The steel is one significant and effective good in growth and development of the countries. This good after oil and gas is second volume good of global trade and many basic industries such as transportation, building, making machinery, mine and other industries related to producing and transferring energy, depend on steel. So improvement and development of steel industry is important in economic development of countries. So in this research plot, we tried to do trading off theory and packing order theory in description of financial structure of accepted steel firms in Tehran's securities exchange by using data panel method, evaluate weakness and strengths of this industry for capital structure (Etemadi and Montazeri, 2013).

2 Review on research literature

In checking structure of firms' capital, we try to theorize various sources composite used in financial supply of actions and required investments. Additionally, one can say that the aim of determining capital structure is specifying composite of financial sources of any firm, to maximize its stockholders' wealthy, because cost of firm's capital is subject to its capital structure. Selecting proper capital structure decreases cost of firm's capital and increases market value (Jolahzadeh, 2010).

This matter that how firms select and adjust own strategic financial sources, has attracted many financial economists and yet result in many discussions. Of course, sometime one believes that nature of such problems so complicated that no one can address editing reasonable theory. Since half century before that Weston offers possibility of editing such theories, Modigliani and Miller deliver own theory. Studies show that since publishing their article, various theories and patterns about structure of firms' capital and way of selecting them has been edited.

Researches show that no one of current theories and patterns solely cannot theorize effective factors in determining structure of firms' capital and provide certain answer to below questions:

Why in various conditions, some firms to supply finance of own actions, releasing stock select option, some select utilizing internal and some select borrowing way. Therefore, it seems that the greatest available problem is lack of comprehensive theory that can describes and predicts treatment of financial supply and structure of firms' capital completely.

According to studies, tax, costs of financial distress (bankruptcy), transaction costs, adverse selection and agency conflicts are main factors that firms introduce to financial supply through making debit and forming structure of their capital structure. To determine above factors, already various theories and patterns are offered that most important of them are trade off theory and packing order theory.

In various countries, due to composite of market and various economic conditions, trade off theory and packing order in various periods are checked and compared, and place of such research in Iranian firms id blank. This research wants to compare these two models while check power of description of these two theories about Iranian firms by implementing these two theories on data panel of accepted steel firms in Tehran's securities exchange (Khalifeh Soltani et al., 2014).

2.1 History of research

Ahmadinia, et al., (2012) in own study under title of determining difference of strategic and non-strategic industries of Tehran's securities exchange by highlighting on structure of capital and cash value added by data panel approach, address financial structure category and its effect on firm value due to kind of firm. The results represent that both groups of strategic and non-
strategic industries and also all industries, there is meaningful
relation between financial structure and cash value added. Also,
adjusted coefficients and independent variables coefficients in
regression models shows that relations between financial
structure and cash value added in strategic and non-strategic
industries are different.

Alinejad Saroklaei and Taghizadeh Khanehgah, (2012) in his
research by title of “determining pattern of structure of accepted
firms in Tehran's securities exchange” checked capital structure
of 158 production firms during 1998 to 2002. The results of this
research show that there is a direct relation among profitability,
viable constant asset and size of firm. Findings of this research
confirm trade off theory by rejecting packing order theory.

Shojaei et al., (2015) in a research by title of “over analysis of
determining factors of capital structure in firm level” by
checking 127 studies during 1900 to 2013 conclude that size,
asset structure, growth opportunities, profitability, cash flow and
oscillation play major role in deciding about capital structure.
Checked factors in this research in the countries with various
development degrees, have different impact on capital structure
and effect of these factors has been different during various
times.

Khalifeh Soltani et al., (2014), in a research to compare power of
description of two models, trade off and packing order in
 treatment of Japanese firms conclude that based on outputs,
packing order theory is better than trade off theory. This
researcher showed that if quarter regression model is used,
packing order model has better prediction power.

3 Statistical population
Due to great number of steel firms and their wideness throughout
state and lack of access to audited financial forms, all of them
are statistical population firms to test hypotheses, available firms
in Tehran's securities exchange. Sampling done by systematic
delete method, so that firms have been selected among statistical
population according to below conditions:
1) Are production firms. 2) Since 2009 to 2014 are in exchange.
3) During 2009 to 2014, offer required information to doing this
research completely. 4) Their financial year end is February. 5)
During research, has no change in financial period. 6) Firm has
no operation pause in 2009 to 2014.

Finally, considering above conditions, 22 firms are selected as
sample studied in this research.

4 Research hypotheses
Among two models, packing order and trade off, packing order
model has predicting power more about capital structure of
accepted steel firms in securities exchange.

Packing order (preferred theory) about capital structure of
accepted steel firms in securities exchange is predictor.

Trade off model about capital structure of accepted steel firms in
securities exchange is predictor.

5 Research pattern and variables
Variables in packing order model:
1. Cash flow after payable interest and tax (C_{it})
2. Gain (DIV_{it})
3. Investment (X_{it})
4. Net increasing capital in flow (ΔW_{it})
5. Net debit (ΔD_{it})
6. Deficit: deficit in investment and internal financial sources
stated by below relation:

DFF_{it} = DIV_{it} + X_{it} + ΔW_{it} - C_{it} (1)

In this condition, packing order model is:

ΔD_{it} = a + b_0 ΔFF_{it} + ε_{it} (2)

Variables in trade off model:

Addition to effective variables in packing order model, DFF_{it}
is defined as:

ΔD_{it} = a + b_0 ΔFF_{it} + ε_{it} (3)

6 Findings of research
6.1 Assessing first pattern of research
6.1.1 Non-covariance
In statistics, as standard variances of a variable in considered
certain number of below observations, always are not constant.
Non-covariance issue occur as various periods of error lack
equal variances, so that diagonal elements of covariance matrices
are not equal. In fact, non-covariance occurs as various
observations have various error variance (Gajarati, 2006).

There are two option related to non-covariance and first solution
that is very usual is using efficient evaluator OLS. But at same
time, they use constant standard errors that make presence of
non-covariance possible. Better and second solution occur when
we know pattern, the pattern which we usually don’t know using
weight limit square to calculate effective and efficient evaluators
about non-covariance pattern, if we have correct knowledge.

6.1.2 Self-correlation
Serial (sequence) correlation of disorder in time periods is
defined under title of self-revolve. With supposing that all other
suppositions of OLS are true, under conditions of self-
correlation, OLS evaluator also always lacks diagonal. In result,
OLS is not BLUE no longer, and usual standard errors OLSs and
other test statistics have no validity and credit.

6.1.2.1 Solving non-covariance and self-correlation problems
There are two methods to considering non-covariance and self-
correlation problems that are:

a) Constant standard errors
b) GLS (generalized minimum squares)

6.1.3 F Limer test and research first pattern Hausman test
To assess and hypotheses test, first F Limer test done to specify
integrated data or sign data and also Hausman test to determine
constant effects or accidental effects. F Limer test is used to
determine using composite data model or sign model. If (prob
0.05); (sign data method) and otherwise, integrated data model is
confirmed. Hausman test is done to determine using constant
effect model against accidental effect model. Hausman test is
formed based on exist or non-exist of relation between assessed
regression error and independent model variables. If there is such
relation, accidental effect model is used and if there is no
relation, constant effect model is used. H_0 hypothesis shows lack
of relation of independent variables and assessment error and H_1
hypothesis shows presence of relation (table 1). H0: random effect, H1: fixed effect

Table 1: research first pattern variance non-equality test (packing order model)

<table>
<thead>
<tr>
<th>model</th>
<th>F Limer test (Possibility)</th>
<th>Hausman test (Possibility)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistics</td>
<td>Result of test</td>
</tr>
<tr>
<td></td>
<td>2.01</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Due to above table, since F Limer statistics is less than 5 percent, data is used in form of panel. Here, to determine proper model, Hausman test is used because achieved possibility is less than 5 percent. Zero hypothesis is rejected and constant effects model is used (table 2).

Table 2: results of assessment of research first pattern (packing order model)

<table>
<thead>
<tr>
<th>variables</th>
<th>Assessment coefficients</th>
<th>T statistics</th>
<th>Standard deviation</th>
<th>Meaningfulness level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant coefficient (y-intercept)</td>
<td>-4.29</td>
<td>-7.07</td>
<td>6.36</td>
<td>0.0000***</td>
</tr>
<tr>
<td>Deficient (DIFF)</td>
<td>-0.26</td>
<td>-2.28</td>
<td>0.78</td>
<td>0.0231**</td>
</tr>
<tr>
<td>Determination coefficient</td>
<td>Adjusted determination coefficient</td>
<td>Durbin-Watson statistic</td>
<td>F statistic possibility</td>
<td>F statistics</td>
</tr>
<tr>
<td>R-squared</td>
<td>Adjusted squared</td>
<td>Durbin-Watson statistic</td>
<td>F statistic possibility</td>
<td>F statistics</td>
</tr>
<tr>
<td>0.72</td>
<td>0.68</td>
<td>2.06</td>
<td>0.000000</td>
<td>7.29</td>
</tr>
</tbody>
</table>

Due to F statistic (7.29) and achieved error level (0.000000) is less than 0.05 error level, in result, in 95% assurance level, one can say that in research model, it is fits well and has high meaningfulness.

\[ R^2 = 0.65 \] represents adjusted determination coefficient represents description of independent variables. It means that dependent variable is justified by independent and control variables, while Durbin-Watson statistic amount is 2.06.

Due to result of first pattern assessment, it is clear that deficient variable in packing order has negative and meaningful effect on net debit, so that one unit increase in deficient makes 0.26 decrease in net debit (table 3).

6.1.4 Assessment of research first pattern

\[ \Delta D_{it} = a + b_1 D_{it} + a_t \] (4)

Due to above table, since F Limer statistics is less than 5 percent, data is used in form of panel. Here, to determine proper model, Hausman test is used because achieved possibility is less than 5 percent. Zero hypothesis is rejected and constant effects model is used (table 4).

Table 3: variance non-equality of research second pattern test (trade off model)

<table>
<thead>
<tr>
<th>Model</th>
<th>F Limer test (Possibility)</th>
<th>Hausman test (Possibility)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>statistic</td>
<td>Result of test</td>
</tr>
<tr>
<td></td>
<td>2.27</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Due to F statistic (7.29) and achieved error level (0.000000) is less than 0.05 error level, in result, in 95% assurance level, one can say that in research model, it is fits well and has high meaningfulness.

\[ R^2 = 0.65 \] represents adjusted determination coefficient represents description of independent variables. It means that more than 65 percent of dependent variable changes is justified by independent and control variables, while Durbin-Watson statistic amount is 1.81.

Due to F statistic (3.83) and achieved error level (0.000000) is less than 0.05 error level, in result, in 95% assurance level, one can say that there is no serial correlation model among residual statements and acclaim lack of existence of self-correlation.

Due to result of first pattern assessment, it is clear that deficient variable in trade off theory in describing financial structure of accepted firms in Tehran’s securities exchange by using data panel.

6.2 assessing second research pattern

6.2.1 F Limer test and research second pattern Hausman test

6.2.2 Assessment of research first pattern

\[ \Delta D_{it} = a + b_1 D_{it} + a_t \] (4)

Due to above table, since F Limer statistic possibility is less than 5 percent, data is used in form of panel. Here, to determine proper model, Hausman test is used because achieved possibility is less than 5 percent. Zero hypothesis is rejected and constant effects model is used (table 4).

Table 4: results of assessment of research second pattern (trade off model)

<table>
<thead>
<tr>
<th>variables</th>
<th>Assessment coefficients</th>
<th>T statistics</th>
<th>Standard deviation</th>
<th>Meaningfulness level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant coefficient (y-intercept)</td>
<td>0.58</td>
<td>1.24</td>
<td>11.47</td>
<td>0.2849</td>
</tr>
<tr>
<td>Deficient (DIFF)</td>
<td>0.59</td>
<td>3.56</td>
<td>0.29</td>
<td>0.0000***</td>
</tr>
<tr>
<td>Determination coefficient</td>
<td>Adjusted determination coefficient</td>
<td>Durbin-Watson statistic</td>
<td>F statistic possibility</td>
<td>F statistics</td>
</tr>
<tr>
<td>R-squared</td>
<td>Adjusted squared</td>
<td>Durbin-Watson statistic</td>
<td>F statistic possibility</td>
<td>F statistics</td>
</tr>
<tr>
<td>0.65</td>
<td>0.60</td>
<td>1.81</td>
<td>0.000000</td>
<td>3.83</td>
</tr>
</tbody>
</table>

Due to F statistic (3.83) and achieved error level (0.000000) is less than 0.05 error level, in result, in 95% assurance level, one can say that there is no serial correlation model among residual statements and acclaim lack of existence of self-correlation.

7 Conclusion

Main aim of doing this research is comparison of trade off theory and packing order theory in describing financial structure of accepted firms in Tehran’s securities exchange by using data panel.
Due to results of research patterns assessment, these results are achieved:

Due to result of first pattern assessment, it is clear that:

Deficient variable in packing order model has negative and meaningful effect on net debit, so that one unit increase in deficient make 0.26 decrease in net debit.

Due to result of second pattern, it is clear that:

Deficient variable in trade off model has positive and meaningful effect on net debit, so that one unit increase in deficient makes 0.59 increase in net debit. Results suggest positive relation between longtime debit changes of studied firms and necessary adjustment to gain optimum debit level. In other words, steel industry firms tried to average usage amount of long time debit (optimum debit amount) that these results support trade off theory. Result related to trade off theory is different from Sandra and Mirez (1998) research that already confirmed by packing order theory. But it fits with result of Flannery and Ranjan (2006) research in U.S and also with general result of Bagherzadeh (2002) research in Iran that already confirmed by trade off theory.

8 Suggestions

It suggested that due to trade off theory, the firms in steel industry with decrease deficient, try to decrease own net debit.

It suggested that research subject is checked in various industries.

It suggested that detailed research about this subject separately is done by considering various definitions of capital structure.

References