Impacts of liquidity ratios on profitability
(Case of oil and gas companies of Pakistan)

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ABSTRACT

The present study aims to reveal the relationship between liquidity and profitability so that every firm has to maintain this relationship while in conducting day to day operations. The results show that there is a significant impact of only liquid ratio on ROA while insignificant on ROE and ROI; the results also show that ROE is no significant effected by three ratios current ratio, quick ratio and liquid ratio while ROI is greatly affected by current ratios, quick ratios and liquid ratio. The main results of the study demonstrate that each ratio (variable) has a significant effect on the financial positions of enterprises with differing amounts and that along with the liquidity ratios in the first place. Profitability ratios also play an important role in the financial positions of enterprises. Every stakeholder has interest in the liquidity position of a company. Suppliers of goods will check the liquidity of the company before selling goods on credit. Employees should also be concerned about the company’s liquidity to know whether the company can meet its employee related obligations—salary, pension, provident fund, etc. Thus, a company needs to maintain adequate liquidity so that liquidity greatly affects profits of which some portion that will be divided to shareholders. Liquidity and profitability are closely related because one increases the other decreases.

Keywords: Liquidity ratios, Return on Investments, Return on equity, Return on Assets, Regression analysis

INTRODUCTION

Liquidity management is very important for every organization that means to pay current obligations on business, the payment obligations include operating and financial expenses that are short term but maturing long term debt. Liquidity ratios are used for liquidity management in every organization in the form of current ratio, quick ratio and Acid test ratio that greatly affect on profitability of organization. So business has enough liquid assets (Cash, Bank) to meet the payment schedule by comparing the cash and near-cash with the payment obligations. Liquidity ratios work with cash and near-cash assets (together called "current" assets) of a business on one side, and the immediate payment obligations (current liabilities) on the other side. The near-cash assets mainly include receivables from customers and inventories of finished goods and raw materials. The payment obligations include dues to suppliers, operating and financial expenses that must be paid shortly and maturing installments under long-term debt.

Liquidity ratios measure a business’ ability to meet the payment obligations by comparing the cash and near-cash with the payment obligations. If the coverage of the latter by the former is insufficient, it indicates that the business might face difficulties in meeting its immediate financial obligations. This can, in turn, affect the company's business operations and profitability. The Liquidity versus Profitability Principle: There is a trade-off between liquidity and profitability; gaining more of one ordinarily means giving up some of the other.

LITERATURE REVIEW

Operating cash flows generate by assets will affect continuing firm liquidity. It is not only because of the value of liquidation (Soenen, 1993). Firms with fewer current assets will having problem in continuing their operations while if the current assets are too much, it shows the return on investment is not in perfect condition. (Horne and Wachowicz, 2000). Since optimum cash levels are influenced by the factors outside the preventive concept of treasury, the company must think broad and take serious operational decisions on how to the profit opportunities that is available in cash flow process.

Here are the methods help to compute liquidity in business organization. We can determine how liquid the firm is by using ratio analysis. To find a ratio of current assets to current liabilities is by current ratio. Quick ration will permit know whether can disburse their current debt, exclude to sell any inventory. It’s vital for an
organization to concern on this because, if they need to sell inventory, they also need a customer to buy that inventory. (Chinmoy Gosh 2009).

The economics and finance literature analyze four possible reasons for firms to hold liquid assets; the transaction motive Miller and Orr 1966, the precautionary motive Opler, Pinkowitz, Stulz, and Williamson 1999, the tax motive Foley, Hartzell, Titman, and Twite 2007 and finally the agency motive Jensen 1986. Analysts use liquidity ratios to make judgments about a firm, but there are limitations to these ratios. The liquidity of a firm's receivables and inventories can be misleading if the firm's sales are seasonal and or the firm uses a natural business year (Gibson, Charles H. 1991 Financial Statement Analysis p.261 Cincinnati, OH: South-Western College Publishing).

Cash flow ratios determine the amount of cash generated over a period of time and compare that to short-term obligations. This gives a clearer picture if the firm has a liquidity problem in connection with its short-term debt paying ability. Operating cash flow is computed by dividing cash flow from operations by current liabilities. This shows the company's ability to generate the resources needed to meet current liabilities (Mills, Vamamura: Journal of Accountancy 1998). Firms with less current assets will having problem in continuing operations while if the currents assets is too much, it shows the return on investment for the company is not in perfect condition (Home and Wachowiz, 2000).

This concept has a relation with monetary theory because transaction and provision is a main reason in managing cash. In addition, this reason also has an assumption which all the concept of treasury management is in the good judgment of their terms. (Maseda & Iturralde, 2001). Cash conversion cycle shows the relation between liquidity and profitability. It is more important to measured profitability compared to if the company is using current ratio (Eljelly, 2004). The higher the ratio the higher the comfort level. All of the cash flow ratios are not uniform but vary by industry characteristics. The analyst would then adjust his assumptions accordingly to assess the liquidity of a firm. (By Lauri Phillips)

Morris and Shin (2010) conceptually defines the liquidity ratio as “realizable cash on the balance sheet to short term liabilities.” In turn, “realizable cash” is defined as liquid assets plus other assets to which a haircut has been applied. Ration analysis is one of the conventional way that use financial statements to evaluate the company and create standards that have simply interpreted financial sense (George H.Pink, G. Mark Holmes 2005). A sudden stop in an organization is generally defined as a sudden slowdown in emerging market capital (cash) inflows, with an associated shift from large current account deficits into smaller deficits or small surpluses. Sudden stops are “dangerous and they may result in bankruptcies, destruction of human capital and local credit channels” Calvo, 1998.

According to many university researchers (Basno & Dardac, 2004), the required liquidity for each business depends on the balance sheet situation of the business. In order to evaluate the liquidity state, special importance is held by the way in which there are classified organizational assets and liabilities (Basno & Dardac, 2004). Liquidity risk is seen as a major risk, but it is the object of: extreme liquidity, "security cushion" or the specialty of mobilizing capital at a "normal" cost (Dedu, 2003)

The International Accounting Standards (IFRS, 2006) indicate the fact that liquidity refers to the available cash for the near future, after taking into account the financial obligations corresponding to that period. Liquidity risk consist in the probability that the organization should not be able to make its payments to creditors, as a result of the changes in the proportion of long term credits and short term credits and the uncorrelation with the structure of organization's liabilities (Stoica, 2000).

Liquid assets should have the following attributes: diversified, residual maturities appropriate for the institution’s specific cash flow needs; readily marketable or convertible into cash; and minimal credit risk. (2005 The Bank of Jamaica Publish: February 1996).

Liquidity lines and funding facilities may also have a role within an institution’s liquidity programme by helping an institution protect itself against temporary difficulties that might occur when honoring cash outflow commitments. (2005 The Bank of Jamaica Publish: February 1996).

The efficient management of the broader measure of liquidity, working capital, and its narrower measure, cash, are both important for a company's profitability and well being. In the words of Fraser (1998) "there may be no more financial discipline that is more important, more misunderstood, and more often overlooked than cash
management.” However, as argued vividly by Nicholas (1991,) companies usually do not think about improving liquidity management before reaching crisis conditions or becoming on the verge of bankruptcy. The earlier cash management research focused on using quantitative models that weight the benefits and costs of holding cash (liquidity). Under this category fall Baumol's (1952) inventory management model and Miller and Orr’s (1966) model which recognizes the dynamics of cash flows.

**SELECTION OF VARIABLES**

**Dependent variables**

1. **Return on assets (ROA)** = Net profit before tax/ Total assets  
2. **Return on equity (ROE)** = Net profit before tax/ shareholder’s equity  
3. **Return on Investments (ROI)** = Net profit before tax/ Investments

**Independent variables**

- **Current Ratio** = current assets/ current liabilities  
- **Acid test ratio or Quick ratio** = current assets-inventories/ current liabilities  
- **Liquid ratio** = cash, investments/ current liabilities

**DATA COLLECTION**

The study is conducted between the year’s 2004 and 2009 and after collecting data about the financial positions as a result of annual activities and the related ratios of 26 enterprises per year traded on the Pakistan (Oil and Gas companies), as Karachi Stock Exchange (KSE).

**MODELS**

The research is being conducted to evaluate the effect of liquidity ratios on profitability through examining the oil and gas sector of Pakistan by selecting (selected 26 companies from sector) from 2004-2009 by applying linear regression through SPSS.

\[
\text{ROA} = \alpha_1 + \beta_{11} \text{LR} + U_i \quad \text{model (1)}
\]
\[
\text{ROE} = \alpha_2 + \beta_{21}\text{CR} + \beta_{22} \text{QR} + \beta_{23} \text{LR} + U_i \quad \text{model (2)}
\]
\[
\text{ROI} = \alpha_3 + \beta_{31}\text{CR} + \beta_{32} \text{QR} + \beta_{33} \text{LR} + U_i \quad \text{model (3)}
\]

Where: ROA= Return on investment, ROE= Return on equity, ROI= Return on investment, \(\alpha\) : the constant, \(\beta\): the regression coefficient

**MODEL ESTIMATION**

The panel data analysis is performed by using OLS assuming that all the intercept and slope co-efficients are same over time and individual.

<table>
<thead>
<tr>
<th>Model</th>
<th>Dependent</th>
<th>Independent</th>
<th>Slope Co-efficient((\beta))</th>
<th>P-vale</th>
<th>(R^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ROA</td>
<td>LR</td>
<td>30.51</td>
<td>0.03*</td>
<td>0.73</td>
</tr>
<tr>
<td>2</td>
<td>ROE</td>
<td>CR</td>
<td>-2.78</td>
<td>0.25</td>
<td>0.81</td>
</tr>
<tr>
<td></td>
<td></td>
<td>QR</td>
<td>1.41</td>
<td>0.41</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>LR</td>
<td>180.80</td>
<td>0.16</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>ROI</td>
<td>CR</td>
<td>-8.65</td>
<td>0.02*</td>
<td>0.90</td>
</tr>
<tr>
<td></td>
<td></td>
<td>QR</td>
<td>5.60</td>
<td>0.03*</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>LR</td>
<td>420.29</td>
<td>0.03*</td>
<td></td>
</tr>
</tbody>
</table>

The above table suggests that empirical evidence regarding the relationship between liquid ratios holdings and profitability for a panel of oil and gas companies of Pakistan. Whereby profitability is improved for oil and gas sector that hold some liquid assets, however, there is a point beyond which holding further liquid assets diminishes profitability, all else equal.
The results show from linear regression analysis ROA is significantly affected by only liquidity ratio but ROE is not affected by current ratio, quick ratio and liquid ratio whereas ROI is greatly affected by all three liquid ratios current ratio, quick ratio and liquid ratio. According to this first model analysis the result has been come that ROA is affected by only liquid ratio because p-value is less than 5% of LR. So in liquidity ratios LR affects on ROA other two ratios QR and CR don’t affect according to analysis of oil and gas companies of Pakistan. Therefore value is 6.85 that is the constant value and independent variable LR’s value is 30.51 that means that ROA is directly affected by 30.51LR so standard error (S.E) is 9.35 and p-value is 0.031 and R square value came out of 0.73. The 2nd equation is to check the impact of ROE on liquidity ratios but there is no significant effect of CR, LR and QR on ROE because there is no p-value whose value came less than 5% all are above than 5%. The 3rd equation is to check the result has been come that ROI is affected by all three ratios because p-value is less than 5% of CR,QR and LR. So in liquidity ratios all three ratios affect on ROI but CR in negative proportion after analysis of oil and gas companies of Pakistan. Therefore value is 373.01 that is the constant value and independent variable values of CR,QR and LR shown in equation that means that ROI is directly affected by 5.60 QR and 420.29 LR but negative effect by -8.65 CR. So standard error (S.E) and p-values are shown in equation three.

CONCLUSION & LIMITATION

The More generally, this paper marks a first attempt to empirically address the relationship between liquid ratios and profitability. In interpreting the estimation results, it should be kept in mind that this work uses a reduced form model. In any event, the current paper serves as an initial step, highlighting an important, if elementary, relationship, relevant to the regulation of companies.

So it is concluded that liquidity ratios affect the profitability ratios. There is only one limitation that the data is only of 6 years data due to availability of data constraint.

REFERENCES

1. 2008 International Academy of Business and Economics ISSN: 1544-8037