ACCOUNTING RESTATEMENT AND INFORMATION RISK: EVIDENCE FROM IRAN

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ABSTRACT

Restatement of previous period’s financial statements that corrects the reported earnings in the previous period, made financial reporting efficiency unexpected in the future. In fact, the restated financial statements are not reliable and are in low quality. Thus, restatements decrease the level of investors' confidence about the validity and competence of management and reduce the quality of reported earnings. In this study, the information risk of restatement of financial statements has been examined. In period of 2002-2010, we use 115 companies that are listed in Tehran Stock Exchange. The results shows that restatement of the financial statements increase the level of innate and discretionary risk and we also find an increase, of smaller magnitude, in the pricing of discretionary information risk for non-restatement firms in the same industries as the restatement firms, consistent with an information transfer effect.

Key words: Restatement, Information risk, Cost of capital

1) INTRODUCTION

Users of financial statements need useful information about the companies. According to theoretical concepts of Iran's financial reporting, Objective of financial statements is providing classified and summary
information about financial position and performance and business unit financial flexibility that are useful for many users of financial statements in making economic decisions. The main qualitative characteristics associated with the content are "relevance" and "reliable" and the main qualitative characteristics associated with the providing information are "comparable" and "understandability". The information that does not have these characteristics is not useful. Qualitative characteristics of comparability and understandability increase the usefulness of information. So, uniform accounting methods and appropriate disclosure of information is required (Iranian Accounting Standards Committee, 2009).

Therefore, if there are mistakes or changes in the current period’s financial statements relative to previous financial period, the restatement of financial statements is common tools in order to stabilization policy and appropriate information disclosure. In fact, the restated financial statements are not reliable and are in low quality. So, restatement of financial statements, lead to altering the investors' expectations about future cash flows and expected rate of return (Xia, 2006).

In recent years, some of restatement financial statements by the public companies has increased considerably. Increase of restatement, offer that previous period financial statements issued by management that approved by users for making decisions has been improperly offered and is unreliable. Restatement of financial statements, decrease level of investor confidence for making management decision, and this reduced trust may influence the cost of capital, stock price and accruals.

In this study, discretionary and innate accruals are used as a measure of information risks. In the operation environment of a particular company, there is innate accruals that management are not able to change and manipulate them (Kravet and Shevlin, 2009). Discretionary accruals are related to the principles and procedures that can be changed by management decisions. It means that it influenced by management selected procedures and it impacts quality of financial reporting, information risk and cost of capital. Investors are trying to get estimation of the expected returns from various sources to provide required information. Accounting profit is also one of the important data. Expected return is affected by two factors: first, degree of confidential information and second is accuracy of public and confidential information. On the other hand, the value of the securities for investors based on their assessment of future cash flows. Thus, the best measure that covers information risk of the cash flows is related to the accrual component of earnings because of:

A) Much of the information about cash flows, are funded by dividends; such as cash flows is equal to earnings minus accruals. In general, the accrual component of income relative to cash component will be determined with greater uncertainty, because the accruals are created by judgments, estimates and allocations, although the cash component of earnings is more objective (Francis et al, 2005).

B) According to the results of previous studies, accruals quality is better than other quality characteristics of earning to determine the information risk associated with the cash flow. Therefore, in this study association between restatement of the financial statements and the related information risk are investigated.
2) LITERATURE REVIEW

Kravet and Shevlin (2009) evaluate the relationship between restatement and pricing information risk for 299 companies during the years 1997 to 2001 by using the three-factor Fama and French (1993) in three-year period before and after the restatement of financial statements and showed that after providing this information increases discretionary risk and therefore the cost of capital. Restatement by the auditor's opinion and SEC inducement increased the company's stock discretionary risk. Restatement by core account of the company also inducement increased the company's discretionary risk. Easily and O'hara (2004) evaluate the role of information in influencing on capital costs. They showed difference between the private and public information in the influence on capital cost, holders that their private information will demand a higher yields rate and this higher yields can be achieved because informed investors can yourself portfolios replaced with the new data are better than non-informed investors. They also showed that in the equilibrium state, will affect asset prices by quality and quantity of information. Palmros et al (2004) examined restatement of financial statement for 403 companies during 1995 to 1999 and found negative market response to two-day course restatement announcement start to increase revenue and reduce restatement too. Negative response to the restatement resulted from an increase in income leads to an increase in the assessment information risk. Using a longer returns window, Richardson and Tuna (2002) report negative returns over the period 120 days before and after restatement announcement for a sample of 225 restatements during 1971 through 2000. We argue that negative returns surrounding restatement announcements are partially related to an increase in the pricing of information risk. Their findings indicate the effects of restatements can be lasting, or they are correlated with additional negative news that follows restatements. Lambert et al. (2007) present a model in which the average precision of information risk affects firms’ cost of capital in the context of the one-factor capital asset pricing model. Nichols (2006) also argues that the IR (Information Risk) factor captures fundamental risk, not information risk, although he does not provide a theoretical explanation for the type of fundamental risk that is being captured by the IR factor or why the market, size, and book to market factors would not capture fundamental risk. Nichols’s (2006) conclude that the IR factor captures fundamental risk arises mostly because a large part of the explanatory power of the IR factor derives from the innate portion of the IR factor. Ogneva (2008) argues that the Core et al. (2008) pricing tests are misspecified because of a correlated omitted variable—future cash flow shocks. When she controls for these shocks, the IR factor loading is associated with future returns in the second stage regressions.

Liu and Wysocki (2007) examine the association between several proxies for information quality (including the AQ (Accrual Quality) metric) and proxies for the cost of capital (including an implied cost of equity capital measure). The AQ metric is generally significant when included without controls for underlying firm characteristics, including the five variables listed in Dechow and Dichev (2002) and used by Francis et al. (2005) to partition the AQ metric into its innate and discretionary components. When these controls are included the AQ metric loses its significance consistent with the results in Francis et al. (2005) that innate AQ is more strongly associated with the cost of capital than the other, more discretionary component. Palmrose et al. (2004) and Anderson and Yohn (2002) find that restatements related to revenue
recognition are associated with more negative market response than other restatements, but Hribar and Jenkins (2004) do not find significant evidence that core account restatements are associated with a greater implied cost of capital effect. Gleason et al. (2008) find an information transfer effect induced by accounting restatement resulting in share price declines of non-restatement firms in the same industry as the restatement firms. Using the GAO sample of restatements, they find a 0.5% average share price decline over a three-day (day -1 to +1) window for non-restatement firms in the same industry as restatement firms. They also find that the share price declines are more pronounced among firms with low accounting quality, as measured by industry-adjusted accruals. However, Gleason et al. (2008) do not explore whether the information transfer they find is due to changes in expectation about future cash flows or the discount rate.

3) RESEARCH HYPOTHESES

The main purpose of this study is to investigate the relationship between the restatement financial statements of listed companies is information risk; therefore, the following hypotheses have been developed to achieve this goal:

\[ H_1: \text{Ceteris paribus, restatement announcements are associated with an increase in the factor loading on the discretionary information risk factor.} \]

\[ H_2: \text{Ceteris paribus, restatement announcements are associated with an increase in the factor loadings on the discretionary and innate information risk factors for non restatement firms in the industries of the restatement firms.} \]

4) RESEARCH METHODOLOGY

In order to testing the research hypothesis, we use multivariate regression and "pooled data" approach in the period of 2002-2010. Sampling is based on some condition: firms which at least must deal once in three months to the end of year, firms must deal without alternation in financial year, firms should not coordinate with financial intermediate company, the number of firms in same industry should not less than 4. Based on these conditions, final sample conclude 115 firms. The necessary data to test hypothesis is collected by Iranian software Rahavarde novin and report data published by the Tehran Stock Exchange. In order to testing the first hypothesis of this research, we use the following regression:

\[
\text{CAR}_i = \alpha + \beta_1 \Delta \text{ROA}_{i,9} + \beta_2 \Delta \text{ROA}_{3,0} + \beta_3 \Delta \text{MARKET}_\text{RISK}_i + \beta_4 \Delta \text{SMB}_\text{RISK}_i + \beta_5 \Delta \text{HML}_\text{RISK}_i + \beta_6 \Delta \text{DISCRETIONARY INFO}_\text{RISK}_i + \beta_7 \Delta \text{INNATE INFO}_\text{RISK}_i + \epsilon_i
\]

Where \( \text{CAR}_i \) is the cumulative abnormal return relative to the value-weighted market portfolio from before and after surrounding the restatement announcement? \( \Delta \text{ROA}_{i,0} \) is the change in return on assets
for year 0 where ROA is defined as operating income before depreciation divided by total assets.

DROA_{3i,0} is change in return on assets over the three years after the restatement announcement. DMARKET\_RISK_{i}, DSMB_{i} and DHML_{i} are the change in market, size, and book-to-market risk premiums, respectively, of firm i after the restatement announcement. \( \Delta HML\_RISK \) is the value stock return (high \( BTM ) \) minus the growth stock return (low \( BTM \)). \( \Delta SMB\_RISK \) is stock return of small firms minus the return on large firms stock. \( BTM \) is equity to market value of shares. \( \Delta MARKET\_RISK \) is the market return minus the risk-free return.

For evaluating the quality of financial reporting (accruals quality) we use the Jones (1991) model as follow:

\[
TCA_{i,t} = \theta_{0,t} + \theta_{1,t}CFO_{i,t-1} + \theta_{2,t}CFO_{i,t} + \theta_{3,t}CFO_{i,t+1} + \theta_{4,t}REV_{i,t} + \theta_{5,t}PPE_{i,t} + \varepsilon_{i,t}
\]

where \( TCA_{i,t} \) is total current accruals of firm i in year t; \( CFO_{i,t} \) is cash flow from operations of firm i in year t; \( \Delta REV_{i,t} \) is change in revenue of firm i in year t; and \( PPE_{i,t} \) is the net tangible fixed assets of firm i in year t. \( \varepsilon_{i,t} \) is residual standard deviation for 10 years and used as an indicator of accruals quality (AQ).

To remove the effect of firm size, all variables are standardized by average firm total assets during the years t and t+1.

In the second stage, we use Dichev and Dechow (2002) model to estimate the innate (non-discretionary) accruals quality. In this model the effects of five innate factors on accruals quality is considered as follow:

\[
AQ = \Lambda_{0} + \Lambda_{1}Size_{i,t} + \Lambda_{2}\sigma(CFO)_{i,t} + \Lambda_{3}\sigma(Sale)_{i,t} + \Lambda_{4}OpCycle_{i,t} + \Lambda_{5}NegEarn_{i,t} + \mu_{i,t}
\]

where \( Size_{i,t} \) is firm size calculated by the log of total market value of firm assets; \( \sigma (CFO)_{i,t} \) is the standard deviation of firm i’s cash flow from operations; \( \sigma (Sale)_{i,t} \) is the standard deviation of firm i’s sales; \( OpCycle_{i,t} \) is the log of firm i’s operating cycle, measured as the sum of days accounts receivable and days inventory; and \( NegEarn_{i,t} \) is frequency identification losses (the number of years that the company has reported losses). All coefficients model except the \( \mu \) are used to estimate the innate component (non-discretionary) accruals quality and \( \mu_{i,t} = DiscAQ \).

5) RESULTS

In first hypothesis we investigate the associate between restatements announcements and increase in the factor loading on the discretionary information risk factor. Results of testing this hypothesis are shown in table 1.
TABLE 1: THE FINAL ESTIMATED REGRESSION MODEL COMBINED DATA

<table>
<thead>
<tr>
<th>Elements</th>
<th>Coefficient (P)</th>
<th>Standard Error</th>
<th>T statistic</th>
<th>significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.014609</td>
<td>0.004900</td>
<td>-2.981765</td>
<td>0.0029</td>
</tr>
<tr>
<td>_ROA</td>
<td>-0.204180</td>
<td>0.009858</td>
<td>-20.71219</td>
<td>0.0000</td>
</tr>
<tr>
<td>_ROA3</td>
<td>-3.102898</td>
<td>0.014185</td>
<td>-218.7480</td>
<td>0.0000</td>
</tr>
<tr>
<td>MARKET_RISK</td>
<td>-0.146039</td>
<td>9.39E-05</td>
<td>-1555.511</td>
<td>0.0000</td>
</tr>
<tr>
<td>SMB_RISK</td>
<td>0.030280</td>
<td>0.000112</td>
<td>270.6156</td>
<td>0.0000</td>
</tr>
<tr>
<td>HML_RISK</td>
<td>0.017585</td>
<td>0.000345</td>
<td>50.96228</td>
<td>0.0000</td>
</tr>
<tr>
<td>DISCIR</td>
<td>1.171182</td>
<td>0.013950</td>
<td>83.95397</td>
<td>0.0000</td>
</tr>
<tr>
<td>INNATE_IR</td>
<td>0.686030</td>
<td>0.071143</td>
<td>9.642904</td>
<td>0.0000</td>
</tr>
<tr>
<td>AR(1)</td>
<td>0.575210</td>
<td>0.002921</td>
<td>196.9237</td>
<td>0.0000</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.953344</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.953339</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>216749.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
<td>2.357624</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in table 1, the amount of $R^2$ is approximately 95% that is 95 percent of the variability is explained by the independent variables. In addition, the number of Durbin-Watson model is equal to 2.357624 indicates the absence of autocorrelation error in the model. F-statistics are also considering that the possibility to (0/000) is to be mentioned model 99 percent confidence is correct and the whole regression is significant. Coefficients and t-statistics related to all the variables are significant at a confidence level of 99%. Given the significant and positive discretionary risk is confirmed first hypothesis.

In second hypothesis we investigate the associate between restatements announcements and increase in the factor loadings on the discretionary and innate information risk factors for nonrestatement firms in the industries of the restatement firms. Results of testing this hypothesis are shown in table 2.
### TABLE 2: THE FINAL ESTIMATED REGRESSION MODEL COMBINED DATA

<table>
<thead>
<tr>
<th>Elements</th>
<th>Coefficient ($\beta$)</th>
<th>Standard Error</th>
<th>T Statistic</th>
<th>Significant</th>
<th>Coefficient ($\beta$)</th>
<th>Standard Error</th>
<th>T Statistic</th>
<th>Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.125781</td>
<td>0.005321</td>
<td>23.63781</td>
<td>0.00</td>
<td>0.148996</td>
<td>0.01033</td>
<td>14.42314</td>
<td>0.00</td>
</tr>
<tr>
<td>DT</td>
<td>0.188553</td>
<td>0.00697</td>
<td>27.05083</td>
<td>0.00</td>
<td>-0.125276</td>
<td>0.01799</td>
<td>-</td>
<td>0.00</td>
</tr>
<tr>
<td>RM_RF</td>
<td>0.003838</td>
<td>0.001521</td>
<td>2.523438</td>
<td>0.0116</td>
<td>-0.001616</td>
<td>0.000282</td>
<td>-</td>
<td>0.00</td>
</tr>
<tr>
<td>DT*RM_RF</td>
<td>0.02224</td>
<td>0.003252</td>
<td>6.839017</td>
<td>0.00</td>
<td>-0.017148</td>
<td>0.007435</td>
<td>-</td>
<td>0.0211</td>
</tr>
<tr>
<td>SMB</td>
<td>0.484711</td>
<td>2.129624</td>
<td>0.227604</td>
<td>0.82</td>
<td>-0.023061</td>
<td>0.102484</td>
<td>-</td>
<td>0.822</td>
</tr>
<tr>
<td>DT*SMB</td>
<td>0.528141</td>
<td>2.181728</td>
<td>0.242075</td>
<td>0.8087</td>
<td>-0.588628</td>
<td>0.281372</td>
<td>-</td>
<td>0.0365</td>
</tr>
<tr>
<td>HML</td>
<td>0.33076</td>
<td>1.419742</td>
<td>0.232972</td>
<td>0.8158</td>
<td>-0.002926</td>
<td>0.068345</td>
<td>-</td>
<td>0.9659</td>
</tr>
<tr>
<td>DT*HML</td>
<td>0.348132</td>
<td>1.454475</td>
<td>0.239353</td>
<td>0.8108</td>
<td>-0.364523</td>
<td>0.187043</td>
<td>-</td>
<td>0.0514</td>
</tr>
<tr>
<td>DISCIR</td>
<td>0.257552</td>
<td>0.024833</td>
<td>10.37142</td>
<td>0.00</td>
<td>0.17005</td>
<td>0.074047</td>
<td>2.296674</td>
<td>0.0217</td>
</tr>
<tr>
<td>DT*DISCIR</td>
<td>0.547291</td>
<td>0.041754</td>
<td>13.10766</td>
<td>0.00</td>
<td>0.672535</td>
<td>0.140956</td>
<td>4.771227</td>
<td>0.00</td>
</tr>
<tr>
<td>INNATEIR</td>
<td>1.881466</td>
<td>0.154722</td>
<td>12.1603</td>
<td>0.00</td>
<td>4.642939</td>
<td>0.325397</td>
<td>14.26853</td>
<td>0.00</td>
</tr>
<tr>
<td>DT*INNATEIR</td>
<td>3.127525</td>
<td>0.176684</td>
<td>17.70124</td>
<td>0.00</td>
<td>5.876315</td>
<td>0.412816</td>
<td>14.23471</td>
<td>0.00</td>
</tr>
<tr>
<td>RI_RF(-1)</td>
<td>0.266774</td>
<td>0.004011</td>
<td>66.51567</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.111118</td>
<td>0.090447</td>
<td></td>
<td></td>
<td>0.110933</td>
<td>0.088357</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R- squared</td>
<td>0.110933</td>
<td>0.088357</td>
<td></td>
<td></td>
<td>0.110933</td>
<td>0.088357</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>602.5079</td>
<td>43.28391</td>
<td></td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td></td>
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<tr>
<td>Prob(F-statistic)</td>
<td>0.000</td>
<td>0.00</td>
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<td></td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
<td>2.327788</td>
<td>1.5494</td>
<td></td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in table 2, Coefficient and t-statistic of the variables DT*DISCIR and DT*INNATEIR significant at 95% and implies that there is a negative and positive relationship between stock returns with independent variables. The research coefficient of determination shows that nearly 11% and 9% of changes in
dependent variable can be explained by the independent variables and significant that reflects the strength of the model in explaining the dependent variable. F-statistics are also considering that the possibility to (0/000) is to be mentioned model 99 percent confidence is correct and the whole regression is significant. Coefficients and t-statistics related to all the variables are significant at a 99% confidence level. Given the significant, positive relationship between DT*DISCIR and DT*INNATEIR variables with dependent variable is confirmed second hypothesis.

6) CONCLUSION

In general, it is recommended that investors, creditors, and other users of financial statements analysis restatement announcement carefully and interprets the possible causes of market negative reaction to the restatement. Positive reaction to the announcement restatement components of risk information confirm that cumulative average abnormal returns reduced after the announcement of the restatement. The relationship between information risk components and restatement announcement is needed to be examined. According to this discussion, the results of data analysis are discussed in the form of research hypotheses.

By testing the first hypothesis we result that there is positive and significant relationship between discretionary risk and restatement of financial statements of the listed companies. These findings are consistent with the research theoretical and prediction of the first research hypothesis.

By testing the second hypothesis we result that there is positive and significant relationship between innate risk and restatement of financial statements of the listed companies, this indicates that increase in innate risk of these firms induce slightly increase in innate risk of same industry. In other words, there are transmission effect of information in the same industry. These findings are consistent with the research theoretical and prediction of the second research hypothesis.

According to confirming both hypotheses of this research, we can conclude that restatement of financial statements of the listed companies in Tehran Stock Exchange during 2002-2010 affect information risk.

7) SUGGESTIONS

Restatement announcement may have financial consequences. Therefore, we recommended to auditors and users of financial statements to consider the effective factors in restatement and due to high spread of restatement, it is better that they review financial statements more carefully. In particular, they must consider the quality of financial reporting. In firms that they reported figures under the title of annual adjustments every year, it is better to refer to the related notes and report of the independent auditor in order to be aware of reasons of annual adjustments.

It is suggested to researchers that pay attention to relationship between restatement of financial statements and non-systematic risk in corporate and other firms.
8) REFERENCES