

# Relational Trend Analysis: A Simple and Effective Way To Detect Financial Statements Fraud

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**Abstract-** Horizontal and vertical analysis are among the numerous financial statements fraud (FSF) detection methods which have been severely criticized for their apparent imprecision. This paper intends to reverse this through a new technique which combines the two to produce a joint relational trend analysis (RTA). The study adopted the desk research method using a rehashed five-year financial statement data and employed tables and simple MS Excel commands to perform periodic relational analysis by comparing the probabilities of the occurrence of a percentage of an item in a group for the current period with similar probabilities of the same item and group for the base period. The new technique produced indices which highlighted not only the problem area of the financial statements but also their source(s). The findings proved that RTA overcame the deficiencies of its fore-runners by offering promising results with greater precision. RTA's easy to apply method makes it possible to timely detect FSFs without the need for advanced mathematical modeling.

**Index Terms-** Financial Statement Fraud; Relational Trend Analysis; Financial Ratios; Beneish Model; Horizontal Analysis; Vertical Analysis

## I. INTRODUCTION

Financial statements are the mirror through which a concise but detailed picture of the health, worth and status of an enterprise can be viewed. This is perhaps the reason why investment decisions cannot be made without them. It could also be the reason why it is the first port of call for financial fraudsters and fund embezzlers who would want to cover their tracks in order to shield their nefarious activities from the eyes of the business owners and the investing public. The translation and transmission of fraudulent acts and their economic values into the financial statement in order to cover up such acts and make an otherwise unprofitable proposal a feasible one, is what gave rise financial statements fraud.

Financial statements express the economic condition of a company in three ways: (a) the balance sheet reports assets, liabilities, and owners' equity; (b) the income statement accounts for the income or loss of the company; (c) and the cash flow statement displays the sources and uses of cash (ACFE, 2009). Ever since the emergence of financial reporting as a way of stewardship accounting during the post-medieval industrial revolution in England, the overwhelming importance of a firm's financial statements to the investing public, the government and other stakeholders cannot be over-emphasized.

## 1.1 Fraud and Financial Statements

Fraud is defined by the Association of Certified Fraud Examiners (ACFE) as an intentionally deceptive action designed to provide the perpetrator with an unlawful gain, or to deny a right to a victim (Chen, 2018). On the basis of the ACFE definition, we define financial statements fraud as the intentional insertion, omission or alteration of transactional data in a financial statement with the aim to conceal impropriety, deceive and take unlawful advantage of the user's decision-making ability.

According to Investorpedia.com, five basic types of financial statement fraud exist: (i) fictitious sales, (ii) improper expense recognition, (iii) incorrect asset valuation, (iv) hidden liabilities, and (v) unsuitable disclosures (Investorpedia.com, 2018). Various researchers in the field of accounting have offered suggestions as to the causes of financial statement fraud which include the inability of management to follow regulatory guidelines, trying to cover financial misfeasance, bad corporate governance and a blatant attempt to misrepresent facts to investors (BrownStephen, 2004; Hannink, 2013; Rezaee, 2005; Amara, Amar, & Jarboui, 2013). Many techniques have been employed to detect and curb the scourge, but none has been able to satisfy the aspirations of the business enterprise stakeholders globally. However, this paper is not more concerned about defining the various types financial statements fraud and the causes than it is about finding an efficient and effective method of detecting them. Therefore, this paper intends to improve on the existing trend analysis techniques by using a combination of horizontal and vertical trend analyses to produce *relational trend indices* capable of highlighting not only the problem area of financial statements but also the source(s) of such problem.

## II. LITERATURE REVIEW AND THEORETICAL CONSIDERATIONS

There are presently a plethora of methods and models designed ostensibly for analyzing and detecting financial statements fraud, with some just as exotic as their name sounds. However, there have been no general agreement as to the effectiveness and efficiency of any of the methods or models. From the study materials made available at its web site, ACFE(2009) identified financial analysis, comparative analysis, relationship analysis and ratio analysis as the most common techniques of investigating financial statement fraud. Other methods were suggested to include risk analysis and risk assessment in the preparation and publication of financial statements (Hogan, Rezaee, Riley, & Velury, 2008; Mohamed &

Handley-Schacheler, 2014; Seow, 2009). Johnson, Jamal and Berryman (1995) suggested the use of standard management framing style for suspicious transactions as a method of detecting financial statements fraud (FSF) as against multiple representations which is less effective (Johnson, Jamal, & Berryman, 1995).

## 2.1 Financial Analysis method

Financial analysis techniques can help investigators discover and examine unexpected relationships in financial information. These analytical procedures are based on the premise that relatively stable relationships exist among economic events in the absence of conditions to the contrary. Unexpected deviations in relationships most likely indicate errors, but also might indicate illegal acts or fraud. Therefore, deviations in expected relationships should warrant further investigation to determine the exact cause (ACFE, 2009). Financial analysis is also supported by a number of authors who employed data mining techniques with advanced mathematical models such as decision trees, neural networks and Bayesian belief networks with significant results (Kirkos, Spathis, & Manolopoulos, 2007). FSF is not only perpetrated with numbers, wrongly disclosed information can also mislead the reader, this is perhaps the reason for involving text mining and linguistic credibility in FSF investigation (Humpherys, Moffitt, Burns, Burgoon, & Felix, 2011; Gupta & Gill, 2012).

Analytical procedures are used to detect and examine relationships of financial information that do not appear reasonable such as: differences that are not expected, the absence of differences that are expected, potential errors, potential fraud and illegal acts, as well as other unusual or non-recurring transactions or events. The analytical techniques assist with the first steps in the fraud investigation process (ACFE, 2009; Kirkos, Spathis, & Manolopoulos, 2007; Humpherys, Moffitt, Burns, Burgoon, & Felix, 2011). Contributing to this debate, one of the Big Four prescribes that financial statement fraud investigation process should begin with determining areas of operations in identifying potential fraud schemes, noting red flags associated with the identified schemes, building effective audit steps to search for indicators and conducting further inquiry to validate the detection or suspicion of the red flag (PriceWaterhouseCoopers, 2004).

## 2.2 Comparative Techniques and Financial Relationship Analysis

ACFE (2009) also suggested the use of Comparative Techniques to help identify the relationships among the financial data that do not appear reasonable. The procedure includes: (i) comparison of current period information with similar information from prior periods, since prior period amounts are assumed to be the expectation for the current period. A modification of this comparison is the incremental approach whereby prior period numbers are adjusted for known changes, such as significant purchases or sales of assets and changes in lines and volumes of business; (ii) comparison of current period information with budgets or forecasts which should include adjustments for expected unusual transactions and events; (iii) study of relationships among elements of information since certain accounts vary in relation to others, both within a financial

statement and across financial statements; (iv) study of relationships of financial information with the appropriate non-financial information as non-financial measures are normally generated from an outside source; (v) comparison of information with similar information from the industry in which the organization operates because industry averages are reliable in stable industries; and (vi) comparison of information with similar information from other organizational units. A company with several stores might compare one store with another store, using one of the stores as a model. The "model" store should be sufficiently audited to provide assurance that it is an appropriate standard (Institute of Internal Auditors, 2001).

The third technique advocated by ACFE (2009) is the use of Financial Relationships analysis. This technique is primarily based on the understanding of general relationships between certain financial statement balances to enable identification of relationships that appear unusual. For instance, how would increase in sales trigger a response in the cost of sales, or sales commission expense? ACFE (2009) maintain that the foundation of financial analysis lies on how these questions are answered.

## 2.3 Financial Ratios and Beneish Model

The use of financial ratios is undoubtedly the oldest and still the most prefer tool for financial statement analysis which was also prescribed by ACFE (2009) as a means of analyzing financial statements for consistency. Financial ratios measure the relationship between the figures on two different financial statements. It can be very useful in detecting red flags for a fraud examination as well as understanding a company's financial health (Roxas, 2011; Koornhof, 2000). It is used as a means of rationalizing FSF in government financial reporting (Stalebrink & Sacco, 2007). It is an effective tool for customer drive and performance evaluation in the banking sector (Green & Reinstein, 2004). It facilitates financial data analysis (Persons, 2011); and have been used as a means of comparing FSF in Europe with FSF in the United States (Brennan & McGrath, 2007). Financial ratios are also involved when analyzing evolutionary financial statements fraud (Zhou & Kapoor, 2011). It is also employed when using Statistical and Machine Learning Algorithm to analyse financial statements (Perols, 2011); and for detecting misrepresentations in a financial statement (Ilter, 2014). Financial ratios are also used by financial analysts to compare the strengths and weaknesses of companies of interest (Lan, 2012; Gropelli & Ehsan, 2000).

Another innovative method advocated by Investopedia.com (2018) for financial statement analysis is the use of the Beneish model. The Beneish Model is a mathematical model which evaluates eight ratios to determine the likelihood of earnings manipulation. Asset quality, depreciation, gross margin, leverage and other variables are factored into the analysis. Combining the variables into the model, an M-score is calculated; a value greater than -2.22 warrants further investigation as the firm may be manipulating its earnings while an M-score less than -2.22 suggests that the company is not a manipulator(cite).

The major problem with the Beneish Model and all other ratio-related strategies is that the full picture of the statement's situation can only be relied upon as long as the results are comparable to the industry and to the specific firm's historical average. Another important setback for these enumerated

techniques is that they lack the required precision to identify the exact problem spots on the suspected financial statements as most came as a result of mere academic inquiry devoid of any industrial impact as in the use of academic literature analysis (Hogan, Rezaee, Riley, & Velury, 2008); or the use of text mining (Gupta & Gill, 2012); or the employment of machine learning algorithm (Perols, 2011). In other words, most researchers prefer to employ the rhetoric of guess work to actually unravelling the truth. This brings us back to an old neglected but potentially reliable alternative in the form trend analysis.

## 2.4 Trend Analysis

Trends are discernible patterns through which we evaluate the consistency of occurrence of transactions, economic and natural events and phenomena. Trend analysis is perhaps one of the oldest transactional discrepancy spotting method. It is a technique used to predict the future path of transactional movements based on the observed past movements. According to WebFinance, Inc (n.d.), trend analysis tries to predict a trend like a bull market run and ride that trend until data suggests a trend reversal as in stock market transaction (WebFinance, Inc., n.d). Trend analysis attempts to spot a pattern and could be used to estimate uncertain events in the past (Immerwahr, 2004). In project management, trend analysis is a mathematical technique that uses historical results to predict future outcomes. It achieves this by tracking variances in cost and schedule performance which inadvertently acts as the quality control tool (PMBOK, 1997). Trend analysis might mean different things to differing professional groups. In statistics, trend analysis often refers to techniques for extracting an underlying pattern of behavior in a time series which would otherwise be partly or nearly completely hidden by noise. In accounting, trend analysis is also known as horizontal analysis and it is used to analyse financial statements to show changes in the amounts of corresponding accounting items over a period of time (Accounting for Management.Org, n.d). ACFE (2009) identifies two types of trend analysis - horizontal and vertical analyses; and defines horizontal analysis as a technique for analyzing the percentage change in individual financial statement items from one year to the next. Using the first period in the analysis as the base, the changes in the subsequent periods are computed as a percentage of the base period. If more than two periods are presented, each period's changes are computed as a percentage of the preceding period. The resulting percentages are then studied in detail. Vertical analysis on the other hand, emphasizes the relationship of statement items within each accounting period. (ACFE, 2009).

## 2.5 Relational Trend Analysis

Relational trend analysis combines both the horizontal and vertical analyses and introduces indices and group means to identify incongruent relationships. Relational Trend Analysis is precipitated on the belief that financial transactions are expected to follow a consistently improving pattern over the years based on the adopted accounting policies, and a negative departure from this expectation will be viewed as a sign that an untoward occurrence must have transpired.

Modern accounting investigations use **relational trend analysis** because it is more informative to show the changes in the ratios of the current year in relation to the base or previous year.

To determine the ratios, the item of income or expenditure on focus is divided by either the total amount under the group of that item or by the accounting measure in focus such as gross operating margin, net profit before tax or shareholders' funds, etc. When the required accounting ratios are computed, the trend or horizontal analysis can then be performed by determining the percentage change of the current year figures on the previous or base year figures. These change statistics are then grossed to determine whether there are radical departures from the previous period transactions and what area of the transactions should be probed for details (Enyi, 2019). The formula to determine the percentage change is given as:

$$\% \text{ Change} = \frac{CYR - PYR}{PYR} \quad (1)$$

For a multi-period, the trend analysis changes to reflect the step by step periodic approach. The formula for the percentage change in a multi-period trend analysis for each year of the years under consideration is given as:

$$\% \text{ Change}_t = \frac{Y_tR - Y_0R}{Y_0R} \quad (2)$$

Where,

CYR = Current year ratio  
 PYR = Previous year ratio

$Y_tR$  = Year t ratio

$Y_0R$  = Base year ratio

However, a further refinement to these formulas showed that better deductive information can be obtained by modifying formulas (1) and (2) to reflect the relational changes between the base year transactions and the current year's and showing the changes between the base year relational figures and the current year relational figures. This, as will be seen later produces a true comparative analysis. The new refined formulas are given as:

$$TR = \frac{100CYiA}{CYgT} \quad (3)$$

$$RC = BTR - CTR \quad (4)$$

For multi-period analysis, the two formulas can be combined into one as follows:

$$TRC = \frac{100BYiA}{BYgT} - \frac{100CYiAt}{CYgTt} \quad (5)$$

Where,

TR = Transactional relationship

RC = Relational change

TRC = Transactional relationship change

CYiA = Current year item amount (item as a part of a transaction group)

CYgT = Current year transaction group total

BYiA = Base year item amount (item as a part of a transaction group)

BYgT = Base year transaction group total

$CYiA_t$  = Year 't' item amount (item as a part of a transaction group)

$CYgT_t$  = Year 't' transaction group total

$t$  counts from 1 to  $n$ , where  $n$  is the number of periods under review minus the base year.

### III. METHODOLOGY

The study adopted the desk research method using a rehashed five-year financial statement data extracted from a case study firm which true identity was obscured for security and ethical reasons. Using tables and simple MS Excel commands, the relational analysis was performed by comparing the probabilities of the occurrence of a percentage of an item in a group for the current period with similar probabilities of the same item and group for the base period. The differences are then grossed up vertically to produce the group relational trend means.

### IV. RESULTS/FINDINGS

The financial statements on table 1 and the relational analysis on table 2 were used as an example to illustrate the use of relational trend analysis in FSF investigations.

#### 4.1 Points to note on the data and the analysis

The financial statement follows the format of normal financial statements. The first segment deals with the balance sheet items while the income statement, breakdown of the current assets, and the profit appropriation sections follow in that order. The statement contains five years (accounting periods) transactional information which were expected to be consistent in both policy and financial regulation application for all the periods under consideration.

#### 4.2 Interpretation of the Trend Figures

Table 1 holds the figures extracted from our case company's financial statements for five years. Table 2 uses formulas (3) and (4) enunciated earlier in 2.5 to produce the transactional relationships and their level of changes from the base year. The transactional relationship is arrived at by dividing the individual item transaction amount with the total of that group of transactions for the period under consideration. The information is in two groups, the transactional relationship on the right and the changes from the base year on the left.

The main information required is given by each transactional group's *trend mean*, while the individual item detail is shown above the trend mean. A clean slate is given to the period with a zero trend mean for that transaction group. That simply means that no irregularity is present in that transaction group for that period. On the other hand, a non-zero trend mean indicates that the transaction group is suspect and should be investigated further.

### V. DISCUSSIONS

From the result of the analysis in table 2, all the balance sheet (statement of financial position) items seemed to have passed the relational litmus test for all the periods under scrutiny, implying that all the balance sheet items for subsequent years were treated with consistency and are in conformity with extant regulations and the accounting policies applied in the base year. However, this is not so for the Income Statement expense analysis which indicates

that the 2015 accounting period has a question mark under the Admin Cost Analysis with a trend mean of 1.0. A closer look at the components of the group revealed that though the Marketing Expenses had a cost saving of 0.3 trend index, the General/Admin Costs (GAC) rose inexplicably by 1.3 trend index. A further look at the transactional relationship for the GAC informs that only the item's expenditure for the 2015 period was as high as 9.8 while other periods including the base period averaged 8.6. This is a strong evidence that something out of the ordinary happened to the GAC expenses for 2015 and should be subjected to further investigation.

Just as the case with the GAC for 2015, the Cost of Goods Sold (CGS) for 2018 deserves further scrutiny because while the previous three years showed efficiency with quality reductions in their CGS trend indices, the 2018 showed a sharp increase in CGS trend index from -1.1 to 1.5 (a 2.6 index point increase).

While increase in trend index point could be a source of concern for expenditure and costs, it is the other way round for income. Because the income analysis combines turnover with the profitability measurements thereon, the trend mean is not expected to have zero values, but a progressive firm should be capable of maintaining a positive income trend means for all periods. A look at the Income Analysis also confirms that the 2015 accounting period is indeed a problem spot. While other periods, aside the base year 2014, recorded positive trend mean index in accordance with their profitability, only the 2015 accounting period recorded a negative trend mean index, thereby making a case for proper investigation to unearth the root cause.

### VI. ASSUMPTIONS OF RELATIONAL TREND ANALYSIS

To effectively apply the relational trend analysis to forensic investigations in accounting, the following assumptions must be borne in mind (Enyi, 2019):

- a) The base year transactions are assumed to be correct and conforms with the firm's corporate objectives, consistent with the firm's accounting policies and complies with government regulatory requirements;
- b) All periods transactions emanate or arise from the ordinary or normal business for which the firm is established, and that all extraordinary items are duly disclosed as such in the financial statements;
- c) There was no alteration to reporting period and accounting policies were consistently applied to all periods and that changes arising thereon have been duly adjusted in the financial statements under consideration.

### VII. CONCLUSION

The paper looked at the theories and techniques employed in financial statements analysis and highlighted areas of strengths and weaknesses for each. An attempt to use a new method called relational trend analysis to improve the deficiencies of fore-runners shows promising results as the computed trends highlighted problem spots with the required precision. With this easy to apply solution it is now possible to timely detect financial statements frauds without the need for advanced mathematical modeling.

### VIII. FUTURE RESEARCH

This research was carried out on the data extracted from a non-manufacturing company, it is recommended that further research on this method of financial statements fraud analysis and detection be carried on other types of companies such as manufacturing, construction and service companies to further validate the findings of this research.

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Tables

**Table 1: BrainTech Ltd., five years financial statements**

<i>Statements of Financial Position</i>					
	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
	'000	'000	'000	'000	'000
<b><u>Assets</u></b>					
Current Assets	750000	733000	807500	802000	795800
Fixed Assets	195000	307000	302000	311000	305800
Investments	544500	570000	531000	585000	593400
Intangible Assets	<u>150000</u>	<u>150000</u>	<u>175000</u>	<u>175000</u>	<u>175000</u>
Total Assets	<b><u>1639500</u></b>	<b><u>1760000</u></b>	<b><u>1815500</u></b>	<b><u>1873000</u></b>	<b><u>1870000</u></b>
<b><u>Liabilities</u></b>					
Current Liabilities	310000	343000	334160	372130	335540
Long-Term Liabilities	<u>200000</u>	<u>300000</u>	<u>300000</u>	<u>300000</u>	<u>300000</u>
Total Liabilities	<b><u>510000</u></b>	<b><u>643000</u></b>	<b><u>634160</u></b>	<b><u>672130</u></b>	<b><u>635540</u></b>
<b><u>Shareholders' Equity:</u></b>					
Ordinary Shares @ N1 par value	600000	600000	600000	600000	600000
Reserves	150000	200000	220000	245000	275000
Retained Earnings	<u>279500</u>	<u>217000</u>	<u>261340</u>	<u>255870</u>	<u>259460</u>
Shareholders' Equity	<u>1029500</u>	<u>1017000</u>	<u>1081340</u>	<u>1100870</u>	<u>1134460</u>
9% Preference Shares @ N10 par	<u>100000</u>	<u>100000</u>	<u>100000</u>	<u>100000</u>	<u>100000</u>
Total Liabilities & Equity	<b><u>1639500</u></b>	<b><u>1760000</u></b>	<b><u>1815500</u></b>	<b><u>1873000</u></b>	<b><u>1870000</u></b>
<b><i>Current Assets Details</i></b>					
	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
	'000	'000	'000	'000	'000
Cash and Bank Balances	190500	164700	205105	203708	202500
Marketable Securities	175000	160000	188200	186866	185400
Accounts Receivables	115000	120000	123800	122950	122000
Inventories	264000	283000	284240	282900	280400
Prepaid Expenses	<u>5500</u>	<u>5300</u>	<u>6155</u>	<u>5576</u>	<u>5500</u>
Total Current Assets	<b><u>750000</u></b>	<b><u>733000</u></b>	<b><u>807500</u></b>	<b><u>802000</u></b>	<b><u>795800</u></b>
<b><i>Statement of Comprehensive Income</i></b>					
	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
	'000	'000	'000	'000	'000

Turnover	1798000	1500000	1835000	1812750	1905600
Cost of Goods Sold	<u>1243000</u>	<u>1020000</u>	<u>1137700</u>	<u>1233900</u>	<u>1345100</u>
GROSS PROFIT	<u>555000</u>	<u>480000</u>	<u>697300</u>	<u>578850</u>	<u>560500</u>
<b>Less</b>					
Marketing Expenses	241000	197000	245960	243500	259200
General/Administrative Expenses	<u>154000</u>	<u>147400</u>	<u>158000</u>	<u>155400</u>	<u>157600</u>
Total Operating Expenses	<u>395000</u>	<u>344400</u>	<u>403960</u>	<u>398900</u>	<u>416800</u>
OPERATING PROFIT	160000	135600	293340	179950	143700
Other Income	<u>8500</u>	<u>11000</u>	<u>13560</u>	<u>22000</u>	<u>87500</u>
PROFIT BEFORE INTEREST & TAX	168500	146600	306900	201950	231200
Interest Expense	<u>6000</u>	<u>12000</u>	<u>18000</u>	<u>18000</u>	<u>18000</u>
PROFIT BEFORE TAX	162500	134600	288900	183950	213200
Income Tax	<u>71500</u>	<u>58100</u>	<u>115560</u>	<u>75420</u>	<u>90610</u>
NET PROFIT	<u><b>91000</b></u>	<u><b>76500</b></u>	<u><b>173340</b></u>	<u><b>108530</b></u>	<u><b>122590</b></u>

***Statement of Retained Earnings***

	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
	'000	'000	'000	'000	'000
Retained Earnings B/Fwd	187500	179500	197000	261340	255870
Net Profit for the year	<u>91000</u>	<u>76500</u>	<u>173340</u>	<u>108530</u>	<u>122590</u>
Profit for Appropriation	278500	256000	370340	369870	378460
Less:					
Transfer to Reserves	50000	20000	25000	30000	10000
Preference Dividends	9000	9000	9000	9000	9000
Ordinary Dividends	<u>40000</u>	<u>30000</u>	<u>75000</u>	<u>75000</u>	<u>100000</u>
Retained Earnings C/Fwd	<u><b>179500</b></u>	<u><b>197000</b></u>	<u><b>261340</b></u>	<u><b>255870</b></u>	<u><b>259460</b></u>

***Income Analysis***

Turnover	1798000	1500000	1835000	1812750	1905600
Gross Profit	555000	480000	697300	578850	560500
Operating Profit	160000	135600	293340	179950	143700
Other Income	8500	11000	13560	22000	87500
Profit Before Interest and Tax	168500	146600	306900	201950	231200
Profit Before Tax	162500	134600	288900	183950	213200
Net Profit	91000	76500	173340	108530	122590

***Standard Ratio Analysis***

Gross Profit Margin	30.87	32.00	38.00	31.93	29.41
Operating Profit Margin	8.90	9.04	15.99	9.93	7.54
Asset Turnover Ratio	1.10	0.85	1.01	0.97	1.02
Return on Capital Employed	5.55	4.50	9.70	5.88	6.55
Return on Debt	30.33	19.13	43.34	27.13	30.65

Source: Enyi (2019)

**Table 2: Relational Trend Analysis**

	<i>Transactional Relationship</i>					<i>Changes from base year</i>				
	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
	%	%	%	%	%					
<b><u>Assets</u></b>										
Current Assets	45.7	41.6	44.5	42.8	42.6	0.0	-4.1	-1.3	-2.9	-3.2
Fixed Assets	11.9	17.4	16.6	16.6	16.4	0.0	5.5	4.7	4.7	4.5
Investments	33.2	32.4	29.2	31.2	31.7	0.0	-0.8	-4.0	-2.0	-1.5
Intangible Assets	9.1	8.5	9.6	9.3	9.4	<u>0.0</u>	<u>-0.6</u>	<u>0.5</u>	<u>0.2</u>	<u>0.2</u>
<b>Assets Trend Means</b>						<b><u>0.0</u></b>	<b><u>0.0</u></b>	<b><u>0.0</u></b>	<b><u>0.0</u></b>	<b><u>0.0</u></b>
<b><u>Liabilities</u></b>										
Current Liabilities	60.8	53.3	52.7	55.4	52.8	0.0	-7.4	-8.1	-5.4	-8.0
Long-Term Liabilities	39.2	46.7	47.3	44.6	47.2	<u>0.0</u>	<u>7.4</u>	<u>8.1</u>	<u>5.4</u>	<u>8.0</u>
<b>Liabilities Trend Means</b>						<b><u>0.0</u></b>	<b><u>0.0</u></b>	<b><u>0.0</u></b>	<b><u>0.0</u></b>	<b><u>0.0</u></b>
<b><u>Shareholders' Equity:</u></b>										
Ordinary Shares @ N1	58.3	59.0	55.5	54.5	52.9	0.0	0.7	-2.8	-3.8	-5.4
Reserves	14.6	19.7	20.3	22.3	24.2	0.0	5.1	5.8	7.7	9.7
Retained Earnings	27.1	21.3	24.2	23.2	22.9	<u>0.0</u>	<u>-5.8</u>	<u>-3.0</u>	<u>-3.9</u>	<u>-4.3</u>
<b>Equity Trend Means</b>						<b><u>0.0</u></b>	<b><u>0.0</u></b>	<b><u>0.0</u></b>	<b><u>0.0</u></b>	<b><u>0.0</u></b>
<b><u>Current Assets Details</u></b>										
Cash & Bank Balances	25.4	22.5	25.4	25.4	25.4	0.0	-2.9	0.0	0.0	0.0
Marketable Securities	23.3	21.8	23.3	23.3	23.3	0.0	-1.5	0.0	0.0	0.0
Accounts Receivables	15.3	16.4	15.3	15.3	15.3	0.0	1.0	0.0	0.0	0.0
Inventories	35.2	38.6	35.2	35.3	35.2	0.0	3.4	0.0	0.1	0.0
Prepaid Expenses	0.7	0.7	0.8	0.7	0.7	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
<b>CA Trend Means</b>						<b><u>0.0</u></b>	<b><u>0.0</u></b>	<b><u>0.0</u></b>	<b><u>0.0</u></b>	<b><u>0.0</u></b>
<b><u>P&amp;L Expense Analysis</u></b>										
Cost of Goods Sold	69.1	68.0	62.0	68.1	70.6	0.0	-1.1	-7.1	-1.1	1.5
<b><u>Admin Costs Analysis</u></b>										
Marketing Expenses	13.4	13.1	13.4	13.4	13.6	0.0	-0.3	0.0	0.0	0.2
General/Admin Costs	8.6	9.8	8.6	8.6	8.3	<u>0.0</u>	<u>1.3</u>	<u>0.0</u>	<u>0.0</u>	<u>-0.2</u>
<b>Admin Cost Trend Means</b>						<b><u>0.0</u></b>	<b><u>1.0</u></b>	<b><u>0.0</u></b>	<b><u>0.0</u></b>	<b><u>0.0</u></b>
Interest Expense	0.3	0.8	1.0	1.0	0.9	0.0	0.5	0.6	0.7	0.6
Income Tax	4.0	3.9	6.3	4.2	4.8	0.0	-0.1	2.3	0.2	0.8
<b><u>Income Analysis</u></b>										
Turnover	0.0	-16.6	2.1	0.8	6.0	0.0	-16.6	2.1	0.8	6.0
Gross Profit	30.9	32.0	38.0	31.9	29.4	0.0	1.1	7.1	1.1	-1.5

Operating Profit	8.9	9.0	16.0	9.9	7.5	0.0	0.1	7.1	1.0	-1.4
Other Income	0.5	0.7	0.7	1.2	4.6	0.0	0.3	0.3	0.7	4.1
Profit Before Interest and Tax	9.4	9.8	16.7	11.1	12.1	0.0	0.4	7.4	1.8	2.8
Profit Before Tax	9.0	9.0	15.7	10.1	11.2	0.0	-0.1	6.7	1.1	2.2
Net Profit	5.1	5.1	9.4	6.0	6.4	<u>0.0</u>	<u>0.0</u>	<u>4.4</u>	<u>0.9</u>	<u>1.4</u>
<b>Income Trend Means</b>						<b><u>0.0</u></b>	<b><u>-14.7</u></b>	<b><u>35.0</u></b>	<b><u>7.5</u></b>	<b><u>13.6</u></b>

Source: Enyi (2019)