"Financial Analysis of statements with Altman4's Z-score for Schlumberger"

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Abstract

Every finance manager is involved in financial decision-making and financial planning. In order to take right decision at right time, he should be equipped with sufficient past and present information about the firm and its operations, how it is changing overtime. Much of this information that is used by a finance manager is known as financial information and is derived from the basic financial statements. An understanding of the basic financial statements and the analysis of these statements is a necessary step in the corporate financial management. This research focuses attention on what these financial statements are and how they can be used for financial analysis of the firm. It may be noted however, that the financial statements have been discussed here only as a source of information.

Keywords: We would like to encourage you to list your keywords in this section

1. Financial Statements

The financial statements are the product of the financial accounting process. The financial statements are nothing but the financial information presented in concise and capsule form, and the financial information is the information relating to the financial position of any firm. The firm prepares the financial statements –

a. To communicate different parties about the financial position of the firm. (These other parties who are the user of financial information include the shareholders, creditors, banks, financial institutions, financial analysts, investors etc.)

b. To analyse the operations and performance of the firm for further planning.

The basic source which provides the financial information is the annual report of the company, which is presented by the company to its shareholders at the Annual General Meeting. Clause 43A of the Listing Agreement (with the stock exchange) requires every listed company to publish unaudited quarterly results. However, it does not mean that the non-corporate firms do not prepare the financial statements. Every firm, big or small, prepares the following financial statements.

a. The Balance Sheet

b. The Income Statement

c. Statement of Appropriation of Profit

d. Cash flow Statement

2. Balance Sheet (BS)

The BS is regarded as the most significant and basic financial statement of any firm. The BS is prepared by a firm to present a summary of financial position at a given point of time, usually at the end of a financial year. It shows the state of affairs of the firm at a point of time. It presents the assets of the firm (i.e. the resources of the firm), the liabilities of the firm (i.e. obligations of the firm towards outsiders) and the contribution of the owners of the firm. The BS, in fact, balances the assets of the firm against its financing (which can be debt and owners funds) i.e. the total value of the assets must be equal to the total claims against the firm.

Total Assets = Total Claims (Debt + Shareholders) = Liabilities + Shareholders Equity

It may be noted that the BS depicts financial position at a particular point of time. It is like a financial snapshot at point of time, before and after which the position may be different.

Below table shows the Balance sheet of Schumberger for last 5 years. [1]

Table 1 Balance Sheet Statement of SLB

Assets	2013	2014	2015	2016	2017
Cash & Short Term Investments	8,370	7,501	13,034	9,257	5,089
Cash Only	3,472	3,130	2,793	2,929	1,799
Short-Term Investments	4,898	4,371	10,241	6,328	3,290
Cash & Short Term Investments Growth	-	-10.38%	73.76%	-28.98%	-45.03%
Cash & ST Investments / Total Assets	12.47%	11.21%	19.17%	11.87%	7.07%
Total Accounts Receivable	11,497	11,171	8,780	9,387	8,084
Accounts Receivables, Net	11,497	11,171	8,780	9,387	8,084
Accounts Receivables, Gross	11,881	11,446	9,113	9,784	8,325
Bad Debt/Doubtful Accounts	-384	-275	-333	-397	-241
Accounts Receivable Growth	-	-2.84%	-21.40%	6.91%	-13.88%
Accounts Receivable Turnover	3.94	4.35	4.04	2.96	3.77
Inventories	4,603	4,628	3,756	4,225	4,046
Finished Goods	1,803	1,689	1,278	1,895	1,697
Work in Progress	261	273	178	610	503
Raw Materials	2,539	2,666	2,300	1,720	1,846
Other Current Assets	1,755	1,394	1,342	1,058	1,278
Miscellaneous Current Assets	1,755	1,394	1,342	1,058	1,278
Total Current Assets	26,225	24,694	26,912	23,927	18,497
Net Property, Plant & Equipment	15,096	15,396	13,415	12,821	11,576

Property, Plant & Equipment - Gross	35,164	36,964	37,120	40,008	37,813
Buildings	3,534	3,733	3,960	4,849	5,122
Land & Improvements	394	445	425	479	428
Machinery & Equipment	29,332	31,937	31,885	33,834	32,160
Transportation Equipment	1,904	849	850	846	103
Accumulated Depreciation	20,068	21,568	23,705	27,187	26,237
Total Investments and Advances	3,680	5,088	5,558	3,939	5,584
LT Investment - Affiliate Companies	3,317	3,235	3,311	1,243	1,519
Other Long-Term Investments	363	1,853	2,247	2,696	4,065
Intangible Assets	20,082	20,934	21,200	35,918	35,199
Net Goodwill	14,706	15,487	15,605	24,990	25,118
Net Other Intangibles	5,376	5,447	5,595	10,928	10,081
Other Assets	2,017	792	920	1,351	1,131
Deferred Charges	270	127	149	125	-
Tangible Other Assets	1,747	665	771	1,226	1,131
Total Assets	67,100	66,904	68,005	77,956	71,987
Assets - Total - Growth	-	-0.29%	1.65%	14.63%	-7.66%
Asset Turnover	-	-	-	-	41.00%
Return On Average Assets	-	-	-	-	-2.01%

Liabilities & Shareholders' Equity	**2013**	**2014**	**2015**	**2016**	**2017**
ST Debt & Current Portion LT Debt	2,783	2,765	4,557	3,153	3,324
Short Term Debt	964	1,521	1,546	1,178	1,300
Current Portion of Long Term Debt	1,819	1,244	3,011	1,975	2,024
Accounts Payable	4,155	4,344	3,243	4,004	4,614
Accounts Payable Growth	-	4.55%	-25.35%	23.47%	15.23%
Income Tax Payable	1,490	1,647	1,203	1,188	1,223
Other Current Liabilities	5,097	5,420	5,118	6,714	6,121
Dividends Payable	415	518	634	702	699
Accrued Payroll	1,910	1,899	1,424	1,349	1,296
Miscellaneous Current Liabilities	2,772	3,003	3,060	4,663	4,126
Total Current Liabilities	13,525	14,176	14,121	15,059	15,282
Long-Term Debt	10,393	10,565	14,442	16,463	14,875
Long-Term Debt excl. Capitalized Leases	10,393	10,565	14,442	16,463	14,875
Non-Convertible Debt	10,393	10,565	14,442	16,463	14,875
Provision for Risks & Charges	670	1,501	1,434	1,495	1,082
Deferred Taxes	1,708	1,296	1,075	1,880	1,650
Deferred Taxes - Credit	1,708	1,296	1,075	1,880	1,650

Other Liabilities	1,169	1,317	1,028	1,530	1,837
Other Liabilities (excl. Deferred Income)	1,169	1,317	1,028	1,530	1,837
Total Liabilities	27,465	28,855	32,100	36,427	34,726
Total Liabilities / Total Assets	40.93%	43.13%	47.20%	46.73%	48.24%
Common Equity (Total)	39,469	37,850	35,633	41,078	36,842
Common Stock Par/Carry Value	12,192	12,495	12,693	12,801	12,975
Retained Earnings	37,966	41,333	40,870	36,470	32,190
Cumulative Translation Adjustment/Unrealized For. Exch. Gain	-1,068	-1,531	-2,053	-2,136	-2,139
Unrealized Gain/Loss Marketable Securities	176	10	-	21	13
Other Appropriated Reserves	-1,662	-2,685	-2,505	-2,528	-2,148
Treasury Stock	-8,135	-11,772	-13,372	-3,550	-4,049
Common Equity / Total Assets	0.59	0.57	0.52	0.53	0.51
Total Shareholders' Equity	39,469	37,850	35,633	41,078	36,842
Total Shareholders' Equity / Total Assets	0.59	0.57	0.52	0.53	0.51
Accumulated Minority Interest	166	199	272	451	419
Total Equity	39,635	38,049	35,905	41,529	37,261
Liabilities & Shareholders' Equity	67,100	66,904	68,005	77,956	71,987

3. Income Statement (IS)

The IS, also known as the Profit and Loss A/c or the statement of Earnings, summarizes the revenues and expense of the firm for an accounting period. It gives a detail of sources of income and expenses and thus it provides the summary of the operating results of the firm for a specific period. It matches the revenues with the costs that incurred in generating the revenues, and shows the difference between the two as the net profit made or net loss incurred during the period. The IS is a flow report as against the BS which is a stock report or a status report. The IS depicts the earning capacity of the firm in terms of the net profit. It helps understanding the performance of the firm during the period under consideration.

Below table shows the Income Statement of Schlumberger for last 5 years.

Table 2 Income Statement of SLB

Income Statement SLB					
All values in USD millions	**2013**	**2014**	**2015**	**2016**	**2017**
Sales/Revenue	45,266	48,580	35,475	27,810	30,440
Sales Growth	-	7.32%	-26.98%	-21.61%	9.46%
Cost of Goods Sold (COGS) incl. D&A	35,387	37,303	28,167	23,864	26,272
COGS excluding D&A	31,721	33,209	24,089	19,770	22,435
Depreciation & Amortization Expense	3,666	4,094	4,078	4,094	3,837
Depreciation	3,336	3,750	3,724	3,527	3,174
Amortization of Intangibles	330	344	354	567	663
COGS Growth	-	5.41%	-24.49%	-15.28%	10.09%
Gross Income	9,879	11,277	7,308	3,946	4,168
Gross Income Growth	-	14%	-35%	-46%	6%
Gross Profit Margin	21.82%	23.21%	20.60%	14.19%	13.69%
SG&A (Selling, General and Administrative) Expense	1,582	1,692	1,588	1,415	1,219
Research & Development	1,166	1,217	1,094	1,012	787
Other SG&A	416	475	494	403	432
SGA Growth	-	6.95%	-6.15%	-10.89%	-13.85%
EBIT	8,297	9,585	5,720	2,531	2,949
Unusual Expense	-585	1,950	2,793	4,097	3,725
Non-Operating Income/Expense	50	-	-	-	-
Non-Operating Interest Income	33	51	52	110	128
Equity in Affiliates (Pretax)	132	240	184	90	96
Interest Expense	406	287	282	539	631
Interest Expense Growth	-	-29.31%	-1.74%	91.13%	17.07%
Gross Interest Expense	406	287	282	539	631
Pretax Income	8,691	7,639	2,881	-1,905	-1,183
Pretax Income Growth	-	-12.10%	-62.29%	-166.12%	37.90%
Pretax Margin	-	-	-	-	-3.89%
Income Tax	1,848	1,928	746	-278	330
Income Tax - Current Domestic	742	769	102	-547	-113
Income Tax - Current Foreign	1,211	1,380	1,085	648	703
Income Tax - Deferred Domestic	-139	-209	-389	-328	-213
Income Tax - Deferred Foreign	34	-12	-52	-51	-47
Consolidated Net Income	6,843	5,711	2,135	-1,627	-1,513
Minority Interest Expense	42	68	63	60	-8

Net Income	6,801	5,643	2,072	-1,687	-1,505
Net Income Growth	-	-17.03%	-63.28%	-181.42%	10.79%
Net Margin	-	-	-	-	-4.94%
Extraordinaries & Discontinued Operations	-69	-205	-	-	-
Discontinued Operations	-69	-205	-	-	-
Net Income After Extraordinaries	6,870	5,848	2,072	-1,687	-1,505
Net Income Available to Common	6,732	5,438	2,072	-1,687	-1,505
EPS (Basic)	5.05	4.16	1.63	-1.24	-1.08
EPS (Basic) Growth	-	-17.62%	-60.82%	-176.07%	12.90%
Basic Shares Outstanding	1,323	1,295	1,267	1,357	1,388
EPS (Diluted)	5.05	4.16	1.63	-1.24	-1.08
EPS (Diluted) Growth	-	-17.68%	-60.91%	-176.50%	12.78%
Diluted Shares Outstanding	1,333	1,308	1,275	1,357	1,388
EBITDA	11,963	13,679	9,798	6,625	6,786
EBITDA Growth	-	14.34%	-28.37%	-32.38%	2.43%
EBITDA Margin	-	-	-	-	22.29%

4. Cash Flow Statement

A cash flow statement is one of the quarterly financial reports publicly traded companies are required to disclose to the U.S. Securities and Exchange Commission (SEC) and the public. The document provides aggregate data regarding all cash inflows a company receives from its ongoing operations and external investment sources, as well as all cash outflows that pay for business activities and investments during a given quarter.

4.1 Cash flow from Operations

The first set of cash flow transactions is from operational business activities. Cash flows from operations starts with net income and then reconciles all noncash items to cash items within business operations. For example, accounts receivable is a noncash account. If accounts receivables go up, it means sales are up, but no cash was received at the time of sale. The cash flow statement deducts receivables from net income because it is not cash. Also included in cash flows from operations are accounts payable, depreciation, amortization and numerous prepaid items booked as revenue or expenses but with no associated cash flow.

4.2 Cash flow from Investing

Cash flows from investing activities includes cash spent on property, plant and equipment. This is where analysts look to find changes in capital expenditures (CAPEX). While positive cash flows from investing activities is a good thing, investors prefer companies that generate cash flows primarily from business operations, not investing and financing activities.

4.3 Cash flow from Financing

Cash flows from financing is the last business activity detailed on the cash flow statement. The section provides an overview of cash used in business financing. Analysts use the cash flows from financing section to find the amount paid out in dividends or share buybacks. Cash obtained or paid back from capital fundraising efforts, such as equity or debt, is also listed.

Below table shows the Cash Flow Statement of Schumberger for last 5 years.

Table 3 Cash flow statement of SLB

Operating Activities	**2013**	**2014**	**2015**	**2016**	**2017**
Net Income before Extra-ordinaries	6,774	5,506	2,135	-1,627	-1,513
Net Income Growth	-	-18.72%	-61.22%	-176.21%	7.01%
Depreciation, Depletion & Amortization	3,666	4,094	4,078	4,094	3,837
Depreciation and Depletion	3,336	3,750	3,724	3,527	3,174
Amortization of Intangible Assets	330	344	354	567	663
Deferred Taxes & Investment Tax Credit	-105	-	-	-	-
Deferred Taxes	-105	-	-	-	-
Other Funds	-	2,159	2,868	4,040	4,022
Funds from Operations	10,335	11,759	9,081	6,507	6,346
Changes in Working Capital	-547	-564	-276	-246	-683
Receivables	-858	-187	2,176	1,098	-124
Inventories	188	-36	625	800	108
Accounts Payable	654	-36	-2,656	-1,680	-737
Income Taxes Payable	34	104	-699	-110	104
Other Assets/Liabilities	-565	-409	278	-354	-34
Net Operating Cash Flow	9,788	11,195	8,805	6,261	5,663
Net Operating Cash Flow Growth	-	14.37%	-21.35%	-28.89%	-9.55%
Net Operating Cash Flow / Sales	21.62%	23.04%	24.82%	22.51%	18.60%
Investing Activities					
All values USD Millions.	2,013	2,014	2,015	2,016	2,017
Capital Expenditures	-4,337	-4,297	-2,896	-2,685	-2,383
Capital Expenditures (Fixed Assets)	-3,943	-3,976	-2,410	-2,055	-2,107
Capital Expenditures (Other Assets)	-394	-321	-486	-630	-276
Capital Expenditures Growth	-	0.92%	32.60%	7.29%	11.25%
Capital Expenditures / Sales	-9.58%	-8.85%	-8.16%	-9.65%	-7.83%
Net Assets from Acquisitions	-610	-1,008	-443	-2,398	-847
Purchase/Sale of Investments	-648	-294	-6,801	4,513	1,668
Purchase of Investments	-648	-740	-6,801	-1,031	-1,609

Sale/Maturity of Investments	-	446	-	5,544	3,277
Other Uses	-630	-	-345	-54	-217
Other Sources	218	43	-	-	-
Net Investing Cash Flow	-6,007	-5,556	-10,485	-624	-1,779
Net Investing Cash Flow Growth	-	7.51%	-88.71%	94.05%	-185.10%
Net Investing Cash Flow / Sales	-13.27%	-11.44%	-29.56%	-2.24%	-5.84%
Financing Activities					
Cash Dividends Paid - Total	-1,608	-1,968	-2,419	-2,647	-2,778
Common Dividends	-1,608	-1,968	-2,419	-2,647	-2,778
Change in Capital Stock	-2,059	-3,853	-1,734	-363	-672
Repurchase of Common & Preferred Stk.	-2,596	-4,678	-2,182	-778	-969
Sale of Common & Preferred Stock	537	825	448	415	297
Other Proceeds from Sale of Stock	537	825	448	415	297
Issuance/Reduction of Debt, Net	1,450	-37	5,791	-2,377	-1,612
Change in Current Debt	37	552	-3	-387	-1,022
Change in Long-Term Debt	1,413	-589	5,794	-1,990	-590
Issuance of Long-Term Debt	4,554	2,289	9,565	3,640	2,371
Reduction in Long-Term Debt	-3,141	-2,878	-3,771	-5,630	-2,961
Other Funds	18	-38	-264	-41	29
Other Uses	-	-38	-264	-41	-
Other Sources	18	-	-	-	29
Net Financing Cash Flow	-2,199	-5,896	1,374	-5,428	-5,033
Net Financing Cash Flow Growth	-	-168.12%	123.30%	-495.05%	7.28%
Net Financing Cash Flow / Sales	-4.86%	-12.14%	3.87%	-19.52%	-16.53%
Exchange Rate Effect	-15	-85	-31	-73	19
Net Change in Cash	1,567	-342	-337	136	-1,130
Free Cash Flow	5,845	7,219	6,395	4,206	3,556
Free Cash Flow Growth	-	23.51%	-11.41%	-34.23%	-15.45%
Free Cash Flow Yield	-	-	-	-	0.83%

5. Analysis of Financial Statements (AFS)

AFS refers to the process of the critical examination of the financial information contained in the financial statements in order to understand and make decisions regarding the operations of the firm. The AFS is basically a study of the relationship among various financial facts and figures as given in a set of financial statements. The basic financial statements i.e., the BS and the IS contain a whole lot of historical data. The complex figures as given in these financial statements are dissected/broken up into simple and valuables elements and significant relationships are established between the elements of the same statement or different financial statements. This process of dissection, establishing relationships and interpretation thereof to understand the working and financial position of a firm is called the AFS.

Thus, AFS is the process of establishing and identifying the financial weaknesses and strength of the firm, it is indicative of two aspects of a firm i.e., the profitability and the financial position and it is what is known as the objectives of the AFS.

5.1 Objectives of the AFS

Broadly, the objective of the AFS is to understand the information contained in financial statements with a view to know the weaknesses and strength of the firm and to make a forecast about the future prospects of the firm and thereby enabling the financial analyst to take different decisions regarding the operation of the firm. The objectives of the AFS can be identified as:

a. To assess the present profitability and operating efficiency of the firm as a whole as well as for its different departments.

b. To find out the relative importance of different components of the financial position of the firm.

c. To identify the reasons for change in the profitability/financial position of the firm, and

d. To assess the short term as well as the long-term liquidity position of the firm.

5.2 Relationship between the IS and the BS

The BS and IS (including the P&L Appropriation A/c) are related to each other. The net profit figure as shown by the IS gives the amount of net increase in the shareholder's equity during the year. However, the Retained Earnings in the BS may not increase by the same amount, as there might be distribution of profit among the shareholders in the form of dividends. The IS is in fact the link between the two BSs prepared at the end of two consecutive accounting period.

Conceptually and operationally, the BS is the end of the accounting process and shows the stock of the financial position of the firm at the end of the accounting period. On the other hand, the IS shows the process of making profits and thus shows the reason for increase or decrease in the shareholder's equity as shown in the BS. The two statements are not separate but are inter-related. For the analysis of the performance of any firm and for its future profit planning, both the BS and the IS are required for a meaningful exercise.

6. Ratio Analysis

Financial statements have been examined in terms of absolute monetary value with an objective of understanding the financial position of the firm. The accounting information presented in financial statements can also be analysed in relative terms, known as "Financial Ratio".

The Ratio Analysis (RA) has emerged as the principle technique of the AFS. A ratio is a relationship expressed in mathematical terms between two individual or groups of figures connected with each other in some logical manner. The RA is based on the premise that a single accounting figure by itself may not communicate any meaningful information but when expressed as a relative to some other figure, it may definitely give some significant information. The relationship between two or more accounting figures/groups is called a Financial Ratio.

A financial ratio helps to summarize a large mass of financial data into a concise form and to make meaningful interpretation and conclusions about the performance and positions of a firm.

Financial ratios can be used to answer the following:

a. How liquid is the firm?

b. Is the firm generating adequate operating profit on the assets of the firm?

c. How the assets of the firm has been financed?

d. Are the shareholders earning/receiving adequate returns on their investment?

6.1 Steps in Ratio Analysis

i. Calculation of a ratio

ii. Comparing the ratio with some predetermined standard.

The standard ratio may be the past ratio of the same firm or industry's average ratio or a projected ratio or the ratio of the most successful firm in the Industry. In interpreting the ratio of a particular firm, the analyst cannot reach any fruitful conclusion unless the calculated ratio is compared with some predetermined standard. The importance of a correct standard is obvious as the conclusion is going to be based on the standard itself.

6.2 Type of Comparisons

The RA comprises of two steps i.e., the calculation and thereafter the comparison with some standard. The calculation part of a ratio merely involve the application of a formula to the given financial data to establish the mathematical relationship. The ratios can be compared in three different ways.

a. Cross-Section Analysis

b. Time-Series Analysis

c. Combined Analysis

6.3 Classification of Ratios

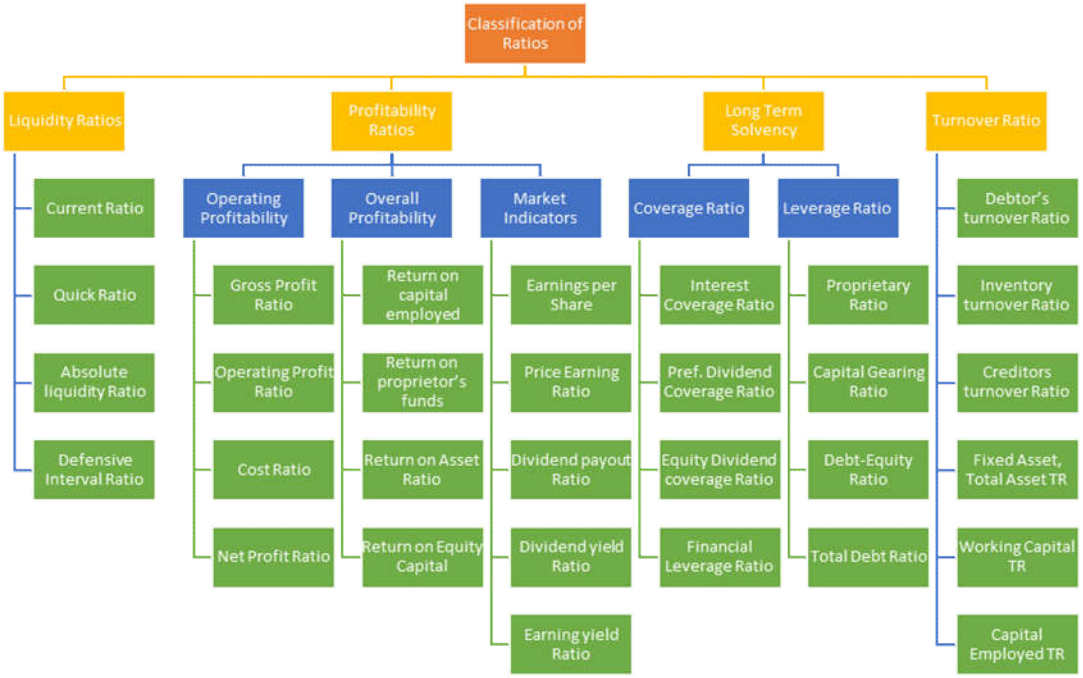

Figure 1 Detailed Classification of Ratios

7. Altman's Z score

The Altman Z-Score (named after Edward Altman, the New York University professor who devised it) is a statistical tool used to measure the likelihood that a company will go bankrupt.

Though Altman devised the Z-Score in the 1960s, the notion of trying to predict which companies would fail was far from new at that time. However, Altman added a statistical technique called multivariate analysis to the mix of traditional ratio-analysis techniques, and this allowed him to consider not only the effects of several ratios on the "predictiveness" of his bankruptcy model, but to consider how those ratios affected each other's usefulness in the model.

Altman developed the Z-Score after evaluating 66 companies, half of which had filed for bankruptcy between 1946 and 1965. He started out with 22 ratios classified into five categories (liquidity, profitability, leverage, solvency and activity) but eventually narrowed it down to five ratios.

7.1 How Altman's Z score works

Altman's Z-Score determines how likely a company is to fail. The formula does this by evaluating seven simple pieces of data, all of which should be available in the company's public disclosure.

X1 = Working Capital/Total Assets

X2 = Retained Earnings/Total Assets

X3 = Earnings before Interest and Tax/Total Assets

X4 = Market value of Equity/Book value of Debts

X5= Sales/Total Assets

(Market value of equity = Shares outstanding * Current Market price per share

Book value of debt = Notes payable + Current portion of LT debts + LT debts)

Z score = 1.2X1+1.4X2+3.3X3+0.6X4+0.999X5

Table 4 Z score Criterion

Financial Health Status of the company	Z Score
Safe	Above 2.99
Distress	Between 1.81 - 2.99
Default	Below 1.81

The first ratio (X1) is a good indicator of a firm's ability to make good on what it owes in the next few months.

The second ratio (X2) is a good indicator of how in debt the company is and whether it has a history of profitability.

The third ratio (X3) is a measure of efficiency in that it indicates how many cents the company generates in earnings for every dollar of assets it owns.

The fourth ratio (X4) is a fluid measure of the market's "confidence" in the company.

The fifth ratio (X5) is similar to the third ratio in that it measures the company's efficiency in delivering sales from its assets.

7.2 Schlumberger's Altman's Z score

Table 5 Schlumberger's Altman Z score YOY

Parameters	2013	2014	2015	2016	2017
X1	0.19	0.16	0.19	0.11	0.04
X2	0.57	0.62	0.60	0.47	0.45
X3	0.12	0.14	0.08	0.03	0.04
X4	9.21	10.93	5.98	5.68	5.83
X5	0.67	0.73	0.52	0.36	0.42
Z score	**7.62**	**8.81**	**5.44**	**4.65**	**4.73**

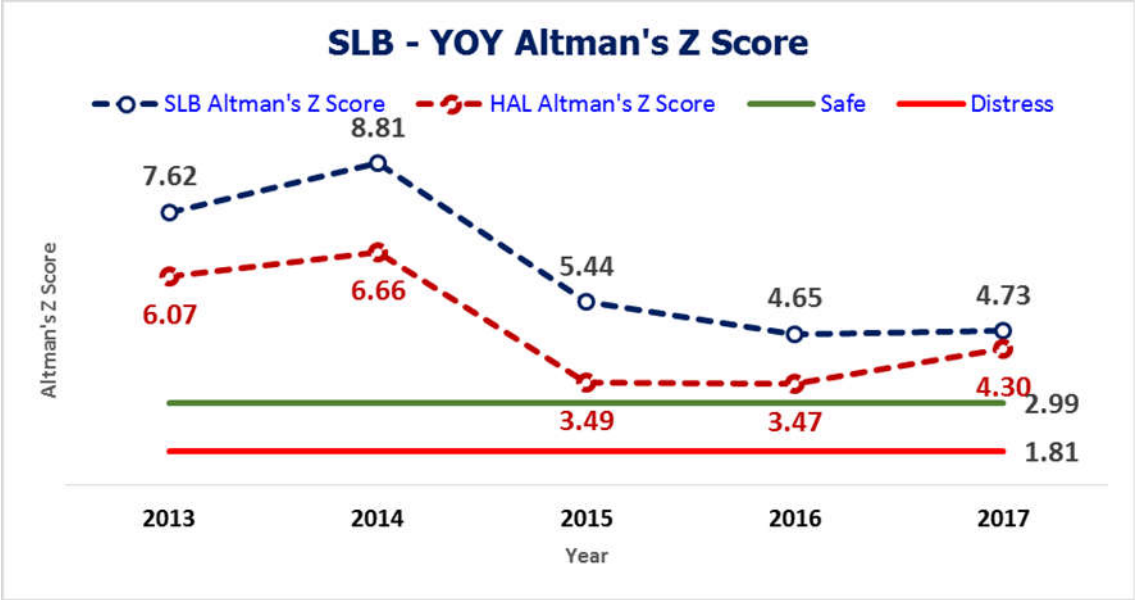

Figure 2 Comparison SLB Vs HAL Altman's Z score

7.3 Importance of Altman's Z score

The Z-Score is a commonly used metric with wide appeal, though it is just one of many credit scoring models in use today that essentially combine quantifiable financial indicators with a small number of variables in an attempt to predict whether a firm will fail.

Over time, however, the Z-Score has proved to be one of the most reliable predictors of bankruptcy so much so that analysts often equate certain Z-Scores with corresponding bond ratings. In fact, when Altman re-evaluated his methods by examining 86 distressed companies from 1969 to 1975 and then 110 bankrupt companies from 1976 to 1995 and later 120 bankrupt companies from 1996 to 1999, the Z-Score was between 82% and 94% accurate. The old "garbage in, garbage out" motto applies, however if the company financials are misleading or incorrect, the Z-Score will be, too.

It is important to remember that changes in a company's Z-Score are as important, if not more important, than the Z-Score itself. After all, knowing a company is heading down the wrong path is better than learning about it after the fact.

8. Schlumberger's Time-Series Ratio Analysis

After analysis of financial statements, it is beneficial to prepare YOY analysis with trend lines to conclude financial position of the company. It helps to draw financial references about firm's growth prospectus and market indicators.

8.1 Easy-to-access Dashboard for Ratio trend Analysis

Dashboard provides ease of understanding with YOY trends, which indicates the growth/decline scenario of particular area, related to firm's overall sustainability. Below figure shows, various slicers and type of ratios for easy selection and referencing, configured using MS excel application.

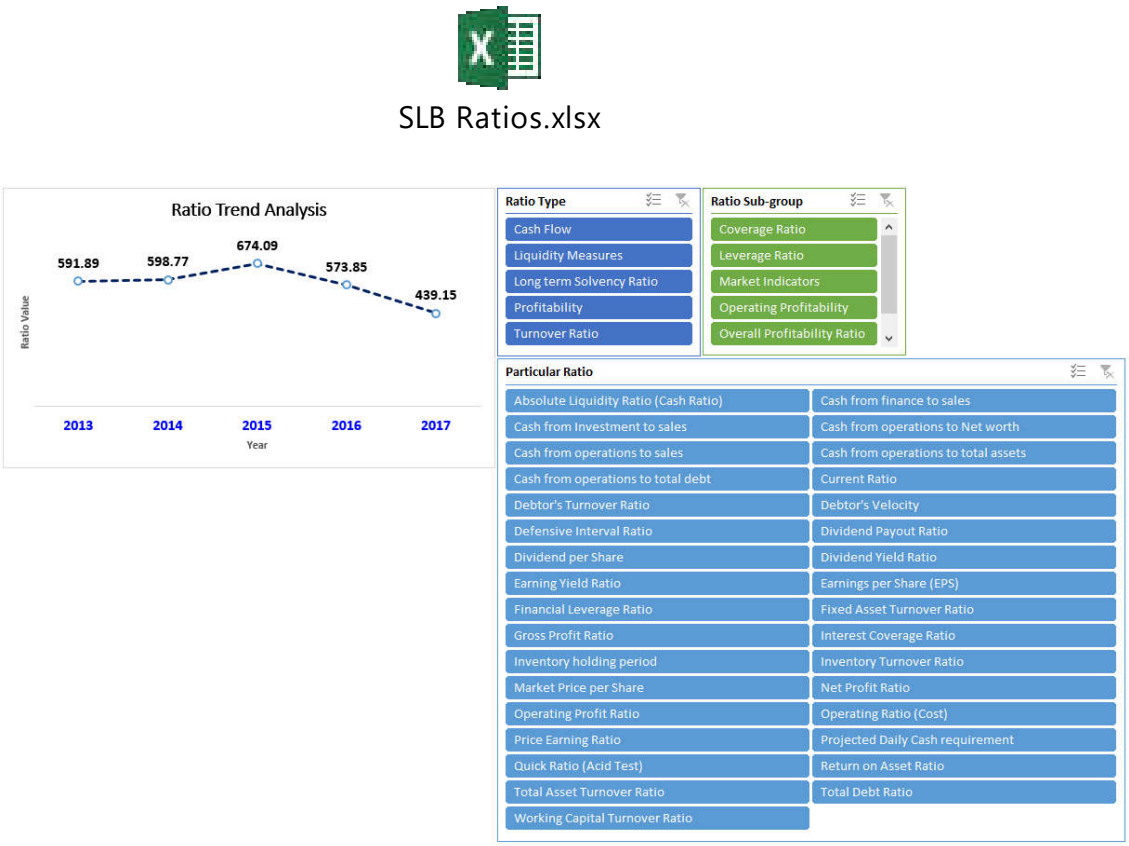

Figure 3 Schlumberger's Ratio Analysis

8.2 Details of Ratios

Excel Dashboard embedded above shows all trends at one place on a single click. It is a glance view to Schlumberger's financial strengths and weaknesses. Below table shows all the details of Ratios YOY.

Table 6 Schlumberger's Ratio YOY

Particular Ratio	2013	2014	2015	2016	2017
Cash from finance to sales	-0.05	-0.12	0.04	-0.20	-0.17
Cash from Investment to sales	-0.13	-0.11	-0.30	-0.02	-0.06
Cash from operations to Net worth	0.25	0.29	0.25	0.15	0.15
Cash from operations to sales	0.22	0.23	0.25	0.23	0.19
Cash from operations to total assets	0.15	0.17	0.13	0.08	0.08
Cash from operations to total debt	0.36	0.39	0.27	0.17	0.16
Absolute Liquidity Ratio (Cash Ratio)	0.62	0.53	0.92	0.61	0.33
Current Ratio	1.94	1.74	1.91	1.59	1.21
Defensive Interval Ratio	204.81	183.06	283.30	286.83	182.96
Projected Daily Cash requirement	97.00	102.00	77.00	65.00	72.00
Quick Ratio (Acid Test)	1.60	1.42	1.64	1.31	0.95
Financial Leverage Ratio	0.95	1.25	1.99	-1.33	-2.49
Interest Coverage Ratio	20.44	33.40	20.28	4.70	4.67
Total Debt Ratio	0.15	0.16	0.21	0.21	0.21
Dividend Payout Ratio	-0.24	-0.36	-1.16	1.57	1.85
Dividend per Share	-1.21	-1.50	-1.90	-1.95	-2.00
Dividend Yield Ratio	-0.01	-0.02	-0.02	-0.03	-0.03
Earning Yield Ratio	0.06	0.04	0.02	-0.02	-0.02
Earnings per Share (EPS)	5.05	4.16	1.63	-1.24	-1.08
Gross Profit Ratio	22%	23%	21%	14%	14%
Market Price per Share	84.36	98.71	81.83	77.13	71.04
Net Profit Ratio	0.15	0.12	0.06	-0.06	-0.05
Operating Profit Ratio	0.18	0.20	0.16	0.09	0.10
Operating Ratio (Cost)	0.78	0.77	0.79	0.86	0.86
Price Earnings Ratio	16.70	23.73	50.20	-62.20	-65.78
Return on Asset Ratio	0.10	0.09	0.03	-0.02	-0.02
Debtor's Turnover Ratio	3.94	4.35	4.04	2.96	3.77
Debtor's Velocity	93.00	84.00	90.00	123.00	97.00
Fixed Asset Turnover Ratio	1.11	1.15	0.86	0.51	0.57
Inventory holding period	47.48	45.28	48.67	64.62	56.21
Inventory Turnover Ratio	7.69	8.06	7.50	5.65	6.49
Total Asset Turnover Ratio	0.67	0.73	0.52	0.36	0.42
Working Capital Turnover Ratio	3.56	4.62	2.77	3.14	9.47

9. Conclusion

Financial ratios are tools used to assess the relative strength of companies by performing simple calculations on items on income statements, balance sheets and cash flow statements. Ratios measure companies' operational efficiency, liquidity, stability and profitability, giving investors more relevant information than raw financial data.

9.1 Advantages of Ratio Analysis

The following are the principle advantages of Ratio Analysis.

1. Forecasting and Planning:

The trend in costs, sales, profits and other facts can be known by computing ratios of relevant accounting figures of last few years. This trend analysis with the help of ratios may be useful for forecasting and planning future business activities.

2. Budgeting:

Budget is an estimate of future activities on the basis of past experience. Accounting ratios help to estimate budgeted figures. For example, sales budget may be prepared with the help of analysis of past sales.

3. Measurement of Operating Efficiency:

Ratio analysis indicates the degree of efficiency in the management and utilisation of its assets. Different activity ratios indicate the operational efficiency. In fact, solvency of a firm depends upon the sales revenues generated by utilizing its assets.

4. Communication:

Ratios are effective means of communication and play a vital role in informing the position of and progress made by the business concern to the owners or other parties.

5. Inter-firm Comparison:

Comparison of performance of two or more firms reveals efficient and inefficient firms, thereby enabling the inefficient firms to adopt suitable measures for improving their efficiency. The best way of inter-firm comparison is to compare the relevant ratios of the organisation with the average ratios of the industry.

6. Indication of Liquidity Position:

Ratio analysis helps to assess the liquidity position i.e., short-term debt paying ability of a firm. Liquidity ratios indicate the ability of the firm to pay and help in credit analysis by banks, creditors and other suppliers of short-term loans.

7. Indication of Long-term Solvency Position:

Ratio analysis is also used to assess the long-term debt-paying capacity of a firm. Long-term solvency position of a borrower is a prime concern to the long-term creditors, security analysts and the present and potential owners of a business. It is measured by the leverage/capital structure and profitability ratios which indicate the earning power and operating efficiency. Ratio analysis shows the strength and weakness of a firm in this respect.

8. Indication of Overall Profitability:

The management is always concerned with the overall profitability of the firm. They want to know whether the firm has the ability to meet its short-term as well as long-term obligations to its creditors, to ensure a reasonable return to its owners and secure optimum utilisation of the assets of the firm. This is possible if all the ratios are considered together.

9. Signal of Corporate Sickness:

A company is sick when it fails to generate profit on a continuous basis and suffers a severe liquidity crisis. Proper ratio analysis can give signal of corporate sickness in advance so that timely measures can be taken to prevent the occurrence of such sickness.

10. Aid to Decision-making:

Ratio analysis helps to take decisions like whether to supply goods on credit to a firm, whether bank loans will be made available etc.

11. Simplification of Financial Statements:

Ratio analysis makes it easy to grasp the relationship between various items and helps in understanding the financial statements.

9.2 Limitations of Ratio Analysis

1. Historical Information:

Financial statements provide historical information. They do not reflect current conditions. Hence, it is not useful in predicting the future.

2. Different Accounting Policies:

Different accounting policies regarding valuation of inventories, charging depreciation etc. make the accounting data and accounting ratios of two firms non-comparable.

3. Lack of Standard of Comparison:

No fixed standards can be laid down for ideal ratios. For example, current ratio is said to be ideal if current assets are twice the current liabilities. But this conclusion may not be justifiable in case of those concerns which have adequate arrangements with their bankers for providing funds when they require, it may be perfectly ideal if current assets are equal to or slightly more than current liabilities.

4. Quantitative Analysis:

Ratios are tools of quantitative analysis only and qualitative factors are ignored while computing the ratios. For example, a high current ratio may not necessarily mean sound liquid position when current assets include a large inventory consisting of mostly obsolete items.

5. Window-Dressing:

The term ‘window-dressing’ means presenting the financial statements in such a way to show a better position than what it actually is. If, for instance, low rate of depreciation is charged, an item of revenue expense is treated as capital expenditure etc. the position of the concern may be made to appear in the balance sheet much better than what it is. Ratios computed from such balance sheet cannot be used for scanning the financial position of the business.

6. Changes in Price Level:

Fixed assets show the position statement at cost only. Hence, it does not reflect the changes in price level. Thus, it makes comparison difficult.

7. Causal Relationship Must:

Proper care should be taken to study only such figures as have a cause-and-effect relationship; otherwise ratios will only be misleading.

8. Ratios Account for one Variable:

Since ratios account for only one variable, they cannot always give correct picture since several other variables such Government policy, economic conditions, availability of resources etc. should be kept in mind while interpreting ratios.

9. Seasonal Factors Affect Financial Data:

Proper care must be taken when interpreting accounting ratios calculated for seasonal business. For example, an umbrella company main-tains high inventory during rainy season and for the rest of year its inventory level becomes 25% of the seasonal inventory level. Hence, liquidity ratios and inventory turnover ratio will give biased picture.

10.Acknowledgments

We thank all helping hands at PITC Pune for reviewing this research and providing helpful insights.

11. References

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[2] Book:
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