# An analysis of liquidity, profitability and risk-A study of selected listed food, beverage and tobacco companies in Sri Lanka

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**Abstract:** The study is to analysis the effects of liquidity, profitability and risk of listed food, beverage and tobacco companies on Colombo Stock Exchange (CSE) in Sri Lanka. In this study purpose, six companies have been selected from CSE for six years period from 2006/2007 to 2011/2012. The following ratios were used as indicators such as current ratio and quick ratio for liquidity, Earnings per Share (EPS) and Return on Assets (ROA) for profitability and Degree of Combined Leverage (DCL) for combined risk. This study highlights that liquidity is insignificant impact on profitability.

**Keywords:** Liquidity, Profitability, risk.

## Introduction

Liquidity refers to the ability of a firm to meet its short term obligations. Liquidity plays a crucial role in the successful functioning of a business firm. A study of liquidity is major importance to both the internal and external analysts because of its close relationship with day to day operations of a business Bhunia, (2010). A weak liquidity position poses a threat to the solvency as well as profitability of a firm and makes it unsafe and unsound. Liquid assets are those assets which can be turned into cash quickly with little or no loss of value. High liquidity produces flexibility for a firm or an investor in a low-risk position, but it also tends to decrease profitability. The quick ratio and current ratio are the two commonly used indicators to measure the company's liquidity.

Profitability is a measure of the amount by which a firm's revenues exceeds its relevant expenses. Potential investors are interested in dividends and appreciation in market price of stock, so they pay more attention on the profitability ratios. Managers on the other hand are interested in measuring the operating performance in terms of profitability. Hence, a low profit margin would suggest ineffective management and investors would be hesitant to invest in the company. There are two types of profitability ratios are profit margin ratios and return ratios. A profitability ratio commonly includes gross profit margin, net profit margin and operating profit margin. The ROA, Return on Equity, Return on Capital Employed and EPS are the most important ratios under the return ratios.

An operating risk can be defined as the "risk of loss resulting from inadequate or failed internal processes, people and systems or from external events." Thus, operating risk may come from mundane sources such as incompetent personnel or miscommunication between a  and a , or it may stem from events beyond a firm's control, such as damage to goods in transport, or even a sudden drop in . Because it is not financial, it is the most difficult type of risk to quantify. Sometimes, operating risks are predictable.

Maintaining a proper liquidity indicates that funds are confined to liquid assets thereby making them unavailable for operational use or for investment purposes for higher returns. Therefore, firms should always strike to maintain a balance between conflicting objectives of liquidity and profitability. The firm's

liquidity should not be too high or too low. Excessive dependence on liquidity indicates the accumulation of idle funds that don't fetch any profits for the firm Smith, (1980). Finance Manager has to maintain the relationship between operating risk and profitability of a firm. Therefore, the purpose of this study is to analysis of liquidity, profitability and risk of selected listed food, beverage and tobacco companies in Sri Lanka.

## Objectives

The objectives are directed towards the following;

❑ To analyze the liquidity, profitability and risk level of listed food, beverage & tobacco companies on CSE

❑ To identify the nature and extent of the relationship between liquidity and profitability

❑ To find out the nature and extend of the relationship between profitability and risk

## Literature Review

The empirical studies conducted in Sri Lanka as well as abroad are presented to discern the analyze of liquidity, profitability and risk.

Eljelly, A (2004) examined the relation between profitability and liquidity measured by current ratio and cash gap (cash conversion cycle) on a sample of joint stock companies in Saudi Arabia using correlation and regression analysis. They found a negative relationship between profitability and liquidity indicators, and it was found that CCC had a bigger impact over profitability then Current ratio. Also it was observed that there was great variation among industries with respect to the significant measure of liquidity.

Vishnani & Bhupesh (2007) mentioned that, the most common measure of liquidity is current ratio and return on investment for profitability. A higher current ratio indicates a larger investment in current assets which means, a low rate of return on investment for the firm, as excess investment in current assets will not yield enough return. A low current ratio means smaller investment in current assets which means a high rate of return on investment for the firm, as no unused investment is tied up in current assets. However, a low current ratio might also mean disruption in production and sales due to the frequent stock outs and the inability to pay the creditors in time due to the restrictive policy.

A study of liquidity is of major importance to both the internal and the external analysts because of its close relationship with day-to-day operations of a business Bhunia, (2010). Dilemma in liquidity management is to achieve desired tradeoff between liquidity and profitability Rahmen, & Nasr (2007) Liquidity requirement of a firm depends on the peculiar nature of the firm and there is no specific rule on determining the optimal level of liquidity that a firm can maintain in order to ensure positive impact on its profitability.

Perobelli, Pereira & David (2006) argue that on the long-term there is a necessity to achieve a balance between the financial and economic profile. For these authors, liquidity and financial position reflected in return on equity, which also contains the effect of financial leverage, are two sides of a coin which is the economic and financial health of companies. One thing to note is that the appropriate return allows the self financing of business operations through the retained portion of net profit. Thus, good profitability increases the liquidity and marketability promotes proper growth and future profitability.

According to Assaf Neto (2003), the greater the amount of funds invested in current assets, the lower the profitability, and by the same time the less risky is the working capital strategy. In this situation, the returns are lower in the case of a greater financial slack, in comparison to a less liquid working capital structure. Conversely, a smaller amount of net working capital, while sacrificing the safety margin of the company, by raising its insolvency's risk, positively contributes to the achievement of larger return rates, since it restricts the volume of funds tied up in assets of lower profitability. This risk-return ratio behaves in a way that no change in liquidity occurs without the consequence of an opposite move in profitability.

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Deloof, (2003) discussed that most firms had a large amount of cash invested in working capital. It can therefore be expected that the way in which working capital is managed will have a significant impact on profitability of those firms. Using correlation and regression tests he found a significant negative relationship between gross operating income and the number of days accounts receivable, inventories and accounts payable of Belgian firms. On basis of these results he suggested that managers could create value for their shareholders by reducing the number of days' accounts receivable and inventories to a reasonable minimum. The negative relationship between accounts payable and profitability is consistent with the view that less profitable firms wait longer to pay their bills.

Singh & Pandey (2008) had an attempt to study the working capital components and the impact of working capital management on profitability of Hindalco Industries Limited for period from 1990 to 2007. Results of the study showed that current ratio, liquid ratio, receivables turnover ratio and working capital to total assets ratio had statistically significant impact on the profitability of Hindalco Industries Limited.

Chakraborty (2008) evaluated the relationship between working capital and profitability of Indian pharmaceutical companies. He pointed out that there were two distinct schools of thought on this issue: according to one school of thought, working capital is not a factor of improving profitability and there may be a negative relationship between them, while according to the other school of thought, investment in working capital plays a vital role to improve corporate profitability, and unless there is a minimum level of investment of working capital, output and sales cannot be maintained – in fact, the inadequacy of working capital would keep fixed asset inoperative.

Velnampy & Nimalathasan, (2008) investigated the association between organizational growth and profitability of Commercial bank ltd in Sri Lanka over the period of 10 years from 1997 to 2006. They found that, sales are positively associated with profitability ratios except operating profit, return on equity and number of depositors are negatively correlated to the profitability ratios except operating profit and return on equity. Likewise, number of advances is also negatively correlated to the return on average

shareholders' funds. Furthermore, Velnampy, & Nimalathasan, (2010) made a study regarding the association between firm size and profitability of all the branches of Bank of Ceylon and Commercial Bank of Ceylon ltd over a period of 10 years from 1997 to 2006. Findings reveal that, there is a positive relationship between firm size and profitability in Commercial Bank of Ceylon ltd, but there is no relationship between firm size and profitability in Bank of Ceylon.

According to Sharma (2002) studied the financial performance of Cement Industry in India. Ten cement companies were elected for the purpose of analysis. Financial analysis of the selected companies was done through various ratios such as profit margin ratio, return on capital employed, earning power ratio, capital gearing ratio, and assets turnover ratio. It was recommended that cement companies should tighten their debt collection efforts and should reduce the funds tied up in receivables. Ghosh & Maji (2004) assessed the efficiency of working capital management of Indian cement companies during 1992-93 to 2001-02. To measure the efficiency of working capital management, three index values- performance index, utilization index, and overall efficiency index were calculated. It was found from the study that Indian cement Industry did not perform remarkably well during the study period.

Luther (2007) conducted the liquidity, profitability and risk analysis of Madras Cement Ltd. He suggested in his study that firm should take into consideration the short term liquidity also along with long-term investment decisions as if the liquidity remains continuously, it can affect the profitability and in long run it can endanger the solvency of the firm especially during the time of financial distress.

A study of the research literature and results from previous researches ended in the formulation of the following hypotheses for this study.

**Hypotheses 01 –**

Ho: The current ratio position of the listed food, beverage and tobacco companies in CSE does not differ significantly.

$H_1$: The current ratio position of the listed food, beverage and tobacco companies in CSE differ significantly

**Hypotheses 02** – Ho: The quick ratio position of the listed food, beverage and tobacco companies in CSE does not differ significantly. $H_1$: The quick ratio position of the listed food, beverage and tobacco companies in CSE differ significantly.

**Hypotheses 03** - $H_1$: liquidity is significantly correlated with profitability.

**Hypotheses 04** - $H_1$: profitability is significantly correlated with combined risk.

**Hypotheses 05** - $H_1$: liquidity is significantly impact on profitability.

**Hypotheses 06** - $H_1$: profitability is significantly impact on combined risk.

## Material and Methods

### Research Design

This research is descriptive studies. The emphasis here is on studying a situation or a problem in order to explain the relationship between variables.

### Sampling techniques

The scope of the study is listed food, beverage & tobacco companies in Sri Lanka. Twenty two companies are listed under food, beverage & tobacco sectors on CSE. Hence, out of twenty two only six companies nearly 27% were selected randomly for the study purpose.

### Period of the Study

The period of the study was six years from 2006/2007 to 2011/2012 financial year.

### Data Sources

In order to meet the objectives and hypotheses of the study, data were collected from secondary sources mainly from financial report of the selected companies, which were published by CSE.

### Reliability and Validity of the study

Secondary data for the study were drawn from audited accounts (i.e., income statement and balance sheet) of the concerned companies as fairly accurate and reliable. Therefore, these data may be considered

reliable for the study. Necessary checking and cross checking were done while scanning information and data from the secondary sources. All these efforts were made in order to generate validity data for the present study. Hence, researcher satisfied content validity.

### Mode of Analysis

In the present study we analyzed the collected data by descriptive statistics (i.e., means, maximum, minimum and standard deviation) and inferential statistics (i.e correlation and regression). The powerful indices, most commonly used, are ratio of current ratio (CA), quick ratio (QR) for liquidity, EPS, ROA for profitability and DCL for combined risk. A well known statistical package like 'Statistical Package for Social Sciences' (SPSS) 16.0 Version was used in order to analyze the data.

**Profitability = $b_0$ + $b_1$*CA + $b_2$*QR**    (1)
**Combined risk = $b_0$ + $b_1$*EPS + $b_2$*ROA**   (2)

## Results and Discussion

### Table 1-Descriptive Statistics of sample companies

|  | N | Min | Max | Mean | SD |
|---|---|---|---|---|---|
| Current Ratio | 36 | .51 | 2.67 | 1.2542 | .57246 |
| Quick Ratio | 36 | .19 | 1.72 | .8344 | .50319 |
| EPS | 36 | - 7.22 | 31.94 | 6.0275 | 7.79924 |
| ROA | 36 | - 28.10 | 39.47 | 9.4717 | 12.00945 |
| DCL | 36 | .09 | 6.31 | 2.4872 | 1.53666 |
| Valid N (listwise) | 36 |  |  |  |  |

The table 1 shows the values of minimum, maximum, mean and standard deviation of independent and dependent variables. The criteria used for measuring profitability including EPS and ROA averaged 6.02 and 9.47 respectively. Furthermore, the mean values of current ratio and quick ratio were 1.25 and 0.83 respectively. This indicates average of current and quick ratio are below the expected standards.ROA has high mean value of 9.47 than other variables. It has high maximum value of 39.47 and

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high standard deviation 12.00 at the same time
according to the above table quick ratio has low
maximum value and low mean value too than other
variables. The maximum and minimum values for each
performance measures indicate that the performance
varies substantially among companies.

**Hypotheses 01**

$H_0$: The current ratio position of the listed food,
beverage & tobacco companies in CSE does not differ
significantly.

$H_1$: The current ratio position of the listed food,
beverage & tobacco companies in CSE differs
significantly

**Table 2-One way analysis of ANOVA to
current ratio for sample companies**

|  | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 2315.493 | 33 | 70.166 | .274 | .963 |
| Within Groups | 512.589 | 2 | 256.295 |  |  |
| Total | 2828.082 | 35 |  |  |  |

The P- value is 0.963 which is greater than the
level so we fail to reject null hypothesis. Hence, it is
concluded that the current ratio position of the listed
food, beverage and tobacco companies in CSE does not
differ significantly.

**Hypotheses 02**

Ho: The quick ratio position of the listed food,
beverage & tobacco companies on CSE does not differ
significantly.

$H_1$: The quick ratio position of the listed food,
beverage & tobacco companies in CSE differs
significantly

**Table 3:  One way analysis of ANOVA to
quick ratio for sample companies**

|  | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 1951.441 | 29 | 67.291 | .461 | .925 |
| Within Groups | 876.641 | 6 | 146.107 |  |  |
| Total | 2828.082 | 35 |  |  |  |

The P- value is 0.925, which is greater than 0.05
so we fail to reject null hypothesis. Hence, it is
concluded that the quick ratio position of the listed
food, beverage and tobacco companies in CSE does not
differ significantly.

**Table 4: Correlations coefficient of sample
companies**

|  | liquidity | profitability | DCL |
|---|---|---|---|
| Liquidity Pearson Correlation | 1 | .380[*] | .382[*] |
| Sig(2 tailed) |  | .022 | .022 |
| N | 36 | 36 | 36 |
| Profitability Pearson Correlation | .380[*] | 1 | .212 |
| Sig(2 tailed) | .022 |  | .214 |
| N | 36 | 36 | 36 |
| DCL Pearson Correlation | .382[*] | .212 | 1 |
| Sig(2 tailed) | .022 | .214 |  |
| N | 36 | 36 | 36 |

*. Correlation is significant at the 0.05 level (2-tailed).

**Hypotheses 03- $H_1$**: liquidity is significantly
correlated with profitability

The table 4 indicates the relationship between the
various independent and dependent variables used in
the study.  As it is observed in the table, The R values
were found to be moderate positive relationship
between profitability and liquidity variables as
measured by current ratio, and quick ratio. Which
point out that the liquidity can positively affected the
profitability. The correlation is 0.380. As per the
'Significant' test results, it is clear that the correlation
is significant at the 0.05 level (2-tailed) of sample
companies on CSE. Therefore, hypothesis is accepted.
Hence, liquidity is significantly correlated with
profitability.

**Hypotheses 04 – $H_1$**: profitability is significantly
correlated with combined risk

Table 6 specifies that the correlation between the
profitability and risk is weak positive correlation which
point out that the profitability can positively affected
the risk. As per the 'Significant' test results, it is clear
that the correlation is insignificant at the 0.05 level (2-

tailed) of sample companies on CSE. Therefore, hypothesis is rejected. Hence, there exists insignificant relationship between profitability and risk

**Hypotheses 05** - $H_1$: liquidity is significantly impact on profitability
**Profitability = -0.664 +8.174*CA – 2.203*QR**

### Table 5: Model Summary of Regression of sample companies

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .430[a] | .185 | .135 | 8.35892 |

a. Predictors: (Constant), Quick Ratio(QR), Current Ratio(CR)

Correlation of current ration and quick ratio with profitability is moderate positive correlation. When we consider the Coefficient of determination ($R^2$) between overall current ratio and quick ratio with profitability is 0.185. This shows 18.5% variance in profitability is attributed by current ratio and quick ratio. Remaining 81.5% variance with profitability is attributed to other factors.

### Table 6: ANOVA[b]

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| 1 Regression | 522.321 | 2 | 261.161 | 3.738 | .034[a] |
| Residual | 2305.761 | 33 | 69.872 | | |
| Total | 2828.08 | 35 | | | |

a. Predictors: (Constant), Quick Ratio, Current Ratio

b. Dependent Variable: profitability

If Significant ≤ 0.05 then the model is significant at 95%. Sig-F is 0.034 which is less than 0.05 so we can accept our model fit for the data .Hence profitability can be explained by current ratio and quick ratio. The hypotheses which stated that liquidity is significantly impact on profitability was accepted at R= 0.43, $R^2$ = 0.18, P ≤ 0.05.This implies that there is liquidity is significantly impact on profitability.

**Hypotheses 06** - $H_1$: profitability is significantly impact on combined risk
**Combined risk = 2.202 +0.028*EPS – 0.012*ROA**

### Table 7: Model Summary of Regression of sample companiesModel

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .216[a] | .047 | -.011 | 1.54503 |

a. Predictors: (Constant), ROA, EPS

Table 7 indicates that correlation of EPS and ROA with combined risk is weak positive correlation. When we consider the Coefficient of determination ($R^2$) between overall EPS and ROA with combined risk is 0.047. This shows 4.7% variance in profitability is attributed by EPS and ROA. Remaining 95.3% variance with combined risk is attributed to other factors

### Table 8: ANOVA[b]

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| 1 Regression | 3.872 | 2 | 1.936 | .811 | .453[a] |
| Residual | 78.775 | 33 | 2.387 | | |
| Total | 82.647 | 35 | | | |

a. Predictors: (Constant), ROA, EPS

b. Dependent Variable: DCL

Table 8,  If Significant ≤ 0.05 then the model is significant at 95%. Sig-F is 0.453 which is greater than 0.05 so we can conclude our model not fit for the data. Consequence combined risk cannot be explained by return on assets and earnings per share. The hypotheses which stated that profitability is significantly impact on combined risk was rejected at R = 0.21, $R^2$ = 0.047, P ≥ 0.05. This implies that there is insignificant impact on combined risk.

## Conclusion

Under considerations of liquidity position of the listed food, beverage & tobacco companies were averagely below when compared to the standard. And also it is concluded that the current ratio and quick ratio position of the listed food, beverage and tobacco companies on CSE does not differ significantly. The correlation between liquidity and profitability is

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moderate positive correlation and liquidity is significantly impact on profitability. It shows that liquidity is positively affecting the profitability of sample companies. But profitability is insignificant impact on combined risk. The correlation between profitability and risk is found weak positive correlation.

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