CAPITAL STRUCTURE AND FINANCING SOURCES IN MELLI BANK AND WAYS TO OPTIMIZE IT

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Abstract
This research has surveyed capital structure and financial resources of Melli bank then has tried to offer some approaches to optimize these resources. Considering the relationship between bank capital structure and effect of capital structure upon capital cost, examining this problem in bank is very impressive. This research is to determine combination of capital structure of Melli bank. To pursue this goal, we examined capital structure in a ten year period. Some criteria as capital cost and regulations on capital are applied for examining the optimum level of capital structure. For calculating the cost of non-operational deposits a questionnaire is designed & distribute among bank branches. Then after analyzing data, the allocation rate of nonoperational costs to deposits was figured out. Finally weighted average of bank capital cost from 2005 to 2013 was handed out. Findings show that in the main hypothesis, Actual capital structure of Melli Bank is not optimal. And the first sub-hypothesis, the cost of financing of Melli Bank is not optimal. Also, the second sub-hypothesis shows that credit risk of Melli Bank is not optimal. 

Key words: Actual capital structure, cost of financing, credit risk

INTRODUCTION
Finance is the allocation of assets and liabilities over time under conditions of certainty and uncertainty. A key point in finance is the time value of money, which states that a unit of currency today is worth more than the same unit of currency tomorrow. Finance aims to price assets based on their risk level, and expected rate of return. Finance can be broken into three different sub categories: public finance, corporate finance and personal finance. Capital, as distinct from labor and land, lacks a 'natural' unit of measurement. While we may added to head (even woman's head to man's head) and acre to acre (possibly weighted by an index of fertility) we cannot add beer barrels to blast furnaces nor trucks to yards of telephone wire. Yet, the economist cannot do his work properly without a generic concept of capital. Where he has to deal with quantitative change he needs a common denominator. Almost inevitably he follows the business man in adopting money value as his standard of measurement

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of capital change. This means that whenever relative money values change, we lose our common denominator (Lachmann, 1995). Capital structure refers to the way a corporation finances its assets through some combination of equity, debt, or hybrid securities. A firm's capital structure is then the composition or 'structure' of its liabilities. For example, a firm that sells $20 billion in equity and $80 billion in debt is said to be 20% equity-financed and 80% debt-financed. The firm's ratio of debt to total financing, 80% in this example, is referred to as the firm's leverage. In reality, capital structure may be highly complex and include dozens of sources. Gearing Ratio is the proportion of the capital employed of the firm which come from outside of the business finance, e.g. by taking a short term loan etc (Brealey and Myers, 2008).

Over the years three major theories of capital structure emerged which diverge from the assumption of perfect capital markets under which the "irrelevance model" is working. The first is the trade-off theory which assumes that firms trade off the benefits and costs of debt and equity financing and find an "optimal" capital structure after accounting for market imperfections such as taxes, bankruptcy costs and agency costs. The second is the pecking order theory (Myers, 1984, Myers and Majluf, 1984) that argues that firms follow a financing hierarchy to minimize the problem of information asymmetry between the firm’s managers -insiders and the outsiders-Shareholders.

1- Trade-off theory

Trade-off theory allows the bankruptcy cost to exist. It states that there is an advantage to financing with debt (namely, the tax benefits of debt) and that there is a cost of financing with debt (the bankruptcy costs and the financial distress costs of debt). The marginal benefit of further increases in debt declines as debt increases, while the marginal cost increases, so that a firm that is optimizing its overall value will focus on this trade-off when choosing how much debt and equity to use for financing. Empirically, this theory may explain differences in D/E ratios between industries, but it doesn't explain differences within the same industry (Leary and Roberts, 2005).

2- Pecking order theory

Pecking Order theory tries to capture the costs of asymmetric information. It states that companies prioritize their sources of financing (from internal financing to equity) according to the law of least effort, or of least resistance, preferring to raise equity as a financing means "of last resort". Hence: internal financing is used first; when that is depleted, then debt is issued; and when it is no longer sensible to issue any more debt, equity is issued. This theory maintains that businesses adhere to a hierarchy of financing sources and prefer internal financing when available, and debt is preferred over equity if external financing is required (equity would mean issuing shares which meant 'bringing external ownership' into the company). Thus, the form of debt a firm chooses can act as a signal of its need for external finance (Fama and French, 2002). The pecking order theory is popularized by Myers (1984) when he argues that equity is a less preferred means to raise capital because when managers (who are assumed to know better about true condition of the firm than investors) issue new equity, investors believe that managers think that the firm is overvalued and managers are taking advantage of this over-valuation. As a result, investors will place a lower value to the new equity issuance (Myers and Majluf, 1984).

3- The Modigliani-Miller Theorem

The theory of business finance in a modern sense starts with the Modigliani and Miller (1958) capital structure irrelevance proposition. Before them, there was no generally accepted theory of capital structure. Modigliani and Miller start by assuming that the firm has a particular set of expected cash flows. When the firm chooses a certain proportion of debt and equity to finance its assets, all that it does is to divide up the cash flows among investors. Investors and firms are assumed to have equal access to financial
markets, which allows for homemade leverage. The investor can create any leverage that was wanted but not offered, or the investor can get rid of any leverage that the firm took on but was not wanted. As a result, the leverage of the firm has no effect on the market value of the firm.

4- The market timing theory
The market timing theory of capital structure argues that firms time their equity issues in the sense that they issue new stock when the stock price is perceived to be overvalued, and buy back own shares when there is undervaluation. Consequently, fluctuations in stock prices affect firm’s capital structures. There are two versions of equity market timing that lead to similar capital structure dynamics. The first assumes economic agents to be rational. Companies are assumed to issue equity dire city after a positive information release which reduces the asymmetry problem between the firm's management and stockholders. The decrease in information asymmetry coincides with an increase in the stock price. In response, firms create their own timing opportunities (Baker and Wurgler, 2002).

An active area of research in finance is that which tries to translate the models above as well as others into a structured theoretical setup that is time-consistent and that has a dynamic set up similar to one that can be observed in the real world. Managerial contracts, debt contracts, equity contracts, investment returns, all have long lived, multi-period implications. Therefore it is hard to think through what the implications of the basic models above are for the real world if they are not embedded in a dynamic structure that approximates reality. A similar type of research is performed under the guise of credit risk research in which the modeling of the likelihood of default and its pricing is undertaken under different assumptions about investors and about the incentives of management, shareholders and debt holders. Examples of research in this area are Goldstein, Ju, Leland (1998) and Hennessy and Whited (2004).

The main objective of this study was determine the optimal capital structure for Melli Bank due to the risk and cost of capital accordance with international standards.

METHODOLOGY
This study has done to the capital structure and financing sources in Melli Bank and ways to optimize it. The population of this study is Melli bank in Iran. We have used analytical, descriptive and compare process in this study. To collecting data has done from financial statement (such as income statement, statement of equity, Balance sheet and statement of cash flow) of Melli Bank.

To assess the bank's cost of capital for each of the years, weighted average cost of capital (WACC) has been used. Also, Compare process are used to traced changes of capital cost during 2005 to 2013 and as well each of the items have been used comparison of changes in capital structure over the years.

FINDINGS AND CONCLUSION
To assess the bank's cost of capital for each of the years, weighted average cost of capital (WACC) has been used. Table 1 shows the WACC of Melli bank for 2005-2013

<table>
<thead>
<tr>
<th>Year</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>WACC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WACC</td>
<td>12054</td>
<td>11889</td>
<td>11364</td>
<td>9790</td>
<td>11150</td>
<td>12185</td>
<td>9656</td>
<td>9723</td>
<td>10113</td>
</tr>
</tbody>
</table>

According to table 1, the process of weighted average cost of capital in Melli bank until 2010 (Except 2008 and 2009 years) have Declined and then increased. The WACC was 10143 that was less than 2005.
This decrease is due to reduced share of loans from the banking system and increased deposits (especially low-cost deposits) and loans from the central bank, despite a doubling of the rate of 6 percent to 21 percent.

The optimal capital structure of banks has raised some tips and rules that must be considered include:

**Capital adequacy rate:** Capital adequacy rate was determined 8% of the bank's risky assets.

Table 2 shows the Ratio of Capital to risky assets for 2005-2013.

According to table 2, the Capital adequacy rate was not according to international norms and gradually to 2012 years the situation has worsened. It has improved in 2013 by bank profitability and loss of accumulated losses and also the increased capital ratios but it is not yet at an acceptable level.

Capital structure of the bank 2013 year, was characterized by the Ratio of bank Capital to risky assets is equal to 3.6% and rates are long distance from international capital adequacy ratio. Thus, the bank's capital structure is not optimal.

After reviewing the status of capital adequacy rate, and other criteria to evaluate the optimal capital structure of the Melli Bank for 2013 year will be examined. Therefore Ratio of deposits is shown to total deposits Ratio of bank debt as well calculated in the table 4.

Hence, according to the Bank's deposits are obtained from a large number of depositors, in order to achieve this goal is necessary. So in this study as a measure of industry average is used to optimize this ratio.

Table 3: industry average

<table>
<thead>
<tr>
<th>Banks</th>
<th>Makan</th>
<th>Keshavazi</th>
<th>Saderat</th>
<th>Tejarat</th>
<th>Refah</th>
<th>Tejarat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio of deposits to loans</td>
<td>.6838</td>
<td>.8375</td>
<td>.7839</td>
<td>.123</td>
<td>.8</td>
<td>.3864</td>
</tr>
</tbody>
</table>
According to table 3 the Ratio of deposits to loans is .3864 in 2013 that industry average is bigger that Melli bank’s Ratio of deposits to loans (.3864). Also, Ratio of long-term deposits to total deposits in 2013 is 0.059 that have a very differences with industry average. So it is better banks absorb more and more of these types of deposits and have attempted to deliver the industry average. Finding show that the capital structure of the Bank is also far from optimal capital structure.

One important criterion is used to determine the optimal capital structure is cost of capital. Therefore, the optimal capital structure has known as combination of that the lowest weighted average cost of capital. It is obtained cheapest way to get the resources (operating costs) which leads to an increase in bank profitability. The following table shows the amount of each item of cost of capital and capital of Melli banks in 2013 shows.

Table 4: Cost of Capital 2005 -2013

<table>
<thead>
<tr>
<th>Sources</th>
<th>Percent Financing</th>
<th>Cost of Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current deposits</td>
<td>27.93</td>
<td>7.6</td>
</tr>
<tr>
<td>Savings deposits</td>
<td>12.31</td>
<td>10</td>
</tr>
<tr>
<td>Short-term deposits</td>
<td>4.76</td>
<td>12.5</td>
</tr>
<tr>
<td>Annual deposits</td>
<td>.65</td>
<td>17.1</td>
</tr>
<tr>
<td>Two-year deposits</td>
<td>.11</td>
<td>17.4</td>
</tr>
<tr>
<td>Three-year deposits</td>
<td>.09</td>
<td>18.4</td>
</tr>
<tr>
<td>The five-year deposits</td>
<td>1.75</td>
<td>20.2</td>
</tr>
<tr>
<td>Deposits and other debt</td>
<td>9.79</td>
<td>6.2</td>
</tr>
<tr>
<td>Debt to Central Bank</td>
<td>28.36</td>
<td>12</td>
</tr>
<tr>
<td>Liabilities to other banks</td>
<td>6.62</td>
<td>13</td>
</tr>
<tr>
<td>Mortgage loan from other banks</td>
<td>2.7</td>
<td>3</td>
</tr>
<tr>
<td>Equity</td>
<td>3.04</td>
<td>19</td>
</tr>
<tr>
<td>Special Deposit</td>
<td>.95</td>
<td>14.4</td>
</tr>
</tbody>
</table>

According to data from the table 4 shows that weighted average cost of capital 0.1015, which have a huge gap with the industry average of 0.0316, so, this ratio is not optimized.

Findings show that in the main hypothesis, Actual capital structure of Melli Bank is not optimal. And the first sub-hypothesis, the cost of financing of Melli Bank is not optimal. Also, the second sub-hypothesis shows that credit risk of Melli Bank is not optimal.

According to these Findings we suggested that:

Due to the nature of the activities and assets of the banks, the investment banks trying to increase the minimum acceptable.
To increase the share of deposits in bank financing and to make the Ratio of deposits loans to the industry average.
The long-term deposits increased and Ratio of deposits to total deposits must be brought to the industry average.

References