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Analysis of Liquidity, Profitability and Risk: A Case study of Ranbaxy Laboratories Ltd.

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Abstract

Liquidity, profitability and risk are very important to determine the financial condition and performance of a firm. Liquidity implies a firm's ability to pay debts in the short run. The obligation may be due to routine operations or payment of financial charges. Profitability measure the efficiency of the firm's activities and its ability to generate profits. A sound liquidity leads to reduce the possibility of default risk in the future. Therefore a firm must attain a level of adequate liquidity at a minimum risk so as to achieve maximum profitability. This paper makes an attempt to provide an insight into the conceptual side of Liquidity, profitability and risk of Ranbaxy Laboratories Limited over10 year's period (i.e. from 2003 to 2012).

Keywords:

Liquidity, Profitability, Risk Factor, Trade-off

Introduction

Liquidity refers to the ability of a concern to meet its current obligations as and when these become due. The short-term obligations are met by realising amounts from current assets. The current assets should either be liquid or near liquidity. These should be convertible into cash for paying obligation of short term nature. The sufficiency or insufficiency of current assets should be assessed by comparing them with short term liabilities. If current assets can pay off current liabilities, then liquidity position will be suitable. On the other hand, if current liabilities may not easily meet out of current assets then liquidity position will be not satisfactory.

Profit earning is considered essential for the survival of the business. A business needs profit not only for its existence but also for expansion and diversification. Profits are, thus a useful measure of overall efficiency of a business. Profits to the management are the test of efficiency and a measurement of worth to owners. Usually, it is difficult task to trade off between the liquidity and profitability, as the liquidity and profitability goals are contradictory to each other. Thus, firms with high liquidity may have low risk and then low profitability. On the other hand firm that has low liquidity may face high risk results to higher return.

Company Snapshot

Ranbaxy Laboratories Limited (Ranbaxy) is a research based international pharmaceutical company serving customers in over 150 countries. The company is engaged in the business of providing high quality, affordable medicines trusted by healthcare professionals and patients across geographies. The company is a member of the Daiichi Sankyo Group. Daiichi Sankyo is a leading global pharma innovator, headquartered in Tokyo, Japan. The company cover all the top 25 pharmaceutical markets of the world and have a robust presence across both developed and emerging markets. The company has a portfolio of 16 manufacturing facilities are located spared over 8 countries. During the year 2011, the company made significant progress with global sales of over 2 Billion US dollars and becoming the first pharmaceutical company of Indian origin to cross this landmark. The study is being done with the following objectives:-

1. To analyze the short-term financial position through liquidity analysis.
2. To examine the profitability of the company over the study period.
3. To examine the association between liquidity and risk.
4. To test the correlation between profitability and risk.

Hypothesis of the Study

The above stated objectives are to be achieved by testing the following hypothesis:

1. There is negative association between liquidity and risk.
2. Profitability and risk of the firm are negatively correlated.

Experimental Details

The study is concerned with the ten years data of Ranbaxy Laboratories Ltd. for a period of (2003-2012). The data is secondary nature and is obtained from the published annual report of Ranbaxy Laboratories Ltd. The collected data has been analyzed through different liquidity and profitability ratios and drawing out the risk factor. Further 't' test has been applied to test the hypothesis and draw conclusion.

Analysis and Discussion

Section- I: Liquidity Position of Ranbaxy Laboratories Ltd.

To measure the liquidity level of the company three basic ratios was chosen, viz. Current Ratio, Liquid Ratio and Absolute Liquid Ratio. These values are also found on the balance sheet on the annual reports.

Current ratio: The current ratio is also called the working capital ratio, as working capital is the difference between current assets and current liabilities. This ratio measures the ability of a company to pay its current obligations using current assets. The ratio may be expressed as follows:

Current Ratio = Current Assets/ Current Liabilities

Table 1: Current Ratio (in Rs. Cr.)

Year (1)	Current Assets (2)	Current Liabilities (3)	Current Ratio (4) = (2 ÷3)
Dec '03	1,205.05	728.24	1.654
Dec '04	1,718.17	1,011.53	1.698
Dec '05	1,728.03	983.57	1.756
Dec '06	1,995.72	985.57	2.024
Dec '07	1,928.36	1,177.35	1.637
Dec '08	2,272.92	3,840.11	0.591
Dec '09	2,790.69	3,082.89	0.905
Dec '10	2,804.98	2,491.08	1.126
Dec '11	5,412.08	5,157.68	1.049
Dec '12	6,002.50	3,227.24	1.859
Source: Complied from the Annua l Report of Ranbaxy Laboratories Ltd.			

• **Liquid ratio:** The Liquid ratio is also called the quick ratio. Liquid assets are defined as cash, marketable securities, and accounts receivable and notes receivable, net of the allowances for doubtful accounts. These assets are considered to be very liquid and therefore, available for immediate use to pay obligations. The ratio may be expressed as follows:

iquid Ratio = Liquid Assets/ Current Liabilities

Table 2: Liquid Ratio (in Rs. Cr.)

Year (1)	Liquid Assets (2)	Current Liabilities (3)	Liquid Ratio (4) = (2 ÷3)
Dec '03	500.32	728.24	0.687
Dec '04	821.83	1,011.53	0.812
Dec '05	837.1	983.57	0.851
Dec '06	1040.81	985.57	1.056
Dec '07	952.29	1,177.35	0.808
Dec '08	1074.4	3,840.11	0.279
Dec '09	1560.21	3,082.89	0.506
Dec '10	1315.07	2,491.08	0.527
Dec '11	3756.85	5,157.68	0.728
Dec '12	4,270.66	3,227.24	1.323
Source: Complied from the Annual Report of Ranbaxy Laboratories Ltd.			

• **Absolute Liquid Ratio:** This ratio is the most rigorous test of a firm's liquidity position. It is a slight variation of liquid ratio. This is the ratio of cash items to current liabilities. This ratio measures the instant capacity of the firm to meet its liquid liabilities. The ratio may be expressed as follows:

Absolute Liquid Ratio = (Cash + Bank + Marketable Securities) / Current Liabilities

Table 3: Absolute Liquid Ratio (in Rs. Cr.)			
Year (1)	Absolute Liquid Assets (2)	Current Liabilities (3)	Absolute Liquid Ratio (4) = (2 ÷3)
Dec '03	17.38	728.24	0.023
Dec '04	37.14	1,011.53	0.036
Dec '05	30.48	983.57	0.030
Dec '06	27.06	985.57	0.027
Dec '07	69.38	1,177.35	0.058
Dec '08	49.86	3,840.11	0.012
Dec '09	25.56	3,082.89	0.008
Dec '10	22.44	2,491.08	0.009
Dec '11	66.9	5,157.68	0.012
Dec '12	2,834.77	3,227.24	0.878
Source: Complied from the Annual Report of Ranbaxy Laboratories Ltd.			

The ratios are ranked in the order of their influence on liquidity. The higher the ratio; the greater is the liquidity. Further, the ultimate rank has been considered from the total of the ranks of ratios. The ultimate ranking has been completed on the principle that the lower the aggregate of the individual ranks, the more profitable is the liquidity position and vice versa.

Table 4: Consolidated Liquidity Position								
	Current Ratio		Liquid Ratio		Absolute Liquid Ratio			Ultimate
Year	Ratio in times	Rank	Ratio in times	Rank	Ratio in times	Rank	Total	Rank (R_1)
Dec '03	1.654	5	0.687	7	0.023	6	18	6
Dec '04	1.698	4	0.812	4	0.036	3	11	4
Dec '05	1.756	3	0.851	3	0.030	4	10	3
Dec '06	2.024	1	1.056	2	0.027	5	8	2
Dec '07	1.637	6	0.808	5	0.058	2	13	5
Dec '08	0.591	10	0.279	10	0.012	7.5	27.5	9
Dec '09	0.905	9	0.506	9	0.008	10	28	10
Dec '10	1.126	7	0.527	8	0.009	9	24	8
Dec '11	1.049	8	0.728	6	0.012	7.5	21.5	7
Dec '12	1.859	2	1.323	1	0.878	1	4	1
Source: Annual Report of Ranbaxy Laboratories Ltd.								

It can be noted from the Table No.4 that the current ratio in the year 2006 is the highest at 2.024 times. The average current ratio during the study period was 1.424, which is lesser than the rule of thumb 2:1 but it can vary from firm to firm. The least value of the current ratio is 0.591 in the year 2008. Liquid ratio ranged between a maximum of 1.323 in 2012 and minimum of 0.279 in 2008. The average liquid ratio during the study period was 0.757 which is also less then less then the rule of thumb 1: 1. The absolute ratio was highest in the year 2012 at 0.878 and was the lowest in the year 2009 at 0.008. The average absolute ratio during the study period was 0.109, which is less than the rule of thumb 0.5: 1. However, the ratio is lower than rule of thumb in most of the years. It indicates that the firm is facing an acute liquidity crisis. Further, the ultimate rank denotes that in the year 2012 the company enjoyed the highest liquidity and poorest liquidity was recorded in 2009. Moreover the immediate debt paying capacity of the said firm is not satisfactory.

Section- II: Profitability Position of Ranbaxy Laboratories Ltd.

To measure the Profitability level of the company three basic return ratios was chosen, viz. Return on Assets, Return on Capital Employed and Return on Equity. These values are also found on the balance sheet on the annual reports.

• Return on Assets (ROA):

The Return on Assets ratio is an important profitability ratio because it measures the efficiency with which the company is managing its investment in assets and using them to generate profit. It measures the amount of profit earned relative to the firm's level of investment in total assets. Net Income is taken from the income statement and total assets are taken from the balance sheet. The higher percentage implies the better, because that means the company is doing a good job using its assets to generate sales.

The return on assets is defined as:

ROA = Earnings before Interest and Tax (EBIT)/ Total Assets ×100

Table 5: Return on Assets [ROA] (in Rs. Cr.)			
Year (1)	EBIT (2)	Total Assets (3)	ROA (4) = (2 ÷3)×100
Dec '03	962.27	2,356.03	40.842
Dec '04	615.58	2,645.39	23.269
Dec '05	206.36	3,407.11	6.056
Dec '06	496.87	5,528.61	8.987
Dec '07	846.99	6,041.42	14.019
Dec '08	-1485.94	7,442.15	-19.966
Dec '09	990.1	7,482.99	13.231
Dec '10	1605.13	9,393.11	17.088
Dec '11	-2981.24	6,258.36	-47.636
Dec '12	505.01	6,685.68	7.553
Source: Complied from the Annual Report of Ranbaxy Laboratories Ltd.			

• Return on Capital Employed (ROCE):

Return on capital employed is the indicator of the operational efficiency of the company. It measures how much investors are earning on the capital they have invested in that business. Return on Capital Employed is a performance measure and it indicates how much return is generated from Invested Capital.

The return on capital Employed is defined as:

ROCE = [Profit after Tax (PAT) + Interest] / Net Capital Employed ×100

Table 6: Return on Capital Employed [ROCE] (in Rs. Cr.)			
Year (1)	PAT + Interest(2)	Net Capital Employed (3)	R0CE (4) = (2 ÷3)×100
Dec '03	802.86	2,352.26	34.131
Dec '04	538.5	2,642.88	20.375
Dec '05	238.45	2,730.79	8.731
Dec '06	438.98	2,574.30	17.052
Dec '07	711.15	2,903.47	24.493
Dec '08	-898.97	3,878.84	-23.176
Dec '09	611.45	4,310.43	14.185
Dec '10	1202.92	5,327.79	22.578
Dec '11	-2982.61	2,154.42	-138.441
Dec '12	134.64	2,866.26	4.697
Source: Complied from the Annual Report of Ranbaxy Laboratories Ltd.			

• Return on Equity (ROE):

The Return on Equity ratio is perhaps the most important of all the financial ratios to investors in the company. It measures the return on the money the investors have put into the company. This is the ratio potential investors look at when deciding whether or not to invest in the company. Net income comes from the income statement and stockholder's equity comes from the balance sheet. In general the higher the percentage, the better, with some exceptions, as it shows that the company is doing a good job using the investors' money.

The return on net worth is defined as:

ROE = Net Profit / Share Holders Fund ×100

Table 7: Return on Equity [ROE] (in Rs. Cr.)			
Year (1)	Net Profit (2)	Share Holders Fund (3)	R0E (4) = (2 ÷3)×100
Dec '03	794.78	2,321.77	34.231
Dec '04	212.04	2,509.51	8.449
Dec '05	212.04	2,377.30	8.919
Dec '06	380.54	2,350.01	16.193
Dec '07	617.72	2,538.40	24.335
Dec '08	-1,044.80	3,716.77	-28.110
Dec '09	571.98	4,134.60	13.833
Dec '10	1,148.73	5,132.40	22.381
Dec '11	-3,052.05	1,924.83	-158.562
Dec '12	-162.34	1,922.08	-8.446
Source: Complied from the Annual Report of Ranbaxy Laboratories Ltd.			

The ratios are ranked in the order of their influence on Profitability. The higher the ratio; the greater is the Profitability. Further, the ultimate rank has been considered from the total of the ranks of ratios. The ultimate ranking has been prepared on the principle that the lower the aggregate of the individual ranks.

Table 8: Consolidated Profitability Position

Year	Return on Assets		Return on Capital Employed		Return on Equity		Total	Ultimate Rank (R_2)
	Ratio in %	Rank	Ratio in %	Rank	Ratio in %	Rank		
Dec '03	40.842	1	34.131	1	34.231	1	3	1
Dec '04	23.269	2	20.375	4	8.449	7	13	4
Dec '05	6.056	8	8.731	7	8.919	6	21	7
Dec '06	8.987	6	17.052	5	16.193	5	16	6
Dec '07	14.019	4	24.493	2	24.335	2	8	2
Dec '08	-19.966	9	-23.176	9	-28.110	9	27	8
Dec '09	13.231	5	14.185	6	13.833	4	15	5
Dec '10	17.088	3	22.578	3	22.381	3	9	3
Dec '11	-47.636	10	-138.441	10	-158.562	10	30	9
Dec '12	7.553	7	4.697	8	-8.446	8	23	10

Source: Annual Report of Ranbaxy Laboratories Ltd.

The Table no.8 exhibits the profitability position of the company by using three basic ratios of profitability.

The above mentioned table indicates the relationship between the various profitability ratios used in the study. The ROA were found to be negative at -19.966% and -47.636% respectively during 2008 and 2011. The highest return on assets (ROA) was recorded during the year 2003 at 40.842%.Similarly a return of 34.131% for the invested capital (ROCE) during 2003 indicates that the company had a good profitability position at the initial period of the study but it showed a fluctuating in trend afterwards with a ranged between a minimum of -138.441% to maximum of 34.131%. During 2008 and 2011, a negative value of ROCE was recorded at -23.176% and -138.441% respectively. The highest return on equity (ROE) was recorded at 34.231% during 2003 and that the ratio is at negative during the year 2011. Return on equity showed a mixed performance over the entire study period. It is also noticed from the Table no.8 that all three profitability ratios showed a negative return during 2008 and 2011. An apparent observation is that during 2008 and 2011 the Company had to pick up some exceptional items of charges which weighed down the reportable profit. These are largely considered to market charges and not realized loss. However, in general view the overall profitability position is more or less satisfactory.

Section- III: Trade-off between Liquidity, Profitability and Risk of Ranbaxy Laboratories Ltd.

Profitability varies inversely with liquidity; increased liquidity can be achieved at the cost of profitability. Again profitability and risk have same direction; in order to have greater profitability, we need to take greater risk. Trade off between risk and profitability can be made by calculating the risk factor. The analysis can be done through which it can be said about the policies adopted while supervision the working capital of the company.

Risk factor can be calculated through the following formula:

$$\frac{(E_j + L_j) - A_j}{C_j} \quad (R_k) =$$

Where,

R_k = Risk Factor, **E_j** = Equity + Retained Earnings, **L_j**= Long term Loans, **A_j** = Fixed Assets and

C_j = Current Assets.

The above formula helps to know about the financing of the current assets through long term funds after fixed assets are financed in full. Based on the above formula, following inference can be drawn:

Value of **R_k** is Zero or less would mean that the firm is using the aggressive policy and normally the profitability would be high. In case of aggressive policy, the firm opt for a lower level of working capital, thereby investing in current assets at lower proportion to total assets. When a firm adopts this policy, the profitability is high, but at higher risk of liquidity.

Value of **R_k** is 1or very close to 1 would mean that the firm is using the conservative policy and normally the profitability would be low. In case of conservative policy, the firm adopts a conservative approach of having high proportion of working capital. The profitability is relatively low as the return on current assets is normally less. However, ensuring good liquidity as the risk meeting current obligations is reduced.

Table no.9 depicted the data relating to the risk factor, its ranking order, and the type of policy adopted by the company in various periods.

Table 9: Risk Factor in Ranking Order (in Rs. Cr.)						
Year	Equity + Retained Earnings (Ej)	Long-Term Loans (Lj)	Fixed Assets (Aj)	Current Assets (Cj)	Risk Factor	Rank (R_k)
Dec '03	2,321.77	30.49	706.52	1,205.05	1.365	10
Dec '04	2,509.51	133.37	877.58	1,718.17	1.027	7
Dec '05	2,377.30	353.49	1,199.97	1,728.03	0.885	5
Dec '06	2,350.01	224.29	1,434.03	1,995.72	0.571	3
Dec '07	2,538.40	365.07	1,469.52	1,928.36	0.743	4
Dec '08	3,716.77	162.07	1,456.68	2,272.92	1.065	8
Dec '09	4,134.60	175.83	1,593.40	2,790.69	0.973	6
Dec '10	5,132.40	195.39	1,712.11	2,804.98	1.289	9
Dec '11	1,924.83	229.59	1,872.00	5,412.08	0.052	1
Dec '12	1,922.08	944.18	1,993.53	6,002.50	0.145	2
Source: Annual Report of Ranbaxy Laboratories Ltd.						

The above mentioned table indicates that the R_k values were found to be closed to1 and this parameter clearly reveals a low level of managerial efficiency and profitability. It indicates that the firm is using the conservative policy.

Table 10: Rank Correlation between Liquidity, Profitability and Risk Factor			
Year	Rank (R_1)	Rank (R_2)	Rank (R_k)
Dec '03	6	1	10
Dec '04	4	4	7
Dec '05	3	7	5
Dec '06	2	6	3
Dec '07	5	2	4
Dec '08	9	8	8
Dec '09	10	5	6
Dec '10	8	3	9
Dec '11	7	9	1
Dec '12	1	10	2
'r'	0.479	-0.648	
't' value of 'r'	1.538	-3.145	
Note: table value of t at (n-2) degree of freedom at 0.05 level of significance is 2.306			
Source: Calculations are done using MS Excel.			

The hypotheses drawn are tested by using student's t test for confirming the association between the risk, liquidity and profitability. Table no.10 exhibits that there is low degree of association (0.479) between liquidity and risk, further this association is tested. The null hypothesis stated that there is negative association between liquidity and risk.

Calculated Value of 't' = 1.538 and Critical Value of 't' = 2.306.

As the calculated value is less than the critical value, thus, the null hypothesis is accepted. Thus it can be said that there is no significant association between liquidity and risk of the company.

The profitability and risk are negatively associated (-0.648) but again, it has to be tested using't' test.

The null hypothesis states that profitability and risk of the firm are negatively correlated.

Calculated Value of 't' = - 3.145 and Critical Value of 't' = 2.306.

As the calculated value is less than the critical value, thus, the null hypothesis is accepted. Hence it can be said that the profitability and risk are negatively correlated.

Conclusion:

1) The ranking of liquidity ratios denotes that during the year 2012 the company enjoyed the highest liquidity and the poorest liquidity was recorded in 2009.

2) The overall profitability position showed a mixed performance over the study period. However, the highest profitability was recorded during the year 2003 and the poorest profitability was recorded in 2012.

3) It is observed that there is a low degree of positive association (0.479) between liquidity and risk.

4) It is also observed that there is a high degree of negative association between profitability and risk. Further, the profitability and risk of the firm are also negatively correlated.

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