1.95	0.21	105	-103.15	-11.46	58	163	88	E+ M-

ANALYZING ECONOMIC VALUE ADDED (EVA) AND MARKET VALUE ADDED (MVA) PERFORMANCE

Company	EVA			MVA			Sum of EVA and MVA ranking	Ranking based on Sum of EVA and MVA ranking	Direction
	(Rs. In Million)			(Rs. In Million)					
	Total	Average	Rank	Total	Average	Rank			
IKF Technologies Ltd	33.51	3.72	70	-7754.6	-861.62	100	170	92.5	E+ M-
Infinite Computer Solutions India Ltd	108.53	12.06	48	10355.1	1150.56	33	81	35	E+ M+
Informed Technologies India Ltd	1.82	0.2	106	-340.21	-37.8	66	172	96.5	E+ M-
Infosys Ltd	240	26.66	34	1.2E+07	1305367	2	36	12.5	E+ M+
Intrasoft Technologies Ltd	38.82	4.31	67	5168.46	574.27	38	105	46	E+ M+
ITC Infotech India Ltd	29.05	3.22	74	-23174	-2574.9	111	185	107.5	E+ M-
IZMO Ltd	132.97	14.77	46	-9831.3	-1092.4	104	150	76	E+ M-
JetkingInfotrain Ltd	12.81	1.42	88	-139.52	-15.5	60	148	74.5	E+ M-
Larsen & Toubro Infotech Ltd	1240.67	137.85	19	-13447	-1494.1	106	125	56	E+ M-
Lee & Nee Software (Exports) Ltd	0.4	0.04	113.5	-2415.6	-268.4	87	200.5	114	E+ M-
Mahaveer Infoway Ltd	40.44	4.49	65	-50.5	-5.61	57	122	53.5	E+ M-
Mastek Ltd	16.02	1.78	87	10094.8	1121.64	34	121	52	E+ M+
Megri Soft +Ltd	16.68	1.85	86	-1156.9	-128.54	76	162	85.5	E+ M-
Melstar Information Technologies Ltd	81.06	9	56	371.09	41.23	50	106	47	E+ M+
Microland Ltd	284.09	31.56	31	-9303.9	-1033.8	102	133	63	E+ M-
Mindteck (India) Ltd	19.96	2.21	82	-5909.4	-656.59	94	176	101.5	E+ M-
Mindtree Ltd	579.41	64.38	24	314998	34999.7	9	33	9.5	E+ M+
Mphasis Ltd	538.6	59.84	27	616971	68552.4	7	34	11	E+ M+
MPS Infotecnics Ltd	187.47	20.83	42	-22896	-2544	110	152	77	E+ M-
Nihar Info Global Ltd	2.952	0.32	102	139.29	15.47	53	155	78.5	E+ M+
Nihilent Analytics Ltd	20.02	0.05	112	-4457.9	-495.32	92	204	116	E+ M-
NiIT Ltd	1924.39	213.82	15	35786.6	3976.28	24	39	14	E+ M+
NiIT Technologies Ltd	239.87	26.65	35	83139.5	9237.72	16	51	20.5	E+ M+
Objectone Information Systems Ltd	2.01	0.22	103.5	-624.82	-69.42	69	172.5	98	E+ M-
Odyssey Technologies Ltd	6.19	0.68	96	1002.19	111.35	47	143	70	E+ M+
Omega Healthcare Management Services Pvt Ltd	5.06	0.56	100	-9638.8	-1071	103	203	115	E+ M-
Onward Technologies Ltd	203.04	22.56	38.5	4315.39	479.48	41	79.5	33	E+ M+
Oracle Financial Services Software Ltd	7.8	0.86	90	129342	143714	6	96	39	E+ M+
Panoramic Universal Ltd	211.32	23.48	37	4584.55	509.39	39	76	29.5	E+ M+
Persistent Systems Ltd	6.03	0.67	97	156396	17377.3	12	109	48	E+ M+
Polaris Consulting & Services Ltd	75.79	8.42	58	58918.2	6546.47	18	76	29.5	E+ M+
R S Software (India) Ltd	102.95	11.43	52	891.67	99.07	48	100	42	E+ M+
Roitla India Ltd	9709.92	1078.88	4	5478.33	608.7	37	41	15	E+ M+
Roitla Pvt.Ltd	1614.69	179.41	18	-28190	-3132.2	113	131	61.5	E+ M-
SagarSoft (India) Ltd	5.28	0.58	98.5	-644.97	-71.66	70	168.5	91	E+ M-
Saksoft Ltd	276.76	30.75	32	7176.66	797.4	36	68	25	E+ M+
Sankhya Infotech Ltd	331.47	36.83	29	-1619	-179.88	82	111	49	E+ M-
Sasken Technologies Ltd	0	0	117	-4824.4	-536.03	93	210	118	E+ M-
Saven Technologies Ltd	1.37	0.15	109	-703.7	-78.18	71	180	104	E+ M-

Company	EVA			MVA			Sum of EVA and MVA ranking	Ranking based on Sum of EVA and MVA ranking	Direction
	(Rs. In Million)			(Rs. In Million)					
	Total	Average	Rank	Total	Average	Rank			
Scanpoint Geomatics Ltd	42.26	4.69	64	4541.45	504.6	40	104	45	E+ M+
Spel Semiconductor Ltd	303.63	33.73	30	-542.23	-60.24	68	98	40	E+ M-
Springform Technology Ltd	0	0	117	-28.7	-3.18	56	173	99	E+ M-
SQS India BFSI Ltd	59.35	6.59	61	18561.9	206243	26	87	37	E+ M+
Sterling International Enterprises Ltd	90.06	10	54	36088.4	4009.82	23	77	31	E+ M+
Subex Ltd	3824.39	424.93	11	39992.6	4443.62	22	33	9.5	E+ M+
Sundaram Business Services Ltd	32.79	3.64	71	-911.7	-101.3	73	144	71	E+ M-
Sundaram Infotech Solutions Ltd	39.68	4.4	66	-179.2	-19.91	61	127	58	E+ M-
Synfosys Business Solutions Ltd	7.1	0.78	92	-1356.2	-150.68	79	171	94.5	E+ M-
Take Solutions Ltd	269.19	29.91	33	42743.5	4749.28	20	53	22	E+ M+
Tanla Solutions Ltd	17.66	1.96	84	-39591	-4399	116	200	113	E+ M-
Tata Consultancy Services Ltd	2142.41	238.04	14	2.5E+07	2751506	1	15	4	E+ M+
Tata Elxsi Ltd	203.05	22.56	38.5	160677	17853	11	49.5	19	E+ M+
Tata Technologies Ltd	149.71	16.63	44	-53492	-5943.6	117	161	83.5	E+ M-
Tatanet Services Ltd	104.18	11.57	51	-226.7	-25.18	63	114	51	E+ M-
Tech Mahindra Ltd	7311.94	812.43	6	166041 1	184490	5	11	2.5	E+ M+
TechNvision Ventures Ltd	6.39	0.71	95	1616.85	179.65	46	141	68.5	E+ M+
Tera Software Ltd	566.03	62.89	26	1828.36	203.15	44	70	26	E+ M+
Trigyn Technologies Ltd	29.59	3.28	73	-2965.8	-329.53	90	163	88	E+ M-
TVS Electronics Ltd	568.82	63.2	25	7948.64	883.18	35	60	23	E+ M+
Twinstar Industries Ltd	36.48	4.05	68	-1342.9	-149.21	78	146	72.5	E+ M-
Unisys Software and Holding Industries Ltd	28.23	3.13	75	17512.2	1945.8	27	102	43	E+ M+
Vakrangee Ltd	4238.3	470.92	10	380276	42252.8	8	18	6	E+ M+
Vedavaag Systems Ltd	24.79	2.75	77	-306.56	-34.06	64	141	68.5	E+ M-
Vintron Informatics Ltd	21.24	2.36	80	2531.5	281.27	42	122	53.5	E+ M+
Virinchi Ltd	193.93	21.54	40	-2405.2	-267.24	86	126	57	E+ M-
VXL Instruments Ltd	188.95	20.99	41	800.54	88.94	49	90	38	E+ M+
Wipro Ltd	30460.9	3384.53	1	757014	841127	3	4	1	E+ M+
				0					
Wisec Global Ltd	1.47	0.16	108	-220.99	-24.55	62	170	92.5	E+ M-
Zen Technologies Ltd	157.21	17.46	43	10637.3	1181.91	32	75	28	E+ M+
Zensar Technologies Ltd	107.34	11.92	49	103652	11516.9	14	62	24	E+ M+

Source: Computed by authors

Table 1 represents total and average of Economic Value Added (EVA) and Market Value Added (MVA) for the period from 2008-09 to 2016-17 and companies are ranked on the basis of their average EVA and MVA. In order to have combined effect of EVA and MVA the companies are ranked on the basis of sum of EVA and MVA

rankings. On the basis of combined EVA and MVA rankings, final ranks are given to companies who are performing good in EVA as well as MVA. Top-performing five information technology companies, which are best in value creation and wealth creation are Wipro Ltd, HCL Technologies Ltd, Tech Mahindra Ltd, Tata Consultancy Services Ltd. and 3i Infotech BPO Ltd., while worst-performing companies in creating shareholders value are Geojit Technologies Pvt. Ltd., Sasken Technologies Ltd., Avance Technologies Ltd, Nihilent Analytics Ltd And Omega Healthcare Management Services Pvt Ltd.

Classification of Sample Companies as per the direction of EVA and MVA

Nowadays, investors are interested in knowing the best value-creating companies. Shareholders plan to make the investment only in those companies which are able to generate good returns annually as well as can generate wealth in future. The objective here may be to know about the value-creating companies for selecting the stocks to invest after having risk analysis and finally constructing a portfolio.

Table 2 depicts the direction of the selected information technology companies over the years. These companies have been ranked based on shareholders wealth measures, i.e. Economic Value Added (EVA), as well as the Market Value Added (MVA). These directions describe those companies that can create or eroded value for their owners. The study explains the possible situations when MVA and EVA follow the same patterns, and when MVA of a company does not follow its EVA. The study discusses feasible solutions for each situation for better decision-making.

Table 2: Classification of Sample Companies as per the direction of EVA and MVA

<p>Category A: (E+M+)</p> <p>54 Companies (3i Infotech Ltd., 63 Moons Technologies Ltd., ABM Knowledge ware Ltd., H Y P E R L I N K "..." /Sony/Company/BackGround.aspx"Capricorn Systems Global Solutions Ltd, Cerebra Integrated Technologies Ltd, H Y P E R L I N K "..." /Sony/Company/BackGround.aspx"CG-VAK Software & Exports Ltd, Cigniti Technologies Ltd., Compugae Infocom Ltd, Cyient Ltd., Dion Global Solutions Ltd., eClerx Services Ltd., ERP Soft Systems Ltd., Firstsource Solutions Ltd., Genesys International Corporation Ltd., HCL Infosystems Ltd., HCL Technologies Ltd., Hinduja Global Solutions Ltd., Infinite Computer Solutions India Ltd., Infosys Ltd., Intrasoft Technologies Ltd., Mastek Ltd., Melstar Information Technologies Ltd., Mindtree Ltd., Mphasis Ltd., Nihar Info Global Ltd., NIIT Ltd., NIIT Technologies Ltd., Odyssey Technologies Ltd., Onward technologies Ltd., Oracle Financial Services Software Ltd., Panoramic Universal Ltd., Persistent Systems Ltd., Polaris Consulting & Services Ltd., R S Software (India) Ltd., Rolta India Ltd., Saksoft Ltd., Scanpoint Geomatics Ltd., SQS India BFSI Ltd, Sterling International Enterprises Ltd., Subex Ltd., Take Solutions Ltd., Tata Consultancy Services Ltd., Tata Elxsi Ltd., Tech Mahindra Ltd., TechNvision Ventures Ltd., Tera Software Ltd., TVS Electronics Ltd., H Y P E R L I N K "..." /Sony/capitaline data/fit computer software medium small, rs in millions/year 2008/Company/BackGround.aspx"Unisys Software and Holding Industries Ltd, Vakrangee Ltd., Vintron Infomatics Ltd., VXL instruments Ltd., Wipro Ltd., Zen Technologies Ltd., Zensar technologies Ltd.</p>	<p>Category B: (E-M-)</p> <p>No Company</p>
<p>Category C: (E-M+)</p> <p>No company</p>	<p>Category D: (E+M-)</p> <p>65 Companies (3D PLM Software Solutions Ltd., 3i Infotech BPO Ltd., Accel Frontline Ltd., Ace Software Exports Ltd., Advent Computer Services Ltd., Aftek Ltd., AGS Transact Technologies Ltd., Akshay Software Technologies Ltd., Allied Digital Services Ltd., Allsec Technologies Ltd., Archana Software Ltd., Avance technologies Ltd., BNR Udyog Ltd., Capgemmini Technology Services India Ltd., CES Ltd., Cognizant Technology Solutions India Pvt. Ltd., Compucom Software Ltd., C o s m i c G l o b a l L t d . , H Y P E R L I N K "..." /Sony/Company/BackGround.aspx"Cybertech Systems & Software Ltd., Danlaw Technologies India Ltd., Datamatics Global Services Ltd., DotEx International Ltd., Dynacons Systems & Solutions Ltd., H Y P E R L I N K "..." /Sony/Company/BackGround.aspx"Evoke Technologies Pvt. Ltd., Excel realty N Infra Ltd., FCS Software Solutions Ltd., Firstobject Technologies Ltd., Geojit Technologies Pvt. Ltd., Goldstone Technologies Ltd., GSS Infotech Ltd., Harbinger Systems Pvt. Ltd., I Power Solutions India Ltd., IKF Technologies Ltd., Informed Technologies India Ltd., ITC Infotech India Ltd., IZMO Ltd., Jetking I n f o t r a i n L t d . , H Y P E R L I N K "..." /Sony/Company/BackGround.aspx"Larsen & Toubro Infotech Ltd., H Y P E R L I N K "..." /Sony/Company/BackGround.aspx"Lee & Nee Software (Exports) Ltd., Mahaveer Infoway Ltd., Megri Soft Ltd., Mindteck (India) Ltd., MPS Infotecnic Ltd., Nihilent Analytics Ltd., Objectone Information Systems Ltd., Omega healthcare Management Services Pvt. Ltd., Rolta Pvt. Ltd., Sagarsoft (india) Ltd., Sankhya Infotech Ltd., Sasken Technologies Ltd., Saven Technologies Ltd., Spel Semiconductor Ltd., Springform Technology Ltd., Sundaram Business Services Ltd., Sundaram Infotech Solutions Ltd., Synfosys Business Solutions Ltd., Tanla Solutions Ltd., Tata Technologies Ltd., Tatanet Services Ltd., Trigyn Technologies Ltd., Twinstar Industries Ltd., Vedavaag Systems Ltd., Virinchi Ltd., Wisec Global Ltd.</p>

Source: Computed by Authors

Table 2 reveals the four possible cases where EVA and MVA of a company either move in the same direction or the opposite direction. In these cases, Category A and Category B are easily understood as EVA and MVA move in the same direction, while Category C and Category D need to be explained in detail as MVA does not follow to the EVA as discussed below. These categories allow strategic investors to understand the behaviour of the market and companies.

Category A (E+M+)

MVA is the present value of all expected future EVA (*Solanki, 2017*). If both the EVA and the MVA are positive and high, it means management might be showing outstanding performance both in creating very high EVA for the current year and might be able to take positive NPV projects to ensure a very high MVA (*Sweety, 2010*). Alternatively, it can be said that these companies are giving a high return to their shareholders on their investment. This category is also creating wealth for its shareholders. In the present study, approx. 45% of the sample companies come under this category. Here investors may seem to be too expectant to the thought of wealth creator companies.

Category B (E-M-)

If both the EVA and the MVA are negative, then it means that management has not been performing well, and it is unable to meet the expectations of the shareholder. Moreover, if EVA is negative for a long time, it reflects that the company has not been able to fulfil all of its responsibilities to its various stakeholders, which will further affect the market expectations. Now, these companies need to further focus on improving their operational efficiency, reducing their financing costs, and most importantly, to discourage the management from deliberately taking value-destroying decisions. However, in the present study, no sample company is part of this category, which means the sample companies have been moving ahead on the right track in performing their responsibilities and in meeting the expectations of the shareholders.

Category C (E-M+)

If the EVA is negative and the MVA is positive, it means that management has not been performing well, and it is unable to meet the expectations of the shareholder in the short-term. However, the market is still favorable and can create wealth for its shareholders for these companies. The negative EVA and positive MVA may be due to the following reasons:

- An investment has been made in those projects which are not giving returns today but can give returns in the future (*Sweety, 2010*).
- Sometimes firms with negative EVA are expected to perform well in the future despite its current negative values as these firms generate high stock returns than positive EVA firms (*Leong and Zaima, 2014*).
- Companies have gained the confidence of its strategic investors and due to which stock is overpriced (*Sweety, 2010*).

However, for a healthier future in the market, the companies with negative EVA should perform well for improving their operational efficiency. And investors should make the investment in the companies after making an assurance that companies are able to get good returns after utilizing their assets in an efficient manner and by increasing the demand of products and services in the market. In the current study, no sample company is a part of this category, which reflects a good sign for IT sector in India.

Category D (E+M-)

The positive EVA describes that the companies have been performing well for their shareholders, but the negative MVA denotes that the market is not too optimistic for these companies. This category implies that most of the Information Technology companies have been creating superior value this year, but it does not mean that the company will be able to create superior value in the future also (*Montany, 2006*). The following may be the reasons:

- The study used imperfect market valuation techniques.

- The management has made wrong decisions that affect the EVA of the current year at the cost of future years EVA (*Ibid*).
- The market expects that value-creating decisions today will not be fruitful in future for investment decisions (Ramana, 2005).
- The growth in profits does not always reflect an addition in the value of a company unless investment is managed in such a way that it can increase returns over the cost of capital (*Solanki, 2017*).
- The EVA is achieved at the expense of MVA. It implies when the company compensates only to those managers who create value for the company, otherwise who do not create value for the current period are penalized (*Fatemi, et al., 2013*).

Thus, the companies should perform efforts for better performance and obtain great fame in the market. For that, the companies should build faith among its investors. The companies should take wealth-generating steps by distributing more dividends to existing shareholders, create a demand for innovation of information technology in the businesses, introduce new software or IT services that can cover a wide area of the market, improve sales of the technology companies. In the present study, around 55% of companies are part of this category.

CONCLUSION

Economic value added is a financial performance measure of true economic profit of a firm which differs actually from accounting profits, whereas Market value added is a corporate performance measure to maximize shareholder's wealth. The study used these measures to make financial information useful for the stakeholders by evaluating the company's current performance and forecasting the future performance of the selected IT companies in India. The study tried to know whether the selected 119 IT companies have been creating or destroying the value for its shareholders. The study gives a factual and consistent base for strategic investors for better decision-making.

The study explained the possible four categories (EVA+, MVA+), (EVA-, MVA-), (EVA-, MVA+), and (EVA+, MVA-) based on the combined average ranking of EVA and MVA. The study found 54 companies in category (EVA+, MVA+), which means around 45% of the sample companies showed outstanding performance for creating very high EVA for the current year and high MVA for future projects. Moreover, 65 companies found in Category (EVA+, MVA-) reflecting around 55% of the sample companies have been performing well for their shareholders, but the market is not too optimistic for these companies. Furthermore, the results did not give any evidence for (EVA-, MVA-) and (EVA-, MVA+) category. It means that no company in the IT sector in India has been found a value destroyer. Overall, the studies found that all of the IT companies have been the value creator, but only 45% of the companies are creating wealth for its investors for the future also.

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