Examining the Impact of Financing Methods and Working Capital Management on value of the listed Companies in Tehran Stock Exchange

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ABSTRACT

The current study is to examine the relation between financing methods and working capitals management on firm values of the listed companies in Tehran stock exchange. All listed companies in Tehran stock exchange were selected as statistical population during 2008 to 2012. Debt financing, issue financing, retained earnings financing, average collection period, inventory turnover in days, cash conversion cycle, and firm value are regarded as independent and dependent variables, respectively. To examine the research’s hypotheses, Eviews7 software is applied. Ordinary Least Squares (OLS) is used to approve/reject the hypotheses, and heteroscedasticity pre-tests and fixed effects is applied to perform these tests. The results show that there is a significant relation between the variables of the study and all hypotheses are approved.

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INTRODUCTION

Firms use various financial resources to implement their profitable projects and achieve to maximum yield in order to increase their shareholders’ capitals. The firm capability in determining an organization’s internal and external resources to providing capital and suitable financial plans is the main development factor for each company. This financing resources and applying them is a factor may influence on operational performance of firms. On the other hand, financing is an ordinary activity in big firms. Firm management has various resources and different financing methods to providing required cash for capital cost and firm performance. Financing can be implemented through share or debt securities issuance which their difference is evident [2].

Working capital management is one of the most essential fields in financial management and organization’s management, because it directly impact on liquidity and profitability of firms. There is probability of bankruptcy for firms that are exposed to unsuitable working capital management, even positive profitability. Working capital management deals with current assets and debts. Current assets of a firm make significant part of total assets. Excessive levels of current assets may leads to less investment yield than normal index. However, firms with fewer current assets would suffer from deficiencies and problem during normal operations.

Caballero et al., [4] investigates the relation between working capital management, corporate governance and firm value. Their findings indicated that there is a positive significant association between working capital management and performance, as working capital management gets increased in one unit; the firm performance would be increased too. Alemida et al [1] examined the relation between financing, working capital management and value of Brazilian firms. The results demonstrated that there is a weak significant relationship among working capital management and firm value, and significant relation between financing and firm value. Ki Schinic & Laplelante et al, (2013) examined the relation between working capital management and shareholders’ value. The results showed that there is a significant relation between working capital management and shareholders’ value and it increases shareholders’ value.

In this article, generally, we try to examine the impact of the association between financing methods and working capital management on value of the listed companies in Tehran stock exchange. It seems that the answer to this question can be very effective for executive and non-executive of companies, potential, actual and institutional investors, independent accountant as well as other stakeholders.

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Research hypotheses:
- There is a significant relation between debt financing and value of the listed companies in Tehran stock exchange.
- There is a significant relation between issue financing and value of the listed companies in Tehran stock exchange.
- There is a significant relation between retained earnings financing and value of the listed companies in Tehran stock exchange.
- There is a significant relation between average collection period and value of the listed companies in Tehran stock exchange.
- There is a significant relation between inventory turnover in days and value of the listed companies in Tehran stock exchange.
- There is a significant relation between average payment period and value of the listed companies in Tehran stock exchange.
- There is a significant relation between inventory turnover in days and value of the listed companies in Tehran stock exchange.
- There is a significant relation between cash conversion cycle and value of the listed companies in Tehran stock exchange.

Research population and statistical sample:
The population of the research is composed of all listed companies in Tehran stock exchange which are accepted during 2008 to 2012. The firms will be accepted which have the following condition:
1) Their financial year ends in 19/3/…
2) They should have been listed during 2008 to 2012.
3) Their financial year should not have been changed during 2008 to 2012.
4) Their required data should be available.
There have been selected 83 firms based on systematic ommissive method.

Operational definition of the research’s variables:
Average Collection Period (ACP):
It is calculated from dividing accounts receivable into sale multiplied by 365 as independent variable.

Inventory Turnover In Days (ITID):
It is calculated from dividing inventories into cost price of sold product multiplied to 365 as the independent variable.

Average Payment Period (APP):
It is calculated from dividing accounts receivable into cost price of sold product multiplied to 365 as the independent variable.

Cash Conversion Cycle (CCC):
It is calculated from debt payment period minus total collection period and inventories turnover in days as the independent variable (collection period + inventories turnover in days – debt payment period).

Debt Financing (FDEBT):
\[ D_t = d_t - d_{t-1} \]
Where, Dt is debt financing in period t and dt indicates debt financing in period t and dt-1 debt financing in period t-1.

Stock Issue Financing (FSTOCK):
\[ S = (C_1 - C_0) - A \]
Where, S is stock issuance financing, C0 is capital amount before increased capital, C1 is capital amount after increased capital and A indicates capital increasing percent obtained from shareholders’ cash resources.

Retained Earnings Financing (FEARNINGS):
\[ E = (C_1 - C_0) - B \]
Where, E is retained earnings financing, C0 is capital amount before increased capital, C1 is capital amount after increased capital and A demonstrating capital increasing percent obtained from shareholders’ cash resources.

**Firm Value:**

We use from the equation by “Bay” et al. (2004) about value measuring:

\[ \text{Tobin’s } Q = \frac{\text{MVCS} + \text{BVPS} + \text{BVLTD} + \text{BVINV} + \text{BVCL-BVCA}}{\text{BVT}} \]

Where, MVCS is equal with market value of common stock, BVPS is book value of preferred stock, BVLTD is book value of long-term financial facilities, BVINV is book value of inventories, BVCA is book value of current assets and BVT is book value of total assets.

**Research’s control variables:**

- **LASSETS:** Logarithm of total assets.
- **CSRATIO:** Book value of equity to sale ratio.
- **ISRATIO:** Operating profit to sale ratio.
- **LEVERAGE:** Book value of total loans to total assets.

**Research’s regression model:**

A desirable model is one that reflects all aspects of main and major phenomenon, although it is not comprehensive and complex as real world, it indicates main relations of components and its effects in order to provide a simple and suitable means for an analyst. We use the below model in this research:

\[
\text{FIRM VALUE}_{it} = \alpha_0 + \alpha_1 \text{FDEBT}_{it} + \alpha_2 \text{FSTOCK}_{it} + \alpha_3 \text{FEARNINGS}_{it} + \alpha_4 \text{ACP}_{it} + \alpha_5 \text{ITID}_{it} + \alpha_6 \text{APP}_{it} + \alpha_7 \text{CCC}_{it} + \alpha_8 \text{LÂSSETS}_{it} + \alpha_9 \text{SRATIO}_{it} + \alpha_{10} \text{LEVERAGE}_{it} + \epsilon_{it}
\]

**Data analysis method:**

In this research, panel data are used to test the hypotheses. In this method, time series (studied years) and sectional (studied firms) data are combined together. Panel data are used for increasing observation number, enhancing freedom degree, decreasing heteroskedasticity and studying changes dynamics. To estimate efficiency of a regression model using panel data, one of the models of common effects, fixed effects and random effects are selected by suitable tests. F-liner test is used for selecting between common effects and fixed effects model. If fixed effects model is selected, then Hausman test is applied to select between fixed effects and random effects models. Also, error term autocorrelation model, heteroskedasticity and data normality will have been examined. To describe the description power of descriptive variables, Adjusted R2 is used and Fisher F-statistics is used to examine the efficiency of the model. As well, EXCEL and EVIEWS 7 software are applied to conduct statistical analyses.

**Results:**

**Research first hypothesis:**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Min.</th>
<th>Max.</th>
<th>Average</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm value</td>
<td>0.251</td>
<td>4.328</td>
<td>1.996</td>
<td>0.276</td>
</tr>
<tr>
<td>Debt financing</td>
<td>10542</td>
<td>625339</td>
<td>2005417</td>
<td>154236</td>
</tr>
<tr>
<td>Stock issue financing</td>
<td>426372</td>
<td>5510247</td>
<td>2634021</td>
<td>106314</td>
</tr>
<tr>
<td>Retained earnings financing</td>
<td>26541</td>
<td>922635</td>
<td>418627</td>
<td>102135</td>
</tr>
<tr>
<td>Average collection period</td>
<td>5</td>
<td>107</td>
<td>49.6</td>
<td>0.227</td>
</tr>
<tr>
<td>Average turnover in days</td>
<td>86</td>
<td></td>
<td>42.7</td>
<td>0.406</td>
</tr>
<tr>
<td>Average debt payment period</td>
<td>7</td>
<td>99</td>
<td>53.2</td>
<td>0.581</td>
</tr>
<tr>
<td>Cash conversion cycle</td>
<td>9</td>
<td>120</td>
<td>76.3</td>
<td>0.421</td>
</tr>
<tr>
<td>Firm size</td>
<td>11415</td>
<td>39623</td>
<td>21547</td>
<td>4269</td>
</tr>
<tr>
<td>Book value of equity to sale ratio</td>
<td>0.102</td>
<td>4.263</td>
<td>1.745</td>
<td>0.448</td>
</tr>
<tr>
<td>Operating profit to sale</td>
<td>0.073</td>
<td>0.586</td>
<td>0.196</td>
<td>0.072</td>
</tr>
<tr>
<td>Financial leverage</td>
<td>0.082</td>
<td>0.526</td>
<td>0.576</td>
<td>0.326</td>
</tr>
</tbody>
</table>

**Determination of model estimation method- Significance test of fixed effects method:**

**F-statistics test:**

<table>
<thead>
<tr>
<th>Table 2: The results of F-statistics test.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>Cross-section F</td>
</tr>
<tr>
<td>Cross-section Chi-square</td>
</tr>
</tbody>
</table>

* 5% error level
Hausman test:

<table>
<thead>
<tr>
<th>Description</th>
<th>Statistics value</th>
<th>Freedom degree</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section F</td>
<td>7.815229</td>
<td>13</td>
<td>* 0.002</td>
</tr>
</tbody>
</table>

* 5% error level

According to the table 2 and 3, the results of two conducted tests (F & Hausman) is less than 5% in both tests, thus fixed effects method should be used in related regression model.

Research’s hypotheses tests:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Impact coefficient</th>
<th>Estimation deviation</th>
<th>t-statistics</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed</td>
<td>0.371</td>
<td>0.614</td>
<td>2.163</td>
<td>* 0.007</td>
</tr>
<tr>
<td>Debt financing</td>
<td>0.109</td>
<td>0.558</td>
<td>2.516</td>
<td>* 0.000</td>
</tr>
<tr>
<td>Stock issuance financing</td>
<td>0.286</td>
<td>0.216</td>
<td>2.334</td>
<td>* 0.000</td>
</tr>
<tr>
<td>Retained earnings financing</td>
<td>0.519</td>
<td>0.419</td>
<td>1.962</td>
<td>* 0.016</td>
</tr>
<tr>
<td>Average collection period</td>
<td>-0.267</td>
<td>0.705</td>
<td>-2.278</td>
<td>* 0.004</td>
</tr>
<tr>
<td>Average turnover in days</td>
<td>-0.167</td>
<td>0.646</td>
<td>-2.613</td>
<td>* 0.000</td>
</tr>
<tr>
<td>Average debt payment period</td>
<td>-0.418</td>
<td>0.221</td>
<td>-1.862</td>
<td>* 0.026</td>
</tr>
<tr>
<td>Cash conversion cycle</td>
<td>-0.331</td>
<td>0.185</td>
<td>-2.149</td>
<td>* 0.006</td>
</tr>
<tr>
<td>Firm size</td>
<td>0.607</td>
<td>0.349</td>
<td>1.334</td>
<td>0.075</td>
</tr>
<tr>
<td>Book value of equity to sale ratio</td>
<td>0.234</td>
<td>0.416</td>
<td>1.845</td>
<td>* 0.028</td>
</tr>
<tr>
<td>Operating profit to sale</td>
<td>0.397</td>
<td>0.278</td>
<td>1.096</td>
<td>0.081</td>
</tr>
<tr>
<td>Financial leverage</td>
<td>-0.452</td>
<td>0.361</td>
<td>-2.507</td>
<td>* 0.000</td>
</tr>
</tbody>
</table>

* 5% error level

Table 5: Explanation and significance ability of whole model.

<table>
<thead>
<tr>
<th>R</th>
<th>Coefficient of determination</th>
<th>Adjusted coefficient of determination</th>
<th>DW</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.437</td>
<td>0.426</td>
<td>1.922</td>
<td>42.627</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

** 1% error level

Regarding the table 4, since Durbin-Watson statistic test value is determined among 1.5 to 2.5, lack of correlation between errors is not rejected and regression can be used. Due to F value test is significant (42.627) in error level less than 0.01, it can be concluded that panel research regression model which composed of independent, control and dependent variables is a suitable model and independent and control changes can describe firm value changes. The adjusted coefficient of determination is 0.318; indicating 42.6% of all changes of dependent variable are depended on independent and control variables of this model. The final model of the research can be written as:

\[
FIRM VALUE_{it} = 0.371 + 0.109 \times DEBT_{it} + 0.286 \times STOCK_{it} + 0.519 \times EARNINGS_{it} - 0.267 \times ACP_{it} - 0.167 \times TID_{it} - 0.418 \times APP_{it} - 0.331 \times CC_{it} + 0.607 \times LASSSETS_{it} + 0.234 \times CSRATIO_{it} + 0.397 \times ISRATIO_{it} - 0.452 \times LEVERAGE_{it} + c_{it}
\]

Conclusion and recommendations:

The aim of the study is to examine the financing and working capital management methods on value of the listed companies in Tehran stock exchange. The findings showed that there is a significant relation between debt financing and firm value of the listed companies in Tehran stock exchange. There is a significant association stock issuance financing and firm value of those companies. Also, there is a significant relationship among retained earnings financing and value of those companies. As well, there is a significant relation between average collection period and value of the listed companies in Tehran stock exchange. There is a significant relation between average inventory turnovers in days and value of those firms. Besides, there is a significant association average debt payment period and value of those companies. Finally, there is a significant relationship among cash conversion cycle and value of the listed companies in Tehran stock exchange.

Regarding to the results of the first three hypotheses (financing methods on firm value), it is recommended to the real and potential investors, managers, accountants, auditors, agents and other stakeholders that pay attention to the following factors when they want to make decisions:

1. Debt financing
2. Stock issuance financing
3. Retained earnings financing

Because each method can have positive relation with firm value. According to the four hypotheses of the second hypothesis (working capital management on firm value), it is recommended to the real and potential
investors, managers, accountants, auditors, agents and other stakeholders that pay attention to the following factors when they want to make decisions:
(1) Average collection period
(2) Average inventory turnover in days
(3) Average debt payment period
(4) Cash conversion cycle
Because each factors of working capital management can have positive relation with firm value.

REFERENCES