FINANCIAL PERFORMANCE EVALUATION OF LISTED COMPANIES IN
TEHRAN STOCK EXCHANGE (TSE) BASED ON ECONOMIC VALUE ADDED (EVA)

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ABSTRACT

Economic Value Added (EVA) is a value based financial performance evaluate, an investment decision tool and it is also a performance evaluate reflecting the real amount of shareholder value created. The main purpose of this study was to calculate Economic Value Added (EVA) of listed companies in Tehran stock Exchange (TSE) during 2005-2009. The total numbers of companies listed in the Tehran Stock Exchange (TSE) are 337 over the period 2005-2009 and were chosen randomly 180 listed companies of Tehran stock Exchange (TSE).
Descriptive statistics showed that Economic Value Added (EVA) had negative amount for 2006, 2007, and 2009 but the amount of value created in 2005 and 2008 were positive. Totally the average of Economic Value Added (EVA) of listed Companies in Tehran Stock Exchange (TSE) was negative during 2005 to 2009 periods and this illustrated that listed Companies in Tehran Stock Exchange (TSE) couldn’t create value for their shareholders and investors.

**Keywords:** Performance Evaluation, Economic Value Added (EVA), Tehran stock Exchange (TSE)

**INTRODUCTION**

Maximizing stockholders' value has become the new corporate paradigm in recent years. The investors and Shareholder wealth is measured in terms of returns they receive on their investment.

It can be in forms of dividends and also in the form of capital esteem or both. Capital appreciation depends on the changes in the market value of the stocks. The market value of stocks depends upon number of factors ranging from firm unique to market unique. Financial information is used by various investors to company’s current performance and to forecast the future as well (Sharma & kumar, 2010).

Financial perspective said that the primary aim of most companies is to maximize shareholder’s value (Brigham & Ehrhardt, 2005).

Economic value added (EVA) is a practical refinement of economists’ concept of residual income - the value remaining after a company’s investors and all the other shareholders and providers of capital have been reimbursed. Economic value added (EVA) is a performance evaluation and provides a strong incentive for managers to choice and
implement value-creating investments (Fried & Deuschinger, 2008). Economic value added (EVA) is a performance measure developed by Stern Stewart & Co that attempts to measure the true economic profit produced by a company. It is frequently also referred to as "economic profit", and provides a measurement of a company's economic success (or failure) over a period of time (Investopedia, 2006).

The main purpose of this study is to compute Economic Value Added (EVA) of Companies listed in Tehran stock Exchange (TSE) and comparing the amount of value created in Tehran stock Exchange (TSE) during 2005 to 2009.

**STATEMENT OF THE PROBLEM**

In a market-driven economy many companies will create wealth. Other firms however will undoubtedly destroy it. Discovering those economic factors that lead to wealth creation and destruction among companies is important to many constituencies, not the least of which is corporate officials and investment managers. For corporate managers, wealth creation is fundamental to the economic survival of the firm. Managers that fail (or refuse) to see the importance of this imperative in an open economy do so at the peril of the organization and their own careers (Grant, 2003).

EVA is reasonable proxies for the measurement of owners’ wealth maximization while taking into account the relative risk-based costs of doing so (Hodak, 1994; Shiely, 1996).

The best firms and industries in the market are of prime importance to investment managers. With the appropriate financial tools, portfolio managers may be able to improve their performance on active and over-yield available on similar risks of passive indexed strategies. A new analysis tool is called economic value added is now to help this process of discovery and the wealth of enterprise selection.
This study wants to introduce and calculate economic value added of companies listed in Tehran Stock Exchange (TSE) 2005 -2009 periods.

OBJECTIVES OF THE STUDY

(1)- To introduce the concept of Economic Value Added (EVA).

(2)- To computes the Economic Value Added (EVA) of listed companies in Tehran stock Exchange (TSE) during 2005 to 2009 periods.

(3)- To compare the amount of value created of listed companies in Tehran stock Exchange (TSE) during 2005 to 2009 periods.

SAMPLING AND ANALYZING

In this study, library method has been used for declaring theoretical discussions and filed methods for collecting the data related to Tehran stock Exchange (TSE).

The data used in this study is obtained from companies listed in Tehran stock Exchange (TSE).

Statistical Populations of research are 337 listed companies of TSE and based on Morgan and table, Researcher has selected randomly 180 listed companies of Tehran stock Exchange (TSE).

The following conditions are considered for selecting a firm:

1. Selected firms should have been accepted in the Tehran Stock Exchange (TSE) before 2004.
2. Chosen firms should have been active and their stocks should have been traded in the Tehran Stock Exchange (TSE) during the time period of the study (2005-2009).

3. Companies listed in Tehran Stock Exchange (TSE) should not have a negative net income, negative earnings before interest & tax (EBIT), and negative net operating profit after Tax (NOPAT).

CONCEPT AND CALCULATION OF ECONOMIC VALUE ADDED (EVA)

Economic Value Added (EVA) is defined as the corporate operating profit after taxes (NOPAT), minus the cost of capital (Rappaport, 1986, 1998). EVA proponents assume that any increment in the firm EVA increases the company’s value (Chen and Dodd, 1997).

In this study, EVA calculated as follows:

\[
EVA = NOPAT - (WACC \times IC),
\]

Where

- **NOPAT** = Net Operating Profits After Taxes.
- **WACC** = Weighted Average Cost of Capital
- **IC** = Invested Capital

In this study NOPAT, IC, and WACC are calculated as follows:

\[
NOPAT = EBIT \times (1 - \text{Tax Rate})
\]

Where

- **EBIT**: earnings before interest and tax
Invested capital = Total assets – non-interest-bearing liabilities (NIBLs)

\[ WACC = (ke \times W_e) + (k_p \times W_p) + (k_d(pt)[1 - t] \times W_d) \]

Where:

\( WACC \) = Weighted average cost of capital

\( ke \) = Cost of common equity capital= (\text{Dividends per share} / \text{Price per share in beginning year}) + growth rate

\( W_e \) = Percentage of common equity in the capital structure, at market value

\( k_p \) = Cost of preferred equity=\text{Dividends per share} / \text{Price per share in beginning year}

\( W_p \) = Percentage of preferred equity in the capital structure, at market value

\( k_d(pt) \) = Cost of debt (pretax)= \text{interest expense} / \text{debt}

\( t \) = Tax rate

\( W_d \) = Percentage of debt in the capital structure, at market value

**DESCRIPTIVE STATISTICS OF LISTED COMPANIES OF TSE BASED on EVA**

**EVA of listed companies of TSE in 2005**

According table 1 minimum and maximum for EVA in 2005 are -617452.3 and 1998110.2. The results show that average of EVA of listed companies of TSE in 2005 is 52109.
Table 1 Descriptive Statistics of listed companies of TSE in 2005

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVA 2005</td>
<td>180</td>
<td>-617452.3</td>
<td>1998110.2</td>
<td>52109</td>
<td>186798.5</td>
</tr>
<tr>
<td>Valid N (list wise)</td>
<td>180</td>
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</tbody>
</table>

Figure 1 shows that Saipa Co. (EVA=1998110.2; No: 14), Iran Khodro Industrial Group Co. (EVA=610205.1; No: 7), Khark Petrochemical Co. (EVA=598947.5; No: 55), and Arak Petrochemical Co. (EVA=490570.5; No: 58) have maximum positive EVA in 2005.

And Bahman Group Co. (EVA=-617452.3; No: 16), Iran National Copper Industries Co. (EVA=-312737.3; No: 28), Rena Industrial Group Investment Co. (EVA=-154007.2; No: 5), and Sepahan Cement Co. (EVA=-55519.07; No: 169) have minimum negative EVA in 2005.
EVA of listed companies of TSE in 2006

According table 2 minimum and maximum for EVA in 2006 are -1286947.5 and 1272261.3. The results show that average of EVA of listed companies of TSE in 2006 is -10828.

Table 2 Descriptive Statistics of listed companies of TSE in 2006

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
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</thead>
<tbody>
<tr>
<td>EVA 2006</td>
<td>180</td>
<td>-1286947.5</td>
<td>1272261.3</td>
<td>-10828</td>
<td>175274.3</td>
</tr>
<tr>
<td>Valid N (list wise)</td>
<td>180</td>
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</tbody>
</table>

Figure 2 shows that Iran Khodro Industrial Group Co. (EVA=1272261.4; No: 7), Khark Petrochemical Co (EVA=327113.7; No: 55), Gol-E-Gohar Iron Ore Co. (EVA=313335.4; No: 96), and Tehran Cement Co. (EVA=236546.8; No: 168) have maximum positive EVA in 2006.

And Iran National Copper Industries Co. (EVA=-1286947.5; No: 28), Shomal Cement Co. (EVA=-928420.5; No: 170), Bahman Group Co. (EVA=-657816.6; No: 16), and Informatics Services Corp. (EVA=-426970.6; No: 179) have minimum negative EVA in 2006.

Figure 2 EVA of listed companies of TSE in 2006
EVA OF LISTED COMPANIES OF TSE IN 2007

According table 3 minimum and maximum for EVA in 2007 are -1949632.1 and 1237975.02. The results show that average of EVA of listed companies of TSE in 2007 is -12789.

Table 3 Descriptive Statistics of listed companies of TSE in 2007

<table>
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<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
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</thead>
<tbody>
<tr>
<td>EVA 2007</td>
<td>180</td>
<td>-1949632.145</td>
<td>1237975.02</td>
<td>-12789</td>
<td>234330.18</td>
</tr>
<tr>
<td>Valid N (list wise)</td>
<td>180</td>
<td>-1949632.145</td>
<td>1237975.02</td>
<td>-12789</td>
<td>234330.18</td>
</tr>
</tbody>
</table>

Figure 3 shows that Khark Petrochemical Co. (EVA=1237975.1; No: 55), Gol-E-Gohar Iron Ore Co. (EVA=639208.2; No: 96), Arak Petrochemical Co. (EVA=554951.2; No: 58), Behran Oil Co. (EVA=380427.99; No: 107), and Sepahan Cement Co. (EVA=380427.9; No: 169) have maximum positive EVA in 2007.

And Iran Khodro Industrial Group Co. (EVA=-1949632.1; No: 7), Bahman Group Co. (EVA=-1129196.9; No: 16), Saipa Co. (EVA=-837591.95; No: 14), and Iran National Copper Industries Co. (EVA=-760581.7; No: 28) have minimum negative EVA in 2007.
EVA AND MVA OF LISTED COMPANIES OF TSE IN 2008

According to Table 4, the minimum and maximum values for EVA in 2008 are -1535343.1 and 3223790.7. The results show that the average EVA of listed companies of TSE in 2008 is 14329.

Table 4 Descriptive Statistics of listed companies of TSE in 2008

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
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</thead>
<tbody>
<tr>
<td>EVA 2008</td>
<td>180</td>
<td>-1535343.1</td>
<td>3223790.7</td>
<td>14329</td>
<td>339703.4</td>
</tr>
<tr>
<td>Valid N (list wise)</td>
<td>180</td>
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</tbody>
</table>

Figure 4 shows that Iran National Copper Industries Co. (EVA=3223790.7; No: 28), Khark Petrochemical Co. (EVA=1322836.5; No: 55), Gol-E-Gohar Iron Ore Co. (EVA=1135620.3; No: 96), and Iran Khodro Industrial Group Co. (EVA=831734.5; No: 7) have the maximum positive EVA in 2008.

And Saipa Co. (EVA=-1535343.19; No: 14), Bahman Group Co. (EVA=-1318342.1; No: 16), Zamyad Co. (EVA=-703480.6; No: 17), and Behshahr Industrial Development Corp. (EVA=-450985.2; No: 42) have the minimum negative EVA in 2008.
EVA OF LISTED COMPANIES OF TSE IN 2009

According table 5 minimum and maximum for EVA in 2009 are -3229753.03 and 925358.7. The results show that average of EVA of listed companies of TSE in 2009 is -77477.

**Table 5 Descriptive Statistics of listed companies of TSE in 2009**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVA 2009</td>
<td>180</td>
<td>-3229753.03</td>
<td>925358.7</td>
<td>-77477</td>
<td>403128.3</td>
</tr>
<tr>
<td>Valid N (list wise)</td>
<td>180</td>
<td></td>
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</tbody>
</table>

Figure 5 shows that Gol-E-Gohar Iron Ore Co. (EVA=925358.7; No: 96), Chadormalu Mineral & Ind. Co. (EVA=749578.4; No: 94), International Construction Development Co. (EVA=471173.3; No: 118), and Iran Khodro Industrial Group Co. (EVA=326572.6; No: 7) have maximum positive EVA in 2009.

And Iran National Copper Industries Co. (EVA=-3229753.04; No: 28), Saipa Co. (EVA=-2957102.1; No: 14), Bahman Group Co. (EVA=-1640696.7; No: 16), and Informatics Services Corp. (EVA=-1308288.8; No: 179) have minimum negative EVA in 2009.
EVA AND MVA OF LISTED COMPANIES OF TSE IN 2005-2009 PERIODS

According to Table 6, the minimum and maximum values of EVA in the 2005-2009 period are -1072700.9 and 681565.8. The results show that the average EVA of listed companies of TSE in 2005-2009 periods is -6931.

Table 6 Descriptive Statistics of listed companies of TSE in 2005-2009 periods

<table>
<thead>
<tr>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVA 2005-2009</td>
<td>-1072700.9</td>
<td>681565.8</td>
<td>-6931</td>
<td>143133.6</td>
</tr>
<tr>
<td>Valid N (list wise)</td>
<td>180</td>
<td>180</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 6 shows that Gol-E-Gohar Iron Ore Co. (EVA=681565.8; No: 96), Khark Petrochemical Co (EVA=593623.53; No: 55), Chadormalu Mineral & Ind. Co. (EVA=283298.4; No: 94), and Iran Khodro Industrial Group Co. (EVA=218228.2; No: 7) have maximum positive EVA in the 2005-2009 period.

And Bahman Group Co. (EVA=-1072700.9; No: 16), Saipa Co. (EVA=-672749.06, No: 14), Iran National Copper Industries Co. (EVA=-473245.7; No: 28), and Informatics Services Corp. (EVA=-439499.7; No: 179) have minimum negative EVA in the 2005-2009 period.
FINDINGS AND CONCLUSION OF STUDY

The total average of 2005 to 2009 periods indicated that EVA had negative amount in listed companies of TSE and it illustrated that listed companies of TSE couldn’t create positive worth in TSE for shareholders and investors. On this basis 90 (50 %) listed companies of TSE had negative EVA; and 90 (50 %) listed companies of TSE had positive EVA in 2005 -2009 periods.
By 2005, the average of EVA had positive amount in 2005 and it means that the listed companies of TSE in 2005 had succeeded in value creation for stockholders and investors. In 2005, 131 (72.3 %) and 49 (27.2 %) listed companies of TSE had positive and negative EVA.

By 2006, the average of EVA of listed companies in TSE obtained negative amount and it expresses that listed companies of TSE no created value (internal value) for shareholders and investors. The results showed that 70 (38.9 %) and 110 (61.1 %) of listed companies of TSE had positive and negative EVA.

By 2007, the average of EVA of listed companies in TSE acquired negative amount and it states that listed companies of TSE no created value (internal value) for shareholders and investors. Accordingly, 78 (43.3 %) and 102 (56.7 %) of listed companies of TSE had positive and negative EVA.

By 2008, the average of EVA of listed companies in TSE had positive amount and it reveals that listed companies of TSE created value (internal value) for shareholders and investors. In this year, 76 (42.2 %) and 104 (57.8 %) of listed companies of TSE had positive and negative EVA.

By 2009, the average of EVA had negative amount in 2009 and it appears that the listed companies of TSE in 2009 did not create value for stockholders and investors.

The results indicated that 70 (38.9 %) and 110 (61.1 %) of listed companies of TSE had positive and negative EVA.

**CONCLUSION**

Economic value added (EVA) is a high-power tool for explaining of companies real value, more so than other variables of companies performance and reflected the true economic
value of companies. Therefore EVA can be used as an alternative performance measure for all listed companies of TSE.

The obtained wealth of the listed companies of TSE was decreasing during 2005 to 2006, and this decreased the wealth amount of stockholders and investors in TSE. Cost of equity (ke), WACC and invested capital (IC) was increasing 18.2 %, 22.2 %, and 28.7% during 2005 to 2006; but NOPAT did not increase substantially and grew only 13.3 % percent. Therefore NOPAT couldn’t cover cost of capital and it is caused for moving positive EVA in 2005 to negative EVA in 2006.

Negative amount in EVA grew from 2006 to 2007. Cost of equity (ke) and invested capital (IC) in model 1 was increasing 3.8 % and 18.2 % and WACC decreased 9.8 % during 2006 to 2007; but NOPAT did not increase substantially and grew only 10.1 % percent. Due low growth of NOPAT and high growth of IC, most companies took negative amount of EVA in 2007; and it can be reason for growth negative in EVA during 2006 to 2007.

Cost of equity (ke) decreased 7.4 %, invested capital (IC) increased 7.6 % and WACC was fixed; and also NOPAT increased 3.3 % percent during 2007 to 2008. Number of companies including negative EVA was increased from 102 to 104; but the average of EVA was positive for listed companies in TSE in 2008. It means that the listed companies of TSE in 2008 had succeeded in making value creation and could increase the wealth of the stockholders and investors. Although many companies of TSE had also negative amount it is caused that amount of positive EVA had increased due amount of growth of NOPAT for some companies were bigger than amount of growth of NOPAT many listed companies TSE in 2008.

Cost of equity (ke) decreased 4 %, invested capital (IC) increased 8.3 % and WACC was fixed; and also NOPAT increased 7.1 % percent during 2008 to 2009. Number of companies
including negative EVA was increased from 104 to 110 and average of EVA was negative to listed companies in TSE in 2009. Findings indicate that amount negative EVA was increased due amount of high growth of IC for many listed companies TSE in 2009.

This study illustrates that the traditional measures do not reflect the real value of shareholders and EVA can improve traditional performance measurement and present real worth for shareholders and investor.

REFERENCES


