

# A Study on impact of EVA on MVA on Renewable Energy Sector in India

Dr.Mangala Yaragatti<sup>1</sup>, Dr. Anil Yaragatti <sup>2</sup>, Dr.V.M.Koravi<sup>3</sup>, Ms..B.S Laxmidevi<sup>4</sup>

1.Associate Professor ,Chetan Bussiness School ,Hubbli-5800031

2.Adjunct Professor , Chetan Bussiness School ,Hubli-5800031

3.Director ,Chetan Business School, Hubballi

4. Final Year Student , , Chetan Bussiness School ,Hubli-5800031

## Absrtact:

Wealth maximization is the modern technique of financial management..Economic ValueAddition is an important for financial performance of the companies.EVA concept has been given by Stern Stewart and Co.in 1990.EVA has provided financial discipline in many USAand UK companies and encouraged managers to act like owners and boosted shareholders returns and the Market Value of their companies.This study attempts to examine the relationship of EVA and MVA with Cost of Capital in Hindustan Unilever Limited. This study is based on secondary data from 2018-2019 to2022-2023.In this study company has succeeded in creating more firm's value and fulfill the goals of wealth maximization of the shareholders and minimize the cost of capital. The co-efficient ofcorrelation between EVA and MVA, The study proves that the cost of capital (WACC) has an effective influence on EVA andlow on MVA.

**Key words:** EVA,MVA,WACC, NOPAT

## Introduction:

Economic Value Added is just a way of measuring an operation's real profitability.EVA Holds a company accountable for the cost of capital it uses to expand and operate its business and attempts to show wheather company is creating a real value for its shareholders.EVA is a better system than ROI ,growth in new products,new equipment and new manufacturing facilities.EVA measurement also requires a company to be more careful about resource allocation and investment decisions. India has launched the Mission Innovation CleanTech Exchange, a global initiative that will create a whole network of incubators across member countries to accelerate clean energy innovation.Investors from all over the world are looking for opportunities in renewable energy in India.India has set a massive target of harbouring 500GW of installed capacity by 2030.So study is based on RE sector by concentrating opportunities to the investors.

Increasing environmental concerns,climat change,government support and massive invtments in the renewable energy sector in India are making it an attractive avenue for investors.Top conglomerates in the space running at it in full swing, expanding assets and capacities to help achieve India's 2030 target of reaching 500 GW installld capacity. In the Union Budget2023-2024,the budget for the Ministry of New and Renewable Energy has been increased by 48%, i.e Rs.10,222 cr. from the revised previous year's estimated budget of Rs.7033 cr. So it is natural and interested to know the impact of EVA on MVA on top renewable energy companies in India.

In modern investment markets creating value to the shareholders and maximizing their wealth are the main objectives of companies. The Shareholder Value Creation means creating value to its shareholders by applying various metrics which comes under the 'Value Based Management' (VBM) techniques. Earlier, companies have been measuring their financial performances in terms of net profit or long-term returns. Thus the shareholder value analysis indicates that a company's success can be measured on the basis of the company's strategies and how it helps to enhance its value to the shareholders. Currently, companies have been applying the method of Shareholder Value Analysis (SVA) and it has become a

popular method for measuring the shareholder value. The concept of VBM shows how the interest of the shareholders will be affected by the management decisions which are related to investment and other areas. The SVA is created only when the long term profits exceeds over the cost of capital. However, the same in reverse would result in decreased SVA. The simple rule of SVA is that a company adds value for its shareholders only when its equity returns exceeds the cost of capital. So whenever a company needs to calculate its value it is necessary to take steps to improve its performance. Shareholder Value Analysis is a comprehensive concept of corporate finance to understand the financial performance of the companies. In general, most of the scholars accept the meaning of SVA as to how management/directors' decisions affect the net present value or the firm value of the company

EVA, a financial metric that assesses a company's ability to generate wealth for its shareholders after accounting for the cost of capital, and MVA, which reflects the difference between a firm's market value and the total capital invested, serve as key indicators of financial performance and shareholder value creation. Understanding how these metrics are influenced by capital structure decisions provides valuable insights for both practitioners and researchers in the field of corporate finance.

Through an in-depth analysis of selected companies, this study aims to uncover patterns, trends, and correlations between capital structure dynamics and the resultant implications on EVA and MVA. By doing so, it seeks to contribute to the existing body of knowledge, offering practical insights for businesses navigating the complexities of financial management and capital structure optimization.

### **Reveiw of Leterature**

**1.Stewart (1991)**proposed EVA as the financial performance measure by arguing that EVA presents a company's true profit. A key component ofEVA is to consider cost of capital in estimating the performance measurement; only when a company generates returns (i.e., NOPAT in EVA estimation) exceeding cost of capital (including both equity and debt), does a company's value become enhanced (Stewart, 1991, Stewart, 1994). Ever since the introduction of EVA to the literature, many studies investigated The study concluded a strong correlation between EVA and MVA

**2.Geyse & Hall (2004) and Russell (2005)** found that there are several methods to measure the performance of the company but the best amongst these methods is economic value added which creates its own space due to the performance value addition. Economic value added calculates the true economic profit of the company with the help of net operating profit after tax and cost of capital. If the profit is more than the cost of capital it means that the company is creating the wealth for the shareholder.

**3.Singh and Singh (2018)** compare EVA and Market Value Added (MVA) as measures of financial performance in Indian companies in "A Comparative Analysis of Economic Value Added and Market Value Added in Indian Companies." According to the study, EVA is a more reliable measure of **financial** performance than MVA.

**4.Olibe, et al. (2020)** compares EVA, MVA, and traditional accounting measures as predictors of stock returns in Nigerian companies in "Economic Value Added, Market Value Added and Traditional Accounting Measures: Which Measure Correlates Better with Stock Returns?" by. The study finds that EVA has the strongest correlation with stock returns.

**5.Sharma and Soni (2021)** conducted an economic value-added analysis of the Indian automobile industry from 2011 to 2019. According to the findings, EVA is a good predictor of a company's financial performance. Companies with higher EVA had a higher market Olibe, et al. (2020) compares EVA, MVA, and traditional accounting measures as predictors of stock returns in Nigerian companies in "Economic Value Added, Market Value Added and Traditional Accounting Measures: Which Measure Correlates Better with Stock Returns?" by. The study finds that EVA has the strongest correlation with stock returns.hare and profitability, according to the study.

**Research Methodology:**

Research methodology is a way to systematically solve the research problem. The research methodology using for find out the solutions of the research problem is analytical research methodology and extend descriptive research methodology.

**Data Source:**

The data for this research is collected from the annual report of [www.moneycontrol.com](http://www.moneycontrol.com) and company website.

**Sample Size:**

A total of five companies are selected from the Renewable energy sector, which are listed in BSE and NSE.

**The top 5 companies are:**

1. Tata Power Solar System Ltd.
2. Adani Green Energy Ltd.
3. NTPC Ltd.(National Thermal Power Corporation)
4. JSW Energy Ltd.(Jindal South West)
5. Inox Wind Ltd.

**Objectives of the Study:**

- 1.To study the Weighted Average Cost of Capital Structure.
- 2.To analyze EVA and MVA and its Impact on renewable energy sector in India.

**HYPHOTHESIS:**

**H0:** There is no significant impact between the Economic Value and Market Value of Renewable Energy Sector.

**H1:** There is a significant impact between the Economic Value and Market Value Of Renewable Energy Sector.

**Data analysis and interpretation**

**Table: 1 Comparative Analysis Of Cost Of Debt:**

| Cost of Debt | TATA      | ADANI     | JSW       | NTPC      | INOX WIND |
|--------------|-----------|-----------|-----------|-----------|-----------|
| 2018-19      | 0.07      | 0.09      | 0.10      | 0.031     | 0.33      |
| 2019-20      | 0.08      | 0.06      | 0.12      | 0.019     | 1.36      |
| 2020-21      | 0.06      | 0.04      | 0.10      | 0.043     | 0.37      |
| 2021-22      | 0.08      | 0.05      | 0.09      | 0.038     | 0.46      |
| 2022-23      | 0.04      | 0.04      | 0.03      | 0.043     | 0.38      |
| SD           | 0.02      | 0.02      | 0.03      | 0.01      | 0.44      |
| Mean         | 0.06      | 0.06      | 0.09      | 0.03      | 0.58      |
| Variance     | 0.0002593 | 0.0004283 | 0.0010899 | 0.0000975 | 0.1911409 |
| CV           | 25%       | 36%       | 38%       | 28%       | 75%       |

**Interpretation:** The cost of debt analysis reveals stable borrowing costs for TATA and ADANI, both with a mean of 0.06. JSW shows a slightly higher mean at 0.09, signaling comparatively elevated average debt expenses. NTPC maintains a favorable mean cost of debt at 0.03, indicating stable borrowing conditions. However, INOX WIND exhibits a notably higher mean of 0.58, suggesting potential financial challenges or riskier financing strategies. Variability in borrowing costs is reflected through standard deviations, with INOX WIND having the highest at 0.44, indicating substantial risk.

**Table: 2 Comparative Analysis Of Cost Equity:**

| Cost of Equity | TATA | ADANI | JSW  | NTPC | INOX WIND |
|----------------|------|-------|------|------|-----------|
| 2018-19        | 3.27 | -0.44 | 1.02 | 5.98 | -0.07     |
| 2019-20        | 1.23 | -0.11 | 1.02 | 5.12 | -0.43     |
| 2020-21        | 1.23 | 0.11  | 1.27 | 6.40 | -0.46     |
| 2021-22        | 2.04 | 0.22  | 2.80 | 7.26 | -0.63     |

|          |      |      |      |      |       |
|----------|------|------|------|------|-------|
| 2022-23  | 4.09 | 0.55 | 2.29 | 7.26 | -0.70 |
| SD       | 1.27 | 0.37 | 0.82 | 0.91 | 0.25  |
| Mean     | 2.37 | 0.07 | 1.68 | 6.40 | -0.46 |
| Variance | 1.62 | 0.14 | 0.67 | 0.82 | 0.06  |
| CV       | 54%  | 56%  | 49%  | 14%  | -54%  |

**Interpretation :** TATA's rising cost of equity signals growing investor optimism with a 54% CV indicating moderate risk. Adani's highly fluctuating cost of equity, reflected in a -560% CV, suggests significant volatility influenced by diverse factors. JSW shows a positive cost of equity trend with a low 49% CV, indicating increasing investor confidence and stability. NTPC's steadily increasing cost of equity, paired with a low 14% CV, reflects positive sentiment and a more predictable risk profile, while Inox Wind's negatively trending cost of equity and -54% CV indicate declining investor confidence and potential concerns impacting perceived risk.

**Table: 3 Comparative Analysis Of NOPAT:**

| NOPAT    | TATA    | ADANI     | JSW       | NTPC      | INOX WIND |
|----------|---------|-----------|-----------|-----------|-----------|
| 2019     | 318.17  | 473.5746  | 648.75    | 12,016.03 | -57.8565  |
| 2020     | 757.98  | 110.409   | 993.9784  | 6,708.29  | -283.833  |
| 2021     | 262.98  | 113.82    | 811.08    | 13,704.65 | -281.229  |
| 2022     | 942.44  | 434.32    | 1739.1894 | 14,625.59 | -432.1512 |
| 2023     | 373.38  | 1,045.87  | 1370.698  | 16,956.59 | -675.4258 |
| SD       | 301.15  | 381.83    | 441.41    | 3845.52   | 227.50    |
| Mean     | 492.68  | 426.64    | 1,000.85  | 11,309.44 | -250.50   |
| Variance | 90694.3 | 145791.18 | 194842.74 | 14787988  | 51757.51  |
| CV       | 0.61    | 0.89      | 0.44      | 0.34      | -0.91     |

**Interpretation:** The data indicates that NTPC consistently generates the highest Net Operating Profit After Tax (NOPAT) among the companies, with a mean of 11,309.44. However, Inox Wind exhibits negative NOPAT values, reflecting financial challenges. The coefficient of variation (CV) highlights JSW's NOPAT stability (CV: 0.44), while Inox Wind's negative CV (-0.91) signals substantial volatility and potential financial distress.

**Table:4 Comparative Analysis Of EVA:**

| EVA      | TATA        | ADANI     | JSW       | NTPC         | INOX WIND   |
|----------|-------------|-----------|-----------|--------------|-------------|
| 2019     | -4,308.89   | 218.41    | 218.41    | -85,897.69   | -680.993008 |
| 2020     | -4,313.54   | -483.82   | -483.82   | -76,002.42   | -2089.91042 |
| 2021     | -4,711.63   | -872.65   | -872.65   | -96,089.26   | -752.426085 |
| 2022     | -5,566.04   | -2,284.08 | -2,284.08 | -1,04,820.30 | -981.511706 |
| 2023     | -4,768.11   | -2,110.50 | -2,110.50 | -1,06,316.60 | -1349.82549 |
| SD       | 512.7007754 | 1071.5075 | 1071.507  | 12870.02429  | 576.1058229 |
| Mean     | -4,733.64   | -1,106.53 | -1,106.53 | -93,825.25   | -1,170.93   |
| Variance | 262862.0851 | 1148128.3 | 1148128   | 165637525.2  | 331897.9191 |
| CV       | -11%        | -97%      | -97%      | -14%         | -49%        |

**Interpretation:** The Economic Value Added (EVA) data reveals that, on average, all companies except TATA and JSW have negative EVA, with NTPC exhibiting the highest negative value. The coefficient of variation (CV) indicates high variability in EVA for Adani, JSW, and Inox Wind, while TATA has a relatively low CV, suggesting a more stable economic performance.

**Table:5 Comparative Analysis Of MVA**

| MVA      | TATA       | ADANI        | JSW         | NTPC         | INOX WIND   |
|----------|------------|--------------|-------------|--------------|-------------|
| 2018-19  | 14,241.60  | 14,00,965.08 | 6,22,711.06 | 20,51,790.18 | 6,66,945.67 |
| 2019-20  | 7,832.15   | 13,97,969.61 | 6,23,931.34 | 20,09,622.65 | 6,67,477.57 |
| 2020- 21 | 14,709.55  | 13,90,303.83 | 6,21,985.09 | 19,48,853.78 | 6,67,490.12 |
| 2021-22  | 8,234.97   | 13,66,020.83 | 6,17,978.79 | 19,37,074.48 | 6,67,690.18 |
| 2022-23  | 560.15     | 13,72,455.88 | 6,04,527.32 | 19,16,354.56 | 9,80,347.49 |
| SD       | 5770.32627 | 15550.83934  | 7976.720512 | 56194.21462  | 139954.2486 |
| Mean     | 9,115.68   | 13,85,543.04 | 6,18,226.72 | 19,72,739.13 | 7,29,990.21 |
| Variance | 33296665.3 | 241828604.2  | 63628070.13 | 3157789757   | 19587191705 |
| CV       | 63%        | 1%           | 1%          | 3%           | 19%         |

**Interpretation:** The Market Value Added (MVA) data illustrates that, on average, all companies, except TATA, show positive MVA, with NTPC having the highest mean MVA. The coefficient of variation (CV) indicates that ADANI, JSW, and INOX WIND exhibit relatively low variability in MVA, suggesting consistent market value creation, while TATA has a higher CV, signaling comparatively greater fluctuation in market value.

**Table:6 Comparative Analysis Of WACC:**

| WACC     | TATA | ADANI | JSW  | NTPC | INOX WIND |
|----------|------|-------|------|------|-----------|
| 2019     | 0.09 | 0.02  | 0.24 | 0.37 | 0.26      |
| 2020     | 0.09 | 0.04  | 0.40 | 0.27 | 0.99      |
| 2021     | 0.08 | 0.05  | 0.31 | 0.34 | 0.26      |
| 2022     | 0.09 | 0.06  | 0.51 | 0.36 | 0.34      |
| 2023     | 0.07 | 0.05  | 0.17 | 0.35 | 0.25      |
| Mean     | 0.08 | 0.05  | 0.33 | 0.34 | 0.42      |
| SD       | 0.01 | 0.01  | 0.13 | 0.04 | 0.32      |
| Variance | 0.0  | 0.0   | 0.0  | 0.0  | 0.1       |
| CV       | 0.1  | 0.3   | 0.4  | 0.1  | 0.8       |

**Interpretation:** The Weighted Average Cost of Capital (WACC) data shows that companies, on average, maintain relatively stable WACC values. Notably, INOX WIND has a higher coefficient of variation (CV) of 0.8, indicating greater variability and potential risk in its cost of capital compared to the other companies with lower CV values.

**T- Test:**

| T-Test | Tata Power Solar System Ltd. | Adani Green Energy Ltd. | JSW Energy Ltd. | NTPC Ltd. | Inox Wind Ltd. |
|--------|------------------------------|-------------------------|-----------------|-----------|----------------|
|        | 0.05                         | 0.21                    | 0.21            | 0.19      | 0.14           |

**Interpretation on T Test Value:**

As per the t- test result it shows that, value=-0.21,0.21,0.20,0.19 and 0.14 the df is 4 and the t-critical value @5% Level of Significance is 2.13.

As per the t test all companies results are lesser than the table value.

Hence, *H0* is accepted.

There is no significant relationship between EVA and MVA of Ltd, Adani green Energy Ltd, JSW Energy Ltd, NTPC Ltd and Inox Wind Ltd.

**Correlation:**

| correlation           | Tata Power Solar System Ltd. | Adani Green Energy Ltd. | JSW Energy Ltd. | NTPC Ltd. | Inox Wind Ltd. |
|-----------------------|------------------------------|-------------------------|-----------------|-----------|----------------|
|                       | 0.24                         | 0.98                    | 0.71            | 0.84      | -0.17          |
| Degree of Correlation | Low                          | High                    | Moderative      | High      | Low            |

**Interpretation on Correlation:**

Tata Power Solar System Ltd has low degree positive correlation between EVA and MVA

Adani Green Energy Ltd has high degree positive correlation between EVA and MVA. It indicates that EVA impact on MVA.

JSW has moderate positive degree of correlation between EVA and MVA. Here also the EVA has positive impact on MVA

NTPC Ltd has high degree positive correlation between EVA and MVA, So EVA directly impact on MVA. Inox Wind Ltd has low degree negative correlation between EVA and MVA, it indicates that, there is less impact on MVA.

**Findings:**

1. All selected companies showing varying trends in cost of debt, all companies are active to reduce their borrowing expenses and notably Tata Power Solar System Ltd and Adani Green Energy Ltd.
2. All selected companies has more WACC and more fluctuation in cost of debts and equity, so these companies are struggling to maintain optimal capital structure.
3. Tata Power Solar System Ltd: The fluctuating WACC indicates challenges in optimizing the capital structure, contributing to consistently negative EVA and a significant decline in MVA.
4. Adani Green Energy Ltd: Despite effective management of WACC, shift from positive to negative EVA indicates that capital structure decisions may have influenced the company's profitability. Positive MVA fluctuating year by year.
5. JSW Energy Ltd: The substantial WACC volatility correlates with fluctuations in both EVA and MVA, indicating that capital structure decisions play a important role in the company's ability to generate economic profit and create shareholder value.
6. NTPC Ltd: While NTPC demonstrates moderate WACC fluctuations, the challenges in consistently generating positive EVA. The slight decline in MVA indicates potential impacts on long-term shareholder value creation.
7. Inox Wind Ltd: The significant increase and subsequent reduction in WACC align with fluctuations in EVA. The notable improvement in MVA in 2023 hints at successful capital structure adjustments positively impacting the company's ability to create shareholder value.

### **Suggestions:**

1. **Cost of Debt Management:** All companies exhibit efforts to minimize borrowing costs, with Tata Power Solar System Ltd and Adani Green Energy Ltd leading in consistent reductions. Focusing on sustained strategies for debt cost reduction can enhance overall financial health.
2. **Equity Cost Stability:** JSW Energy Ltd's fluctuating equity costs and Adani Green Energy Ltd's recovery from initial challenges emphasize the need for stable equity structures. Companies should aim for a more predictable and positive way to attract investor confidence.
3. **WACC Optimization for Tata Power:** Tata Power Solar System Ltd's challenges with fluctuating WACC impacting EVA and MVA highlight the importance of fine-tuning the capital structure. A focused effort on WACC optimization can align financial decisions with shareholder expectations.
4. **Profitability Alignment for Adani Green Energy:** Adani Green Energy Ltd's shift from positive to negative EVA despite effective WACC management suggests a need to align capital structure decisions with sustained profitability. Strategic capital allocation should be optimized for long-term value creation.
5. **Capital Structure Volatility Awareness for JSW Energy:** JSW Energy Ltd's substantial WACC volatility impacting EVA and MVA underscores the need for a more stable capital structure. Companies should be cautious of excessive fluctuations that may impact investor perceptions.
6. **Consistent EVA Generation for NTPC:** NTPC's moderate WACC fluctuations and challenges in consistent positive EVA generation suggest an opportunity for refining capital structure decisions. A more proactive approach to aligning capital with profitability can enhance shareholder value.
7. **Positive MVA Strategies for Inox Wind:** Inox Wind Ltd's successful adjustment of WACC leading to improved MVA highlights the impact of capital structure decisions on shareholder value. Companies should focus on strategies that positively influence MVA through effective financial management.

### **Conclusion:-**

To STUDY the impact of EVA and MVA it helps to analyse how Renewable Energy Sector impact with its capital structure.

Adani Green Energy Ltd stands out with effective cost of debt management, positive MVA, and WACC control, showcasing strong financial performance. Tata Power Solar System Ltd faces challenges with fluctuating WACC, necessitating focused efforts on optimizing the capital structure. JSW Energy Ltd's substantial WACC volatility signals the need for a more stable capital structure to maintain investor confidence.

NTPC Ltd, despite moderate WACC fluctuations, should proactively refine capital structure decisions for consistent positive EVA and enhanced shareholder value. Inox Wind Ltd demonstrates positive strides in MVA after WACC adjustments, emphasizing the importance of ongoing positive MVA strategies. Overall, while Adani Green Energy Ltd excels, other companies require targeted improvements in capital structure, WACC stability, and consistent positive EVA to enhance shareholder value.

### **BIBLIOGRAPHY**

- Annual Reports of the companies.**
- Text Books**
- a) Financial Management- M.Y. Khan and P.K. Jain**
- b) Business Statistics- S.C. Gupta**

**REFERENCES**

- [1]. [https://www.researchgate.net/publication/328916442\\_The\\_Effect\\_of\\_Capital\\_Structure\\_on\\_Economic\\_Value\\_Added\\_Evidence\\_from\\_Turkey](https://www.researchgate.net/publication/328916442_The_Effect_of_Capital_Structure_on_Economic_Value_Added_Evidence_from_Turkey)
- [2]. <https://core.ac.uk/download/pdf/234629332.pdf>
- [3]. [https://www.researchgate.net/publication/337934729\\_The\\_Relationship\\_between\\_Economic\\_Value\\_Added\\_and\\_Market\\_Value\\_Added\\_An\\_Empirical\\_Analysis\\_in\\_Indian\\_Automobile\\_Industry](https://www.researchgate.net/publication/337934729_The_Relationship_between_Economic_Value_Added_and_Market_Value_Added_An_Empirical_Analysis_in_Indian_Automobile_Industry)
- [4]. <http://aegaeum.com/gallery/agm.j-4590.50-f.pdf>
- [5]. [https://www.researchgate.net/publication/336800004\\_The\\_relationship\\_between\\_intellectual\\_capital\\_with\\_economic\\_value\\_added\\_and\\_financial\\_performance](https://www.researchgate.net/publication/336800004_The_relationship_between_intellectual_capital_with_economic_value_added_and_financial_performance)

International Journal of All Research Education and Scientific Methods (IJARESM), ISSN: 2455-6211

**WEBSITES;**

- [1]. [www.moneycontrol.com](http://www.moneycontrol.com)
- [2]. [www.investopedia.com](http://www.investopedia.com)
- [3]. [www.economictimes.com](http://www.economictimes.com)
- [4]. [https://en.wikipedia.org/wiki/Tata\\_Motors](https://en.wikipedia.org/wiki/Tata_Motors)
- [5]. [https://en.wikipedia.org/wiki/Hyundai\\_Motor\\_Company](https://en.wikipedia.org/wiki/Hyundai_Motor_Company)
- [6]. [https://en.wikipedia.org/wiki/Mahindra\\_%26\\_Mahindra](https://en.wikipedia.org/wiki/Mahindra_%26_Mahindra)
- [7]. <https://en.wikipedia.org/wiki/Volkswagen>