CHAPTER -5

SUMMARY OF FINDINGS, SUGGESTIONS AND CONCLUSIONS

CHAPTER -5

SUMMARY OF FINDINGS, SUGGESTIONS, AND CONCLUSIONS

5.1 Introduction

EVA is very useful to measure the financial condition of the Company; it focuses more on the value creation. The study consists of thirteen independent variables and one dependent variable. In this study MVA, ROA, ROE, ROS, ROI, CR, DR, QR, EPS, DPS, P/E, NOPAT, and P (share price) are considered as independent variables (IVs), and EVA is used as dependent variable. This study examined that whether EVA as dependent variable has significant relationship with independent variables (IVs=MVA, ROA, ROE, ROS, ROI, CR, DR, QR, EPS, DPS, P/E, NOPAT, and P) in listed Companies of Tehran Stock Exchange (TSE).

5.2 The summary of the Research Findings and conclusion

The Research findings and conclusion contain two parts;

1-Findings and conclusion of research descriptive statistics, and

2- Findings and conclusion of research inferential statistics.

5.2.1 Findings and conclusion of research descriptive statistics

The total average of periods 2005 to 2009 indicate that EVA in model 1 had positive amount but EVA in model 2 obtained negative worth in listed Companies of TSE in the year 2005 to 2009 periods. It indicates that although listed Companies of TSE with EVA model 1 couldn't create positive worth in TSE for shareholders and investors but EVA in model 2 had succeeded in making positive value in TSE.

The Findings illustrate that the amount of EVA in model 1 (EVA in model 1= -6931), is negative but in model 2 (EVA in model 2= 80035) is positive. This difference can be found by analyzing of main variables in calculation of EVA. The amount of invested capital (IC), NOPAT, and some subset of WACC (weight of debt, cost of debt, and weight of equity) are common in both models 1 and 2. The main difference is found in cost of equity (K_e). IC and WACC indirectly and NOPAT directly can involve in the c**a**lculation of EVA. Therefore, whatever WACC and K_e are smaller, can be expected

that the amount of EVA will move toward the positive and the number of Companies and industries with positive EVA will increase. Based on obtained results, the amount of WACC and K_e in model 2 (WACC=0.15 and K_e=0.17) are smaller than WACC and K_e in model 1 (WACC=0.20 and K_e=0.25), so the amount of EVA in model 2 is better than the average of EVA in model 2. Consequently, total EVA was transformed into positive EVA in model 2.

According table 4.9, 90 (50 %) listed Companies of TSE in model 1 and 56 (31.1 %) listed Companies of TSE in model 2 had negative EVA; and 90 (50 %) listed Companies of TSE in model 1 and 124 (68.9 %) listed Companies on TSE in model 2 had positive EVA in 2005-2009 periods.

The average of MVA in three models 1, 2, and 3 obtained positive amount in listed Companies of TSE in 2005- 2009 periods and it indicates that listed Companies of TSE created value (external value) for shareholders and investors.

In these periods, 90 (50 %) listed Companies of TSE in model 1, 57 (31.7 %) in model 2, and 92 (51.1 %) in model 3 had negative MVA for listed Companies of TSE during the years 2005-2009; and 90 (50 %) in model 1, 123 (68.3 %) in model 2, and 88 (48.9 %) in model 3 had positive MVA for listed Companies of TSE during the years 2005-2009.

According to above reasons, when some variables in calculation of EVA are common such as invested capital (IC), NOPAT, and some subsets of WACC (weight of debt, cost of debt, and weight of equity), then the amount of cost of equity (K_e) have main role for amount of EVA in model 1 and 2. But the amount of EVA changes from year to year is relevant with changes in NOPAT, IC, WACC, and their subsets.

By 2005, the average of EVA with model 1, MVA with model 1, and MVA with model 3 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 for all models EVA with model 1, MVA with model 1, and MVA with model 3 during the year 2005(table 4.10).

In 2005, 131(72.3 %) and 49 (27.2 %) listed Companies of TSE had positive and negative EVA in model 1.

Also 129 (71.7 %) and 51 (28.3 %) listed Companies of TSE had positive and negative MVA in model 1; and Also 122 (67.8 %) and58 (32.2 %) listed Companies of TSE had positive and negative MVA in model 3(table 4.9).

By 2006, the average of EVA with model 1 of listed Companies in TSE obtained negative amount in the year 2006 and it expresses that listed Companies of TSE no created value (internal value) for shareholders and investors. Therefore the obtained wealth of the listed Companies of TSE was decreasing during the year 2005 to 2006, and this decreased the wealth amount of stockholders and investors in TSE.

The results showed that 70 (38.9 %) and 110 (61.1 %) of listed Companies of TSE had positive and negative EVA in model 1 (table 4.9).

Cost of equity (K_e), WACC and invested capital (IC) in model 1 was increasing to 18.2 %, 22.2 %, and 28.7% during the year 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 the year 2005 to negative EVA in the year 2006.

The average of MVA with model 1 and MVA with model 3 of listed Companies of TSE achieved positive amount in 2006 and it indicates that listed Companies of TSE created value (external value) for shareholders and investors.

According table 4.9, 68 (37.8 %) and 112 (62.2 %) listed Companies of TSE had positive and negative MVA in model 1; and 84 (46.7 %) and 96 (53.3 %) listed Companies of TSE had positive and negative MVA in model 3.

In addition, in during the year 2005 to 2006 the market return of TSE decreased from 10259 to 10074 and during this period EVA model 1 amount reduced and got negative amount (EVA model 1 during the year 2005 to 2006= 52109 to -10826). Although the amount of MVA model 1 and MVA model 3 were positive but both models similar EVA model 1 based on the reduction of the market return of TSE decreased in 2005-2006 period (MVA model 1 during the year 2005 to 2006 = 288947 to 107334 & MVA model 3 during the year 2005 to 2006= 405982.1 to 244879.2).

By 2007, the average of EVA with model 1 of listed Companies in TSE obtained negative amount in the year 2007 and it states that listed Companies of TSE no created value (internal value) for shareholders and investors.

According table 4.9, in model 1, 78 (43.3 %) and 102 (56.7 %) of listed Companies of TSE had positive and negative EVA in model 1.

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

The average of MVA with model 1 had negative value but MVA with model 3 obtained positive worth in listed Companies of TSE in the year 2007. It indicates that although listed Companies of TSE with MVA model 1 couldn't create positive worth in TSE for shareholders and investors but with MVA in model 3 had succeeded in making positive value (external value) in TSE.

According table 4.9, 69 (38.3 %) and 111 (61.7 %) of listed Companies of TSE had positive and negative MVA in model 1; and 69 (38.3 %) and 111 (61.7 %) of listed Companies of TSE had positive and negative MVA in model 3.

During the year 2006 to 2007 the market return of TSE decreased from 10074 to 9737 and during this period EVA model 1 amount reduced and negative amount increased (EVA model 1during the year 2006 to 2007= -10826 to -12789). Also MVA model 1 amount similar EVA (model 1) reduced and obtained negative amount during the year 2006-2007 (MVA model 1during the year 2006 to 2007= 107334 to -39616). Although the amount of MVA (model 3) was positive but similar EVA model 1 and MVA model 1 due reduction of the market return of TSE decreased in the year 2006-2007 period (MVA model 3 during the year 2006 to 2007= 244879.2 to 192858.1).

By 2008, the average of EVA with model 1 of listed Companies in TSE had positive amount in the year 2008 and it reveals that listed Companies of TSE created value (internal value) for shareholders and investors (table 4.10).

Based on table 4.9, 76 (42.2 %) and 104 (57.8 %) of listed Companies of TSE had positive and negative EVA in model 1.

Cost of equity (K_e) decreased to7.4 %, invested capital (IC) increased to7.6 % and WACC was fixed; and also NOPAT increased 3.3 % percent during the year 2007

to 2008. Number of Companies including negative EVA was increased from 102 to 104; but the average of EVA was positive on Companies in TSE in 2008. It means that the listed Companies of TSE in the year 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. For example, amount of EVA for Iran National in Copper Industries Co. can only cover EVA of 20 listed Companies of TSE in the year 2008.

The average of MVA with model 1 had positive value but MVA with model 3 obtained negative worth in listed Companies of TSE in the year 2008. It indicates that although listed Companies of TSE had succeeded in making positive value (external value) for shareholders and investors with MVA in model 1 but based on MVA model 3 couldn't create positive worth in TSE (table 4.10).

According table 4.9, 72 (40 %) and 108 (60 %) of listed Companies of TSE had positive and negative MVA in model 1; and 68 (37.8 %) and 112 (62.2 %) of listed Companies of TSE had positive and negative MVA in model 3.

In during the year 2007 to 2008 the market return of TSE increased from 9737 to 9841 and during this period EVA (model1) amount raised and took positive amount (EVA model 1 during the year 2006 to 2007= -12789 to 14329). Also MVA (model1) amount similar EVA model 1 increased and obtained positive amount during the year 2007-2008 (MVA model 1 during the year 2006 to 2007= -39616 to 597784). Unlike EVA model 1 and MVA model 1, the amount of MVA model 3 obtained negative amount in 2007-2008 period (MVA model 3 during the year 2007 to 2008= 192858.1 to -368191.5).

By 2009, the average of EVA with model 1, MVA with model 1, and MVA with model 3 had negative amount in 2009 and it appears that the listed Companies of TSE in the year 2009 did not succeeded in value creation for stockholders and investors in all models, EVA with model 1, MVA with model 1, and MVA with model 3 during the year 2009 (table 4.10).

The results indicate that 70 (38.9 %) and 110 (61.1 %) of listed Companies of TSE had positive and negative EVA in model 1. The average of EVA was negative on

Companies in TSE in the year 2009. It means that the listed Companies of TSE in the year 2009 could not keep positive amount of EVA during the year 2008 to 2009 and could not increase the wealth of the stockholders and investors.

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

The average of both models MVA with model 1 and MVA with model 3 of listed Companies of TSE obtained negative amount in the year 2009 and it indicates that listed Companies of TSE did not create value (external value) for shareholders and investors.

Based on tables 4.9, 66 (36.7 %) and 114 (63.3 %) of listed Companies of TSE had positive and negative MVA in model 1; and 60 (33.3 %) and 120 (66.7 %) of listed Companies of TSE had positive and negative MVA in model 3.

The results of this study indicate that 50 % (31.1 %) listed Companies of TSE had no profitability during the period the year 2005 to 2009 from the view of EVA in model 1. Negative EVA in model 1 in the year 2006, 2007, and the year 2009 is caused by low quality of asset management and also due to bad performance of listed Companies of TSE.

Obtained results exhibits that by using EVA method, the management of the Company can be aware that how much cost must be paid by the Company related to the use of the Company's capital. In fact, organization's NOPAT (Net Operating Profit after Tax) during a period is covering its WACC (Weighted Average Cost of Capital), thus generating value for their shareholders and investors.

Although in during the year 2008 to 2009 the market return of TSE increased from 9841 to 11207 but EVA model 1 and MVA model 1 amount decreased and took negative amount (EVA model 1 during the year 2008 to 2009= 14329 to -77477 & MVA model 1 during the year 2008 to 2009= 597784 to -169674). Also the amount of

MVA model 3 improved but also had negative amount in 2008-2009 periods (MVA model 3 during the year 2008 to 2009= -368191.5 to -137842.1).

Based on obtained results, the majority of the firms in four out of five years (except 2005) had a negative Economic Value Added (EVA) in model 1, but in model 2, the majority of the firms during the periods 2005 to 2009 had a positive Economic Value Added (EVA). In model 1, fifteen industries out of twenty four had negative average Economic Value Added in the year 2009, fourteen in the years 2006 and 2008, twelve in the year 2007, and only four in the year 2005.

5.2.2 Findings and conclusion of research inferential statistics

Analysis of Hypothesis 1 and correlation co-efficient (Table 4.11) show that the relationship between EVA with models 1 and 2 and MVA with model 3 are significant and direct and positive (Correlation Co-efficient in models 1 and 2= 0.705 & 0.627).

The results indicate that whenever MVA with model 3 is reduced as EVA with model 1 decreased during the years 2005-2006 and 2006-2007. But obtained amount of EVA with models 1 and MVA with model 3 were inverse during the year 2007-2008 and 2008- 2009(MVA model 3 during the years 2005 to 2009 = 405982, 244879, 192858, -368191, and -137842 & EVA model 1 during the years 2005 to 2009 = 52109, -10826, -12789, 14329, and -77477).

Co-efficient of determination (Table 4.68) show that relationship between EVA with models 1 and 2 and MVA with model 3 are medium (R^2 between EVA1 & MVA3 = 0.497 and R^2 between EVA2 & MVA3 = 0.393) and had second co-efficient of determination between other independent variables. Based on these results, 49.7% and 39.3% in model 1 and 2 of the variation in the EVA is explained by MVA model 3. The regression model appears to be useful for making predictions since the value of R^2 for firs hypothesis.

Co-efficient of determination between EVA with models 1 and MVA with model 3 is bigger than EVA with models 1 and 2 and MVA with model 3 and therefore EVA with models 2 can be better predicted by MVA with model 3.

The analysis result of this hypothesis is in line with the study by Saktivel (2011), Uyemura et al. (1996), Lehn and Makhija (1997), Kim and Ahn (2004),

Fernandez (2003 & 2001), Pablo Fernández (2002), Huang and Liu (2010), Lee and Kim (2009), Milunovich and Tsuei (1996), Uyemura, Kantor and Petit (1996), You Lee (1995), Stewart (1991), and Stern (1993) but is difference with study by Hermanu (2007) , Kyriazis and Anastassis (2007), De Wet (2004), Pushner (1997), Kramer and Peters' (2001), and Thomas (1993).

Stewart (1991) reported R^2 of 0.97 between changes in EVA and changes in MVA for 25 groupings of firms over the period 1987-88.stern, Stewart, and chew (1995) conclude that changes in EVA over a five-year period explained 50 % of the changes in MVA over the same period. Thomas (1993) indicated an R^2 between MVA and EVA of just 4 % for the 1,000 Companies in stern Stewart 1,000 database in 1988.After removing 31 Company's outlier; he found that the R^2 increased to 27%. Stern (1993) the R^2 for EVA relative to MVA was 50%. Uyemura, Kantor and Petit (1996), Lehn and Makhija (1997), and Pablo Fernández (2002) indicated the correlation co-efficient between MVA and EVA is 40%, 58 %, and 18%. In study of Fernandez (2001), the correlation between EVA and MVA was negative. The present study proved that a strong positive linear relationship existed between EVA and MVA.

Analysis of Hypothesis 2 and correlation co-efficient (Table 4.11) show that the relationship between EVA and ROA is significant and direct (positive) in both models 1 and 2 (Correlation Co-efficient in models 1 and 2= 0.387 and 0.407).

In model 1, ROA reduced during the year 2005 to 2006 (ROA during the year 2005 to 2006= 0.16 to 0.15), and the year 2008 to 2009 (P during the year 2008 to 2009= 0.14 to 0.12) and at during this periods, value amount of EVA also decreased (in model 1) and took negative amount. Also during the year 2006 to 2007, amount of ROA remained stable (ROA during the year 2006 to 2007=0.15 to 0.15) and at during this period, EVA amount remained negative but a little decreased. Unlike during these periods, ROA reduced during the year 2007 to 2008 (ROA during the year 2007 to 2008=0.15 to 0.14) but EVA improved during the year 2007 to 2008 and got positive amount.

Co-efficient of determination (Table 4.68) shows that relationship between EVA and ROA is almost useful in both models 1 and 2 (R^2 model 1= 0.15 & R^2 model 2 = 0.155) and 15 % in model 1 and 15.5 % in model 2 of the variation in the EVA is

explained by ROA. Co-efficient of determination in both models 1 and 2 is equal and in both models equally, EVA is predicted by ROA.

The analysis result of hypothesis 2 is in line with the study by Lehn and Makhija (1997), Lee and Kim (2009), Chmelíková (2008), Johannes J. Prinsloo (2007), and You Lee (1995). Correlation co-efficient of between EVA and ROS in study of Lehn and Makhija (1997) was 0.46 that is a little bigger than present study (0.387 and 0.407 in models 1 and 2). Unlike present study, Chmelíková (2008) indicated relationship between EVA and ROA is strong.

Analysis of Hypothesis 3 and correlation co-efficient (Table 4.11) show that the relationship between EVA and ROE is significant and direct (positive) in both models 1 and 2 (Correlation Co-efficient in models 1 and 2= 0.319 and 0.327).

In model 1, ROE reduced during the year 2005 to 2006 (ROE during the year 2005 to 2006= 0.52 to 0.37), and during the year 2008 to 2009 (ROE during the year 2008 to 2009= 0.33 to 0.29) and during these periods, EVA also decreased (in model 1) and had negative amount. ROE during the year 2006 to 2007 increased to 8.1 % and during the year 2007 to 2008 reduced to 17.5 % but EVA Considerably in the year 2006 to 2007 decreased and during the year 2007 to 2008 increased.

Co-efficient of determination (Table 4.68) shows that relationship between EVA and ROE is almost weak in both models 1 and 2 (R^2 model 1= 0.102 & R^2 model 2 = 0.099) and 10.2 % in model 1 and 9.9 % in model 2 of the variation in the EVA is explained by ROE. Co-efficient of determination in both models 1 and 2 is equal and in both models 1 and 2 equally, EVA is predicted by ROE.

The analysis result of hypothesis 3 is in line with the study by Lehn and Makhija (1997), Lee and Kim (2009), Hamidah (2009), Chmelíková (2008), Pfeiffer (2000), and You Lee (1995) .Correlation co-efficient of between EVA and ROS in study of Lehn and Makhija (1997) was 0.46 that is beiger than present study (0.319 and 0.327 in models 1 and 2). Unlike present study, Chmelíková (2008) indicated relationship between EVA and ROE is strong.

Analysis of Hypothesis 4 and correlation co-efficient (Table 4.11) show that the relationship between EVA and ROS is significant and direct (positive) in both models 1 and 2(Correlation Co-efficient in models 1 and 2= 0.395 and 0.449).

The results indicate that in model 1, whenever ROS during the year 2005 to 2009 is reduced or increased (ROS in the years 2005 to 2009 = 0.48, 0.31, 0.27, 0.29, and 0.24) as EVA decreased and increased (EVA model 1 in the years 2005 to 2009=52109, -10826, -12789, 14329, and -77477).

Co-efficient of determination (Table 4.68) shows that relationship between EVA and ROS is almost useful in both models 1 and 2 (R^2 model 1= 0.156 and R^2 model 2=0.203) and have highest co-efficient of determination between other profitability ratios in both models 1 and 2. Based on these results, about 15.6 % in model 1 and 20.3 % in model 2 of the variation in the EVA is explained by ROS.

The analysis result of hypothesis 4 is in line with the study by Lehn and Makhija (1997). Correlation co-efficient of between EVA and ROS in study of Lehn and Makhija (1997) was 0.39 that is almost equal with present study (0.395 and 0.449 in models 1 and 2).

Analysis of Hypothesis 5 and correlation co-efficient (Table 4.11) show that the relationship between EVA and ROI is significant and direct (positive) in both models 1 and 2(Correlation Co-efficient in models 1 and 2= 0.236 and 0.336).

In model 1, ROI reduced during the year 2005 to 2006 (ROI during the year 2005 to 2006= 0.18 to 0.17), and during the year 2008 to 2009 (ROI during the year 2008 to 2009= 0.17 to 0.16) and during these periods, EVA also decreased (in model 1) and had negative amount. ROI during the year 2006 to 2007 and 2007 to 2008 had stable amount (= 0.17) but EVA in the year 2006 to 2007 decreased and during the year 2007 to 2008 increased.

Co-efficient of determination (Table 4.68) shows that relationship between EVA and ROS is weak in both models 1 and 2 (R^2 model 1= 0.156 and R^2 model 2=0.203).

Therefore 5.6 % in model 1 and 10.4 % in model 2 of the variation in the EVA is explained by ROI. Co-efficient of determination between EVA and ROI in model 2 is bigger than model 1 and therefore model 2 can predict better EVA by ROI.

The analysis result of this hypothesis is in line with the study by Pfeiffer (2000).

Analysis of Hypothesis 6 shows that the relationship between EVA and CR is not significant in both models 1 and 2 (table 11 and 68).

The amount of Co-efficient of determination (Table 4.68) in both models 1 and 2 are almost zero (R^2 model 1= 0.001 and R^2 model 2 = 0.003) and it demonstrate that whatsoever EVA is not explained by CR in both models 1and 2.

Hence CR as a traditional evaluation tool cannot be a predictor of worth creation for shareholders in TSE.

Researcher did not detect studies in line with analysis of present hypothesis but this study illustrated that EVA and CR are uncorrelated.

Analysis of Hypothesis 7 and correlation co-efficient (Table 4.11) show that the relationship between EVA and DR is significant and indirect (negative) in both models 1 and 2 (Correlation Co-efficient in models 1 and 2= -0.189 and -0.223).

In model 1, DR reduced during the year 2005 to 2006 (DR during the year 2005 to 2006= 0.65 to 0.57) and during this periods, value amount of EVA in model 1 also decreased and had negative amount. DR fixed during the year 2006 to 2008 (DR during the year 2006 to 2008= 0.57, 0.57, and 0.57), but EVA during the year 2006 to 2007 decreased and was also negative and during the year 2007 to 2008 increased and had positive amount. DR during the year 2008 to 2009 increased to 1.7 % but EVA amount reduced and had negative amount.

Co-efficient of determination (Table 4.68) shows that relationship between EVA and DR is weak in both models 1 and 2 (R^2 model 1= 0.036 and R^2 model 2 = 0.047).Therefore 3.6 % in model 1 and 4.7 % in model 2 of the variation in the EVA is explained by DR. It proved that little percentage of DR can explain EVA inversely in both models 1 and 2. As well as, Co-efficient of determination in both models 1 and 2 is almost equal and both models 1 and 2 equally can predict EVA by DR inversely and weakly.

Researcher did not detect any studies in line with analysis of present hypothesis but this study displayed that there is weak relationship between EVA and DR.

Analysis of Hypothesis 8 shows that the relationship between EVA and QR is not significant in both models 1 and 2 (table 11 and 68).

The amount of Co-efficient of determination (Table 4.68) in model 1 is almost zero (R^2 model 1= 0.004) and in model 2 is near zero(R^2 model 2 = 0.018) and it exhibit that whatsoever EVA is not explained by QR in both models 1and 2. So QR as a

traditional evaluation tool cannot be a predictor of worth creation for shareholders in TSE.

Researcher did not find any studies in line with analysis of present hypothesis but this study displayed that EVA and QR are uncorrelated.

Analysis of Hypothesis 9 and correlation co-efficient (Table 4.11) show that the relationship between EVA and P/E is significant and indirect (negative) in both models 1 and 2 (Correlation Co-efficient in models 1 and 2 = -0.292 and -0.229).

The results indicate that in model 1, whenever P/E during the year 2005 to 2009 is reduced or increased (P/E during the year 2005 to 2009 = 8.67, 11.48, 6.05, 5.39, and 7.84) as EVA inversely increased and decreased (EVA model 1 during the years 2005 to 2009=52109, -10826, -12789, 14329, and -77477).

Co-efficient of determination (Table 4.68) shows that relationship between EVA and P/E is weak in both models 1 and 2 (R^2 model 1= 0.085 and R^2 model 2 = 0.047). Therefore 8.5 % in model 1 and 4.7 % in model 2 of the variation in the EVA is explained by P/E and it proved that little percentage of P/E can explain EVA inversely in both models 1 and 2. EPS in both calculation K_e (cost of equity for WACC in model 1) and P/E have main role. But EPS is not main variable for calculating WACC in model 2. So co-efficient of determination in model 1 is almost better than Co-efficient of determination in model 2, and model 1 can predict better EVA by P/E.

The analysis result of hypothesis 9 is in line with the study by Johannes J. Prinsloo (2007).

Analysis of Hypothesis 10 and correlation co-efficient (Table 4.11) show that the relationship between EVA and EPS is significant and direct (positive) in both models 1 and 2 (Correlation Co-efficient in models 1 and 2 =0.311 and 0.293).

In model 1, EPS reduced during the year 2006 to 2007 (EPS during the year 2006 to 2007= 966.5 to 890.03) and during the year 2008 to 2009 (EPS during the year 2008 to 2009= 904.7 to 851.31) and during this period, EVA also decreased (in model 1) and had negative amount. Also EPS improved during the year 2007 to 2008 (EPS during the year 2007 to 2008= 890.03 to 904.7) and during this period, EVA also increased (in model 1) and had positive amount. But results for the year 2006 to 2007 for both variables were reverse.

Co-efficient of determination (Table 4.68) shows that relationship between EVA and EPS is almost weak in both models 1 and 2 (R^2 model 1= 0.097 & R^2 model 2 = 0.079) and 9.7 % in model 1 and 7.9 % in model 2 of the variation in the EVA is explained by EPS. Co-efficient of determination in both models 1 and 2 is equal and both models equally can predict EVA by EPS. Co-efficient of determination in model 1 is a little bigger than Co-efficient of determination model 2, because EPS in model 1 have main role for calculating growth and cost of equity (K_e). However relationship between EVA and EPS is weak but this indicates other important variables can intervene between two variables such as Invested Capital (IC) interest bearing liabilities, financial cost, etc.

The analysis result of this hypothesis is in line with the study by Prinsloo (2007), Irala (2007), Dimitrios & co (2005), Machuga et al. (2002), and De Villiers and Auret (1998).

Analysis of Hypothesis 11 and correlation co-efficient (Table 4.11) show that the relationship between EVA and DPS is significant and direct (positive) in both models 1 and 2 (Correlation Co-efficient in models 1 and 2 =0.337 and 0.337).

In model 1, DPS reduced during the year 2005 to 2006 (DPS during the year 2005to 2006= 705.83 to 465.79) and during 2008 to 2009 (DPS during the year 2008 to 2009= 629.74 to 626.5) and during this period, EVA also decreased (in model 1) and took negative amount. Also DPS improved during the year 2007 to 2008 (DPS during the year 2007 to 2008= 551.08 to 629.74) and during this period, EVA also increased (in model 1) and got positive amount. But results for the year 2006 to 2007 for both variables were reverse.

Co-efficient of determination (Table 4.68) shows that relationship between EVA and DPS is almost weak in both models 1 and 2 (R^2 model 1= 0.114 and R^2 model 2 = 0.105) and 11.4 % in model 1 and 10.5 % in model 2 of the variation in the EVA is explained by DPS. Co-efficient of determination in both models 1 and 2 is equal and both models equally can predict EVA by DPS. However DPS in model 1 takes main role for calculating growth and cost of equity (K_e) and if DPS in model 1 is bigger than EPS, growth will be negative and Regardless of changes in other variables, EVA maybe negative.

However researcher did not find any study is in line with the present study, but this study highlights that DPS better than EPS can predict EVA.

Analysis of Hypothesis 12 and correlation co-efficient (Table 4.11) show that the relationship between EVA and P is significant and direct (positive) in both models 1 and 2 (Correlation Co-efficient in models 1 and 2 = 0.201 and 0.233).

Share Price (P) reduced during the year 2005 to 2006 (P during the year 2005 to 2006= 6023 to 6006), and during the year 2006 to 2007 (P during the year 2006 to 2007= 6006 to 4744) and during this periods, EVA also decreased (in model 1) and had negative amount. Unlike during these years, Share Price (P) reduced during the year 2007 to 2008 (P during the year 2007 to 2008 = 4744 to 3766) but EVA improved during the year 2007 to 2008 and had positive value. Also Share Price (P) increased during the year 2008 to 2009 (P during the year 2008 to 2009=3766 to 4066) but EVA reduced during the year 2008 to 2009 and had negative amount. Share Price (P) in both model 1 and 2 has main role for calculating EVA. In model 1 Share Price (P) is utilized for calculating growth amount and K_e (cost of equity) and in model 2, share price (P) is used for calculating, beta (β), return on share, market return, and also K_e (cost of equity).

However P has strong role for calculating EVA in both model 1 and 2 (R^2 model 1= 0.04 & R^2 model 2 = 0.051), but findings of this study illustrated that relationship between EVA and P is very weak. Based on table 4.68, 4 % in model 1 and 5.1 % in model 2 of the variation in the EVA is explained by P and it proved that little percentage of P can explain EVA in both models 1 and 2. As well as, Co-efficient of determination in both models 1 and 2 is almost equal and both models 1 and 2 equally can predict EVA by P.

The analysis result of this hypothesis is in line with the study by Abate, Grant and Stewart III (2004), De Villiers and Auret (1998), and Johannes J. Prinsloo (2007) but it i differs with the study by Tero Telaranta (1997).

Analysis of Hypothesis 13 and correlation co-efficient (Table 4.11) show that the relationship between EVA and NOPAT is significant and direct (positive) in both models 1 and 2 (Correlation Co-efficient in models 1 and 2 = 0.752 and 0.832).

Co-efficient of determination (Table 4.68) shows that relationship between EVA and NOPAT is strong in both models 1 and 2 (R^2 model 1= 0.566 & R^2 model 2 = 0.689) and co-efficient of determination had best co-efficient between other variables.

Based on these results, 75.2 % in model 1 and 83.2 % in model 2 of the variation in the EVA is explained by NOPAT.

NOPAT is best independent variable of the study and very useful variable that can explain EVA in both model 1 and 2. Co-efficient of determination between EVA and NOPAT in model 2 is bigger than model 1 and therefore NOPAT can better explain EVA in model 2. NOPAT is one of the main three variables for calculating EVA. According to definition, EVA is Net Operating Profit After Taxes (NOPAT) less a capital charge. Thus NOPAT is important factor for amount of EVA and if amount of NOPAT is bigger than amount of cost of capital, this can be gained positive EVA. This proves direct (positive) relationship between EVA and NOPAT but because other factors such as cost of capital and their subset variables (invested capital, WACC, etc) intervene to determine EVA; amount of co-efficient of determination is not nearing 1.

The finding of study hypothesis 13 is in line with the study by Kyriazis and Anastassis (2007), Fernandez (2003) and Pablo Fernández (2002).

Analysis of hypothesis 14 utilized multiple regression setting EVA as dependent variable to be explained by a combination the full independent variables.

Co-efficient of determination (table 4.68) between EVA and all independent variables (IVs) in linear multiple regression illustrated that 80 % in model 1 and 98 % in model 2 of the variation in the EVA can be explained by IVs (Independent Variables). Based on this finding, in both models 1 and 2, EVA can be equally predicted by IVs (Independent Variables).

Variables that are correlated with EVA are: NOPAT, MVA, ROS, ROA, DPS, ROE, EPS, ROI, P/E, P, and DR. In this study, EVA showed a significant relationship with all independent variables except with CR and QR.

5.3 Research Suggestions

1. In this study relationship between selected variables calculated for a 5 years period of time. Therefore, it is suggested that future researchers will consider various

relations between EVA and financial ratios in the long-term, and furthermore, examine hypotheses during a long period of time.

2. Investigation of the significance and relations of some other variables such as Refined Economic Value Added (REVA), Adjusted Economic Value Added (AEVA), Cash Value Added (CVA), net cash flows, Return on Capital Employed (ROCE), Return on Net worth (RONW), and Tobin´s Q ratio with managers' compensations can also lead to achievements of a new and useful insights. Therefore, it is also suggested for future research in this direction.

3. This study has merely considered the relationship between of the Economic Value Added (EVA) as dependent variable, and the financial ratios and Market Value Added (MVA) as independent variables. Other empirical research, which could be useful and would lead to increasing our knowledge about the results of the performance evaluation, is investigating the relationship between Market Value Added (MVA), as the dependent variable, and financial ratios, as the independent variables.

4. Since EVA and MVA have useful information, the Tehran Stock Exchange (TSE) organization can classify different Tehran Stock Exchange (TSE) listed Companies according to their valuation models of economic performance.

5. The Tehran Stock Exchange (TSE) organization could force its members to provide the value added statement as supporting information and present other economic financial reports to users, including Economic Value Added (EVA) and Market Value Added (MVA).

6. Conduct research with the hypotheses of the present research for 24 listed industries of TSE separately.

7. It is suggested that future researchers investigate relations between EVA and internal macroeconomic variables such as GNP, inflation, and amount of import and export.

8. It is suggested that future researchers may investigate relations between EVA and conditions of universal economic situations.

9. Since the cost of capital rate is one of the important factors affecting the Economic Value Added (EVA) changes, it is suggested that Companies' managers, regard an

accurate measurement of the cost of each financial sources, and optimize a combination of them in an attempt to minimize the cost of capital and attaining the optimized capital structure.

5.3 Scope for further study

This study has a limited scope, that is only five years of listed Companies of TSE is taken into consideration. These five years had displayed a lot of variations with respect to beta, cost of equity (K_e), Invested Capital(IC), market return (r_m), Weighted Average Cost of Capital (WACC) and Share Price in various Companies and industries in TSE.

To overpower this limitation of the study, the years of consideration for the study has to be enlarged, so as to reduce variations with respect to the above mentioned variables and also study hypotheses consider the impact of Companies' size on value creation.

There is a need for time series study for understanding the relationship between Economic Value Added (EVA), Market Value Added (MVA), and financial ratios yearly and also there is a need for investigating the impact of study hypotheses based on financial ratios changes and MVA changes on EVA changes.

There is a need to find out relationship between value creation and Companies' structure and type of Companies. It is necessary that present study considered relations between EVA and Macro- Economic variables.

5.4 Conclusion

The main objective of this study was to calculate and evaluate EVA as a financial performance measure that can be used by listed Companies of TSE. Further objectives were to evaluate the financial performance of 180 listed Companies of TSE, to determine whether these listed Companies of TSE created value, and to compare EVA with traditional measures to see whether EVA is a better measure of wealth creation than other financial ratios and MVA.

The average of study periods (2005-2009) revealed that EVA in model 1 had negative amount but EVA with model 2 obtained positive amount. This results show that although listed Companies of TSE with EVA in model 1 couldn’t create worth for shareholders but according to the EVA in model 2 had successful making value for

investors and shareholders. Also the average of MVA in each three models 1, 2, and 3 had positive amount and therefore listed Companies of TSE created external value for shareholders and investors. The main difference between calculation of EVA in models 1 and 2 is in calculation of WACC with DDM and CAPM models and amount K_e in both models. DDM model is used to estimate the inherent value of a single investment asset but CAPM model is used to estimate the average market prices of the risk factors for a portfolio of stocks or other group of financial assets.

DDM application begins with a prediction of future cash flows generated by the investment asset. CAPM application begins with a sample of historical returns data and observations for each of the explanatory variables or risk factors for each of the individual stocks in a portfolio or individual financial assets in a group of assets for each time period. Based on the obtained results, the amount of K_e in DDM model is bigger than in CAPM model and this can increase the amount of cost of capital (IC × WACC). Therefore, whatever the amount of cost of capital increases, NOPAT cannot cover the amount cost of capital and more Companies will accept a negative value of EVA in model 1 (WACC with DDM model). Model 1 (WACC with DDM model) is associated to variables of DPS, P (share price of Company), and the amount of growth but Model 2 (WACC with CAPM model) assumes that there is only one factor (price) and it is associated to variables of share price of Company and market stock. Depending on the perception and expectation of shareholders and investors can use both models 1 and 2 for the amount of created worth of Companies. However model 1 has strict condition to model 2 but in inflationary conditions, governments may increase the amount of free risk rate and therefore the amount of K_e in model 2 increases and will be close to K_e model 2.

The study results indicate that maximum positive EVA in model 1 and minimum negative EVA (model 1) have been created in the year 2008 and 2009. EVA (model 1) in the year 2005 and 2008 had positive amount for shareholders and TSE had succeeded in making value creation and had useful performance. As well as EVA (model 1) in the years 2006, 2007, and 2009 had negative amount for shareholders and TSE obtained unsuitable performance. The study showed that 124 Companies had common value (negative or positive) in both models 1 and 2 but 56 Companies did not have common value. EVA model 1 was stronger than EVA model 2 and basic difference in two models was in calculation of cost of equity. The investigation

relationship between EVA and K_e demonstrated that the co-efficient of determination between of K_e and EVA in DDM model 1 was bigger than K_e in model CAPM. Thus K_e in DDM model better than K_e in CAPM model predict EVA.

In model 1, maximum positive MVA and minimum negative MVA have been created in the years 2005 and 2009; and the average of MVA in model 1 for three years (2005, 2006, and 2008) have positive amount and for two years (2007 and 2009) had negative amount for shareholders and investors.

In model 3, maximum positive MVA and minimum negative MVA have been created in the years 2005 and 2008; and the average of MVA in model 3 for three years (2005, 2006, and 2007) had positive amount and for two years (2008 and 2009) took negative amount for shareholders and investors.

MVA model 3 is relied number and share price of Company and based on the obtained results, this model has stronger condition than model 1 and 2.

The use of EVA and other shareholder value measures can also improve general capital investment decisions by integrating environmental factors that affect the long-term interests of the corporation into the managerial decision-making process.

A comparison achieved using these measures shows that EVA and MVA give the clearest results, while the traditional measures were misleading for listed Companies of TSE. This study illustrated that EVA is unique and distinct from some traditional accounting ratios such as CR and QR; and some traditional accounting ratios are weak predictor of future EVA and worth creation for shareholders such as P/E, P, DR, and ROI. As well as some traditional accounting ratios are almost medium predictor for EVA and worth creation such as ROA, ROE, ROS, EPS, and DPS; but NOPAT and MVA have highest correlation with EVA and are strong predictor for future EVA and worth creation for shareholders in TSE. 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 investors.

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.

There are critics on historical accounting performance measures such as Return on Assets (ROA), Return on Equity (ROE), Return on Sales (ROS), or Earning Per Share (EPS) are deficient because they are one-dimensional and thus inappropriate to fully assessing firms' strategic accounting, firms' strategic outcomes and performance (Dalton et al, 1982; Venktraman and Ramanujam, 1986). They also display that they reflect only past performance and not future performance. Variables that are correlated with EVA respectively R^2 (R- Square) are including: NOPAT, MVA, ROS, ROA, DPS, ROE, EPS, ROI, P/E, and P. If the Company can improve it's EVA by increasing its NOPAT which could be increased by increase in sales and reducing the Cost of Capital. Cost of Capital can be decreased by retreat of unproductive investment.

It has been observed in the above explanations that EVA is different from other measures of performance and illustrated that EVA is best measurement tool for measuring the financial performance of the Company because in present study, most traditional accounting tools could not predict amount of worth and value creation.

EVA provides appropriate incentives for capital allocation, in contrast to the Return on Capital Employed (ROCE), which may lead to under-capitalization, and earnings, which can lead to over-capitalization.

EVA is suitable for use as a measure of annual performance, related to executive pay, unlike some cash flow measures. Positive EVA implies that the creation of shareholder value and can be used to reward managers accordingly. Main purpose of any firm is to increase the value of firm and EVA measures value creation for shareholders and investors and integrates the impacts of profitability and growth into the same measure. EVA as a strategy formulation and financial performance management tool helps corporation to make greater than its' cost of capital.