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METHODS

Performance analysis through financial modeling

G. Naveen Kumar[1], Podapala Siva Reddy[1*] and Mulupur Sai Rama Krishna[2]

[1]Department of Business Management, Malla Reddy College of Engineering and Technology, Hyderabad, India
[2]University of Hertfordshire, Hatfield, United Kingdom

[*]**Correspondence:**
Podapala Siva Reddy,
siva.podapala@gmail.com

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Finance is the lifeblood and lifeline of any business entity, either commercial or non-commercial. The survival, stability, and sustainability of a firm are highly associated with its financial wellness. It can be observed through its ability to pay(re) short-term as well as long-term liabilities, meet the regular financial obligations, and increase the value of the firm and generate profit. Financial analysis, evaluation, and assessment help in determining the financial position and financial strength of a firm. Among the plenty of methods and tools available for financial performance, ratio analysis is more useful and meaningful. These ratios can be used to assess the evolution of a company's financial status (trend analysis), as well as for cross-sectional and comparative studies.

Keywords: Financial modeling, Performance analysis, Financial performance, Financial ratios, Forecasting, Scenario analysis

Introduction

This study presents the market competitiveness of four retail giants in the UK, such as Tesco PLC, Sainsbury's, ALDI, and Lidl with the help of ratios. This study analyses the different study concepts that are related to the establishment of financial stability. The financial position can be evaluated with the help of ratio analysis as well as Du-Point analysis. In addition, the study has also mentioned various financial condition analysis methods to have an understanding of financial ratios. Financial performance analysis holds a significant role in terms of understanding the financial health of the company. The financial records derived from the analysis help the investors to understand the economic conditions of the company, which leads to financial and reputational growth of the company.

Objectives of the study

The main research objectives are:

- To study the financial performance of selected companies by assessing their past performances, revenue, and projected future performance.
- To analyze the financial performance of the companies to determine the financial health of these companies.
- To evaluate the competitive advantages and economic viability of the companies with the help of the ratio analysis framework.
- To recommend appropriate strategies that can improve the financial performance of the selected company in this research.

Ratios: the theoretical framework

The organizing of information pertinent to a choice area has become the major duty of the decision maker in this digital and information era (1). The world is now more complex, uncertain, and dynamic, not because of a lack of information but because there is too much information. In real-life settings, the quality of a choice is frequently shown to be inversely proportional to the amount of information available (2). A business system continuously generates data. A successful management control system must generate relevant, understandable data and identify crucial management variables (3).

A correctly chosen ratio or combination of ratios can not only help with primary decision-making, but can also be used as a powerful monitoring tool (4). Among the many approaches used for data processing, data processing by ratio methods can extract the most information content if the factors that make up a proportion are appropriately chosen. The simplicity and directness of ratios attracted the minds of great analytical thinkers during not only modern times, but even in ancient times too (5).

A ratio is a numeric figure that reveals the association or relationship between two variables. Financial ratios are calculated to establish a meaningful link between two financial statements, and the results are then evaluated to draw significant conclusions. The numerator and denominator must be rationally connected, which is the most important component of the computation. Otherwise, the ratio will not give the information required for decision-making. As a result, financial statement analysis is given as a *pro forma* examination of the future, with anticipated ratios (6).

The ratios used in the study are listed below.

TABLE 1 | Ratio analysis of Tesco PLC.

Ratio analysis spreadsheet							
No.	**Years**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Balance sheet ratio (plausible)							
1	Current ratio	3.03479	3.86585	2.4902	0.60783	0.71841	2.08227
	Current assets	14828	15417	13726	12570	12879	10807
	Current liabilities	4886	3988	5512	20680	17927	5190
2	Quick ratio	0.00594	0.01204	0.00798	0.00106	0.00128	0.00193
	Cash + accounts	29	48	44	22	23	10
	Current liabilities	4886	3988	5512	20680	17927	5190
Income statement ratio (consistent)							
1	Gross margin	0.01952	0.02567	0.03603	0.03785	0.04389	0.03248
	Gross profit	944	1280	1837	2153	2518	1736
	Sales	48352	49867	50991	56883	57370	53445
2	Net margin	0.009	0.00291	0.02546	0.02943	0.02292	0.01544
	Net profit before tax	435	145	1298	1674	1315	825
	Sales	48352	49867	50991	56883	57370	53445

Source: calculated by the researcher.

TABLE 2 | Ratio analysis of Sainsbury's.

Ratio analysis spreadsheet							
No.	**Years**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Balance sheet ratio (plausible)							
1	Current ratio	0.66131	2.80853	3.22906	1.9825	1.70052	1.52304
	Current assets	4444	6322	7866	7589	7586	7073
	Current liabilities	6720	2251	2436	3828	4461	4644
2	Quick ratio	0.33497	0.255	0.30542	0.17268	0.02892	0.01335
	Cash + accounts	2251	574	744	661	129	62
	Current liabilities	6720	2251	2436	3828	4461	4644
Income statement ratio (consistent)							
1	Gross margin	0.05637	0.07053	0.06735	0.06192	0.07082	0.06743
	Gross profit	1456	1634	1882	2007	2294	2177
	Sales	25829	23168	27944	32412	32394	32285
2	Net margin	0.02273	0.02171	0.01464	0.00737	0.01809	0.01103
	Net profit before tax	587	503	409	239	586	356
	Sales	25829	23168	27944	32412	32394	32285

Source: calculated by the researcher.

TABLE 3 | Ratio analysis of Aldi.

Ratio analysis spreadsheet							
No.	**Years**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Balance sheet ratio (plausible)							
1	Current ratio	0.60725	0.56915	0.5175	0.4878	0.5130	0.3664
	Current assets	728.7	739.9	724.5	756.2	667	458
	Current liabilities	1200	1300	1400	1550	1300	1250
2	Quick ratio	0.23733	0	0	0	0	0.0992
	Cash + accounts	284.8	0	0	0	0	124
	Current liabilities	1200	1300	1400	1550	1300	1250
Income statement ratio (consistent)							
1	Gross margin	0.03863	0.04258	0.03365	0.2695	0.0304	0.0279
	Gross profit	324.5	417.3	370.2	398	345	276
	Sales	8400	9800	11000	14765	11348	9876
2	Net margin	0.02557	0.02254	0.01656	0.0182	0.0227	0.0187
	Net profit before tax	214.8	220.9	182.2	198	170	143
	Sales	8400	9800	11000	10870	7483	7642

Source: calculated by the researcher.

TABLE 4 | Ratio analysis of Lidl.

Ratio analysis spreadsheet							
No.	**Years**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Balance sheet ratio (plausible)							
1	Current ratio	1.0390	1.0406565	1.0029	5.69367	2.81145	2.0849
	Current assets	24849	24982	793498	821466	659435	512351
	Current liabilities	23916	24006	791185	144277	234574	245743
2	Quick ratio	0.01363	0.01945	0.011109	0.024016	0.01369	0.009579
	Cash + accounts	326	467	8790	3465	3212	2354
	Current liabilities	23916	24006	791185	144277	234574	245743
Income statement ratio (consistent)							
1	Gross margin	0.0458	0.0532	0.0484	0.0662	0.0567	0.0617
	Gross profit	356	456	478	654	418	336
	Sales	7765	8565	9865	9866	7370	5445
2	Net margin	0.0315	0.0402	0.0571	0.0665	0.0769	0.0793
	Net profit before tax	245	345	564	657	567	432
	Sales	7765	8565	9865	9866	7370	5445

Source: calculated by the researcher.

Current ratio

The current ratio expresses the relationship between a company's current assets and current liabilities. The current ratio is a static measure of the resources available to satisfy current obligations at a given moment in time. The existing reservoir of financial resources has no logical or physical relationship to its future cash flows (7).

Quick ratio

A stringent test of liquidity can be expressed by quick ratio (acid test ratio). Inventories of the least liquid current assets are excluded, and our methodology must weigh the benefits of eliminating inventories when evaluating liquidity (8).

Gross margin ratio

It is calculated as revenue less cost of sales and directs special attention to the factors explaining variations in sales and cost of sales. The gross profit must be big enough to support necessary future-directed discretionary expenditures (9).

Net margin ratio

This ratio expresses the relationship between total revenue and its net profits. The net profit margin ratio is used to indicate a company's potential to generate profit while taking into account various circumstances, such as an increase in costs that is judged ineffective. Net profit margin, which is commonly expressed as a percentage, is a powerful measure of a company's overall success.

Literature review

Renáta et al made a study on "Comprehensive assessment of firm financial performance using financial ratios and linguistic analysis of annual reports." According to the study's findings, businesses with strong financial outcomes not only orally communicate the attained values of financial indicators, but also comment on the sources of the results in more depth. This appears to be true for both good and negative consequences (10). The primary goal of financial statement analysis (ratio analysis) is to use information about a company's previous performance to forecast how it will perform in the future (11).

Barnes (12) explained the application and importance of ratios in brief. They measured the performance of a firm and use it as a tool to measure and predict financial position. The ratios are used for both credit and managerial analysis purposes and also for measuring the profitability of various business entities.

Warui (13) analyzed the credit risk management strategies and the performance of commercial banks in Kenya. He adopted the credit risk theory and found that credit risk is among the critical factors for any financial institution involved in any lending activity. The study added that financial institutions have to find themselves in making decision on giving credit to potential borrowers, despite effectively growing their balance sheets and effectively increasing their returns and cautions to any losses incurred.

Methodology

The study is based on pure secondary data, including financial statements of selected companies, i.e., Tesco PLC, Sainsbury's, Aldi, and Lidl. As part of the analysis, the researcher focused on liquidity position (current ratio and quick ratio) and consistency (gross margin ratio and net margin ratio). The ratios of the selected four companies are presented and discussed as follows.

Analysis of the data

The performance of any business entity can be measured with money in a business tycoon. A firm will be considered strong if it has sufficient financial reserves, funds, and liquidity. At the same time, their performance also depends on some other variables like assets (both fixed and current), liabilities, sales revenue, expenses, and cost of goods sold. The researcher considers these variables for the study and presented here.

In this study, a total of four financial ratios are calculated: current ratio, quick ratio, gross margin ratio, and net margin ratio. According to the above ratio analysis spreadsheet (**Table 1**), it is observed that Tesco PLC faces fundamental business losses in the 2020 financial year due to the COVID-19 pandemic. As per the overview of this organization, Tesco PLC faces around a 4.9% reduction in operating profit (2021).[1] Moreover, from the financial data of this organization, it is also identified that the organization experiences around 0.7% reduction in the annual sales volume.

Sainsbury's

According to the detailed ratio analysis of the mentioned organization, it is observed that Sainsbury's also faces huge business losses in the 2020 financial year due to the pandemic.

The figure in **Table 2** represents the financial overview of Sainsbury's over the six financial years. As per the annual report of this organization, Sainsbury's also experiences significant business losses in the 2021 financial year due to the business losses in 2020, and it reduces the overall sales volume of this enterprise by 0.3% (2021).[2] However, while comparing those financial statements with Tesco PLC, it can be considered that Sainsbury's faces minimal business losses from the financial perspective compared with Tesco PLC.

Aldi

For Aldi organization, we consider the financial data from the years 2016 to 2021.

According to **Table 3**, it is observed that Aldi faces huge losses after the 2018 financial year due to inappropriate operational processes. As per the current information, it is also identified that the organization faces a significant reduction in annual profit margin that is reduced by 11.28% in the gross profit margin of the 2018 financial year compared with the previous year (2021).[3] In this regard, it can be considered that Sainsbury's and Tesco PLC are in better financial conditions compared with this enterprise from the perspective of competitive advantages.

Lidl

According to this total ratio analysis of Lidl organization, it is seen that Lidl also got major losses from the year of 2020 years due to the COVID-19 outbreak and post-COVID-19 situation.

[1] http://www.tescoplc.com/
[2] http://www.sainsburys.co.uk/
[3] http://www.craft.co/

From Table 4, it is seen that Lidl was improving its businesses before the situation of the COVID-19 pandemic. After COVID-19, this organization is facing a huge loss in their business that may pose a huge challenge to continuing their business as their liabilities may be increased. In 2019, they get their maximum market share that is almost 10% in the UK; however, it has been reduced after the COVID-19 pandemic.

Results and discussion

It is observed that Tesco PLC faces fundamental business losses in the 2020 financial year due to the COVID-19 pandemic. Sainsbury's also experiences significant business losses in the 2021 financial year due to the business losses in 2020, and it reduces the overall sales volume of this enterprise by 0.3% (see footnote text 2, 2021). Aldi faces huge losses after the 2018 financial year due to inappropriate operational processes, and even Lidl also performed along the same lines with huge losses.

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