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Coca-Cola Financial Performance

Submitted by

Bui Bich Phuong

Student ID: 1911695

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Abstract

Finance plays an important role in the economic activities of any company. The more efficiently a company can raise funds and its proper utilization, the more successful and survival of an organization. This report conducts with financial analysis two biggest beverage enterprises in the United State namely Coca-Cola and Pepsi. The main objective of the report is to evaluate the financial position of Coca-Cola and compare with its competitor. The details are based on the history and finance details of the company were collected through annual reports from 2015 to 2019.

1. Introduction

In America, the Coca-Cola company is known as one of the biggest multinational company, producer, retailer and marketer of beverage which contains a variety of non-alcoholic products (The Coca-Cola Company, 2012). The drink Coca-Cola was founded in 1886 by John Pemberton and Asa Griggs Candler, then the Coca-Cola company was established in 1892 and has been becoming the world's largest beverage company. It was located in Atlanta, Georgia after incorporating in Wilmington, Delaware (Bodden, 2008). According to (The Coca-Cola Company, 2018), Coca-Cola appears in more than 200 countries with the number of employees has over 700,000 people.

The Coca-Cola Company have introduced various types of Coke such as Diet Coke, Caffeine-Free Coca-Cola, Coca-Cola Cherry, Coke Zero, and a special version with lemon (Heble, 2019). In 2013, Coca-Cola started the new communications campaign called "Coming together", which supported its efforts to fight health problems such as obesity (Hellmich, 2013). In 2016, "Taste the feeling" campaign with the involvement of 10 TV commercials promoted selling of Diet Coke and Coke Zero. "Share a Coke" has been known as the most successful campaign of Coca-Cola until now by taking and sharing photos with the hashtag #shareacoke on social media.

Coca-Cola company has become more competitive with other rivals such as Pepsi or Redbull. Its strategy is to use its vast assets-brands and financial strength. This report will be divided into two main parts. Firstly, Coca-Cola's financial performances will be indicated by focusing on key financial ratios. Secondly, it will analysis the investment appraisal that Coca-Cola can consider in the future based on two model projects.

2. Coca cola's financial performances

Ratio analysis is used to measure the financial statements by evaluating several issues with an entity such as its liquidity, efficiency of operations and profitability. The information of ratio will promote and support a company strategy to enhance the usability of the financial statements (M. Healy, G. Palepu, 2012)

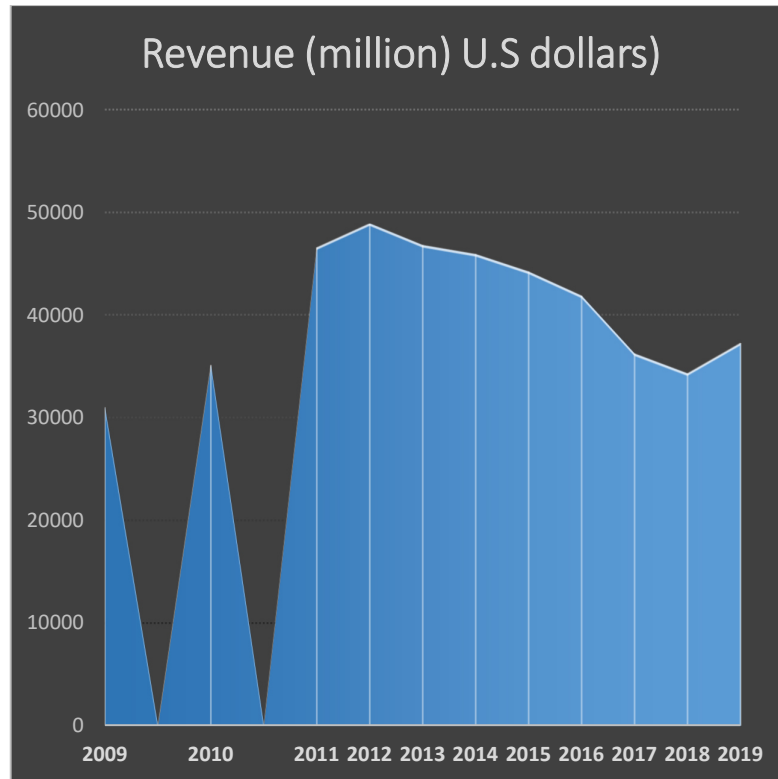


Figure 1: Revenue (million US dollar) of Coca-Cola

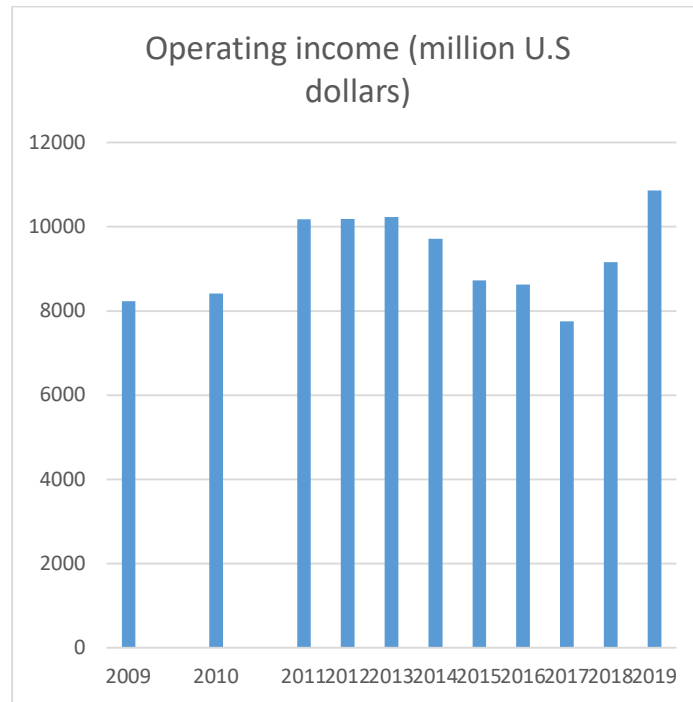


Figure 2: Operating income of Coca-Cola

2.1 Coca cola's financial performance in comparison to major Pepsi cola

2.1.1 Profitability Ratios

“Profitability Ratios measures two aspects related to profits of a company: those elements of operations that contribute to profit and the relationship of profit to total investment and investment by stockholders” (Jay Rich, Jeff Jones, Maryanne Mowen, Don Hansen, 2009). Basically, Profitability Ratios include Gross Margin, Operating Margin and Net Profit Margin. According to (Khan & Jain, 2006), Gross Margin measures a company's profitability, that is the amount remaining after deducting the cost of goods sold or direct costs of earning revenue from revenue. As found in (Chandra, 2007), Operating Margin is the result a firm earns before interest and tax from each dollar of sales. Net Profit Margin measures the overall profitability or net profit (net profit or net loss) of a company (Khan & Jain, 2006).

Profitability Ratios are calculated by the following formula:

$$\text{Gross Margin} = \frac{\text{Gross Profit}}{\text{Sales}}$$

$$\text{Operating Margin} = \frac{\text{Operating Income}}{\text{Sales}}$$

$$\text{Net Profit Margin.} = \frac{\text{Net Income}}{\text{Sales}}$$

Table 1: Profitability Ratios of Coca-Cola (2015-2019) and Pepsi (2019)

Coca-Cola's	2015	2016	2017	2018	2019	Pepsi 2019
Net sales revenue (€ million)	6246	6219	6522	6657.1	7026	55967
Gross profit (€ million)	2327.4	2298.8	2439	2515.3	2645.6	30934
operating income (€ million)	171.3	236.8	589.8	639.4	715.3	8835
Net Income (€ million)	280.7	344	426.5	448.1	488	6095
Year	2015	2016	2017	2018	2019	Pepsi 2019
GROSS MARGIN	0.37	0.37	0.37	0.38	0.38	0.55
OPERATING MARGIN	0.03	0.04	0.09	0.10	0.10	0.16
NET PROFIT MARGIN	0.04	0.06	0.07	0.07	0.07	0.11

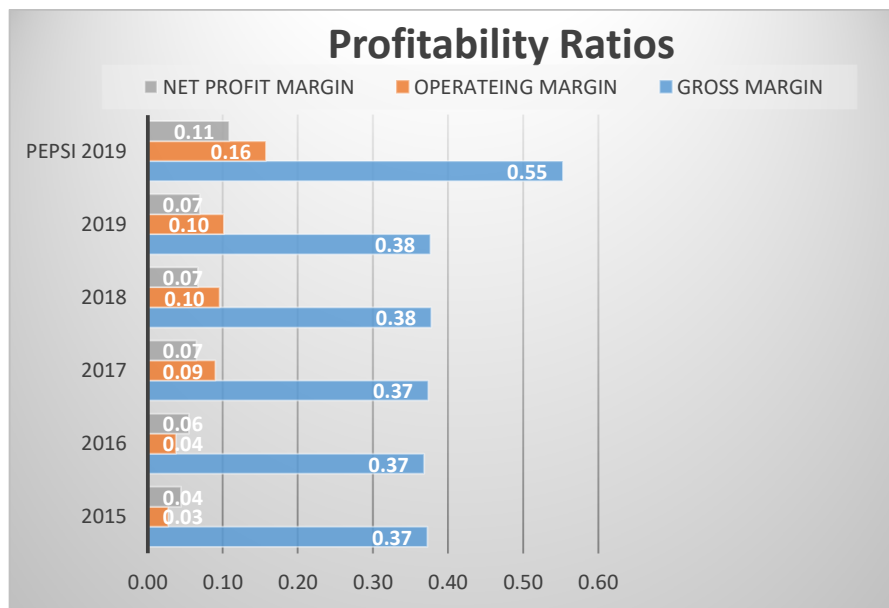


Figure 3: Profitability Ratios of Coca-Cola (2015-2019) and Pepsi (2019)

As can be seen from the table 1 and figure 3, Coca-Cola has shown a good performance in term of profitability ratios.

Gross margin: From 2015 to 2019, Coca-Cola has a slight increase in this ratio from 0.37 in 2015 to 0.38 in 2019. In 2015, Gross Margin of Coca-Cola is 37%, it means that from each 1 pound of net sales revenue, the company can gain 0.37 gross profit. In 2019, Gross Margin of Coca-Cola is 38 %, it means there is 0.38 pound retained from each 1 pound of net sales revenues. Whereas, in 2019 Pepsi showed a very great performance with 55% of gross margin,

which is much higher than that of Coca-Cola. So, from each 1 pound of Net sales revenue, Pepsi can gain 0.55 pound of gross profit.

Operating Margin: From 2015 to 2019, the operating margin of Coca-Cola has shown a significant upward trend. It grows from 0.03 (3%) in 2015 to 0.1 (10%) in 2019. In 2015, the company could make 0.03 pound of operating income (earnings before paying tax and interest) on each 1 pound of net sales revenue, while in 2019, from each 1 pound of net sale revenue, the company can gain 0.1 pound of operating profit. In comparison, Pepsi has showed a great ratio of operating margin with 16% in 2019, so from each 1 pound of net sales revenue, Pepsi can gain 0.16 pound of operating profit.

Net Profit margin: From 2015 to 2019 Coca-Cola has displayed a gradual growth in ratio of net profit margin. When the ratio in 2015 was 0.04 (4%), the result in 2019 is 0.07 (7%). In 2015, from each 1 pound of net sales revenue, the company can gain 0.04 pound of net profit. While, in 2019 from each 1 pound of net sales revenue, the company can gain 0.07 pound of net profit. With the ration of Pepsi, it is 0.11 (11%) in 2019, it means that from each pound of net sales revenue, Pepsi can gain 0.11 pound of net profit.

2.1.2 Liquidity Ratios

Liquidity Ratios are calculated based on the Balance sheet's data to evaluate how the financial strength of a company (Alice C. Lee, John C. Lee, Cheng F. Lee, 2009). Liquidity is divided into Current Ratio, Quick Ratio and Cash Ratio.

Current Ratio measures the ability of an enterprise to pay short-term debts (Tracy, 2012). Quick Ratio is stricter than the current ratio, it measures the company's ability to access cash quickly to support immediate demands (Pinson, 2008). Based on (Tracy, 2012), Cash Ratio is the most difficult part of Liquidity Ratios, which measures a business's ability to meets its debts in the very near term. Cash Ratio is the one that changes most frequently because cash and short-term investment are considered "idle assets, those are not working hard for the business and are redeployed into more attractive asset forms very frequently.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\text{Quick Ratio} = \frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}$$

$$\text{Cash Ratio} = \frac{\text{Cash}}{\text{Current Liabilities}}$$

Table 2: Liquidity Ratios of Coca-Cola (2015-2019) and Pepsi (2019)

Coca-Cola's	2015	2016	2017	2018	2019	Pepsi 2019
Inventory (€ million)	435.20	431.30	416.80	463.20	488.10	2781.60
Cash (€ million)	487.20	573.40	723.50	712.30	823.00	4590.80
Current Assets (€ million)	1868.00	2160.00	2282.30	2438.20	3076.30	14670.20
Current Liability (€ million)	2491.00	1968.00	1896.40	2018.60	2667.20	17050.00
Year	2015	2016	2017	2018	2019	Pepsi 2019
Current ratio	0.75	1.10	1.20	1.21	1.15	0.86
Quick Ratio	0.58	0.88	0.98	0.98	0.97	0.70
Cash Ratio	0.20	0.29	0.38	0.35	0.31	0.27

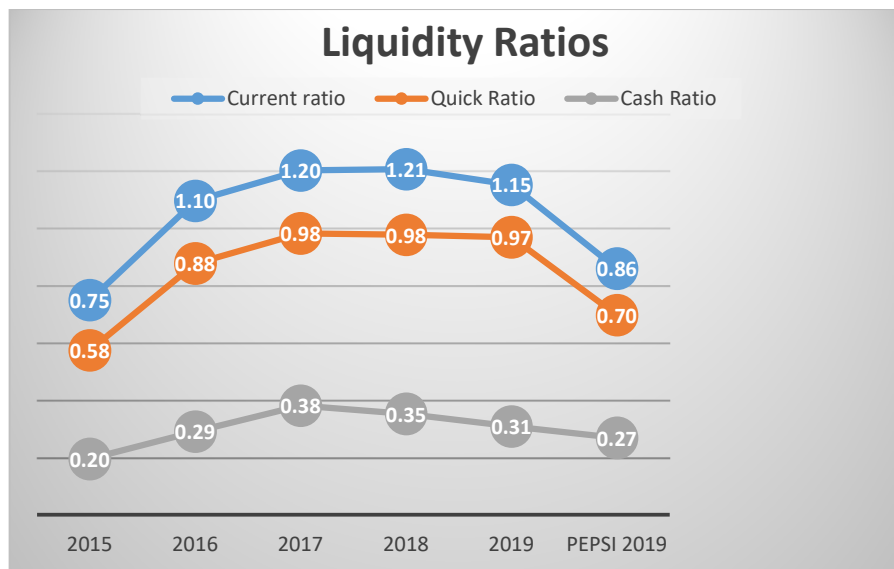


Figure 4: Liquidity Ratios of Coca-Cola (2015-2019) and Pepsi (2019)

As can be seen from the table 2 and figure 4,

Current ratio: The current ratio termed to be better if it is 2:1 (Heikal et al, 2014). Coca-cola seems not to have a good performance with this ratio. In 2015, the ratio was 0.75:1, it means that the company has low liquidity of current ratio. However, it is improved significantly in 2019 with 1.15:1. Compare with that of Pepsi in 2019, Coca-Cola reveals a better liquidity than Pepsi in 2019, where the current ratio of Pepsi has only 0.86:1, which is lower than that of Coca-cola, it means that Coca-Cola has a lower risk of distress or default than Pepsi.

Quick Ratio: The Ratio shows the liquidity of Coca-Cola in the short term. In 2015, this ratio is quite low with 0.58. After that, it increases to 0.97 in 2019 while this ratio of Pepsi was low with 0.70. It shows Pepsi has lower liquidity in the short term than Coca-Cola.

Cash Ratio: The Ratio illustrates the ability of Coca-Cola to repay short term debts. As similar with Quick Ratio, Coca-Cola cash ratio is quite low in 2015 with 0.20 and then grow to 0.31 in 2019. Whereas, Pepsi get the lower Cash Ratio with 0.27. It means Pepsi may get difficulty in repay Short term debt.

2.1.3 Gearing Ratios

The gearing ratio is a type of financial ratio that compares company debt relative to different financial metrics such as total equity. By using Gearing Ratio, investors can assess how a company structures itself, and the amount of risk involved with the chosen structure (CARLSON, 2019).

Debt-Equity Ratio indicates the margin of safety to long-term creditors. A low Debt-Equity Ratio implies the use of more equity than debt which means a larger safety margin for creditors since owner's equity is treated as a margin of safety by creditors and vice versa (Bharat, Tulsian P.C. & Tulsian, 2016)

Debt-to-Capital Ratio is a measurement of a company's financial leverage. Khan & Jain (2006) also found that Debt-to-Capital Ratio is the relationship between creditor's funds and owner's capital can also be expressed in terms of another leverage ratio.

$$\text{Debt-Equity Ratio} = \frac{\text{Total Debt}}{\text{Total Equity}}$$

$$\text{Debt-to-Capital Ratio} = \frac{\text{Total Debt}}{\text{Total Equity} + \text{Total Debt}}$$

Table 3: Gearing Ratios of Coca-Cola (2015-2019) and Pepsi (2019)

Coca-Cola's	2015	2016	2017	2018	2019	Pepsi 2019
total debt	3709	3694.8	3618	3737.9	5513.8	53065
total equity	2824	2869.2	3012.2	2869.2	2700.2	12392
Debt-to - capital Ratio	0.57	0.56	0.55	0.57	0.67	0.81
Debt-Equity Ratio	1.31	1.29	1.20	1.30	2.04	4.28

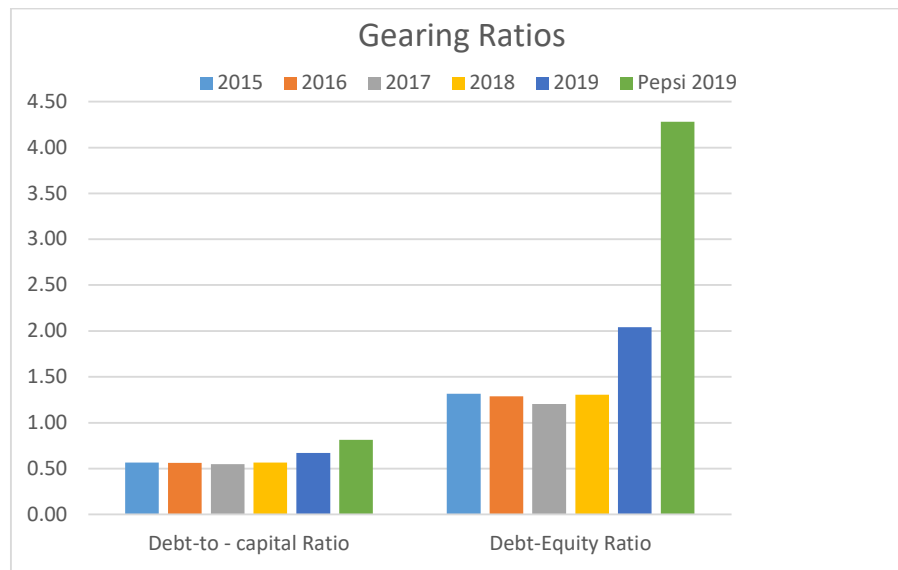


Figure 5: Gearing Ratios of Coca-Cola (2015-2019) and Pepsi (2019)

As can be seen from the table 3 and figure 5,

Debt-to-capital ratio: the ratio shows the Coca-cola financial leverage, the ratio has an upward trend from 0.57 (57%) in 2015 to 0.67 (67%) in 2019. Normally, the ratio is not very high, but in 2019 the ratio is 67%, it means that Coca-Cola has a big percentage of debt, it leads a higher risk of distress for this company. Whereas, Pepsi shows a very high level of debt-to-capital ratio with 0.81 (81%). It means that Pepsi has a not good situation in gearing and it has a higher risk of bankruptcy than Coca-Cola in this term

Debt-to-equity ratio: The ratio indicates an increase in Debt-to-equity from 1.31 in 2015 to 2.04 in 2019. It is considered a high number which can cause negative impact on Coca-Cola. Meanwhile, Pepsi witnesses a significant high in Debt-to-equity with 4.28 in 2019, which may bring a high risk of bankruptcy

2.1.4 Asset Efficiency Ratios

Asset Efficiency Ratios assess how efficiency a corporation uses its assets (Jay Rich, Jeff Jones, Dan L. Heitger, Maryanne Mowen, Don Hansen, 2011).

According to (D. R. Carmichael, Paul H. Rosenfield, 2003), Asset Turnover is used to assess the effectiveness of the company's asset using. Through Asset Turnover ratio, it can be calculated how many sales are generated from each dollar of the company assets.

Fixed Asset Turnover is generally used to measure a company's performance (Clyde P. Stickney, Roman L. Weil, Katherine Schipper, Jennifer Francis, 2009). This effective ratio compares net revenue (in the income statement) with fixed assets (in the balance sheet) and

measures the ability of the company to generate net revenue from asset investments, fixed assets, in particular assets, plants and equipment.

$$\text{Asset Turnover} = \frac{\text{Sales}}{\text{Total Assets}}$$

$$\text{Fixed Asset Turnover} = \frac{\text{Sales}}{\text{Fixed Assets}}$$

Table 4: Asset Efficiency Ratios of Coca-Cola (2015-2019) and Pepsi (2019)

Year	2015	2016	2017	2018	2019	Pepsi 2019
Total assets (€ million)	6533	6564	6630.2	6854.3	8214	65457
Fixed Assets (€ million)	1911	18886	1829.9	1825.8	2105.4	50786.8
Net sales revenue (€ million)	6246	6246	6522	6657.1	7026	55967
ASSET TURNOVER	0.96	0.95	0.98	0.97	0.86	0.86
FIXED ASSET TURNOVER	3.27	0.33	3.56	3.65	3.34	1.10

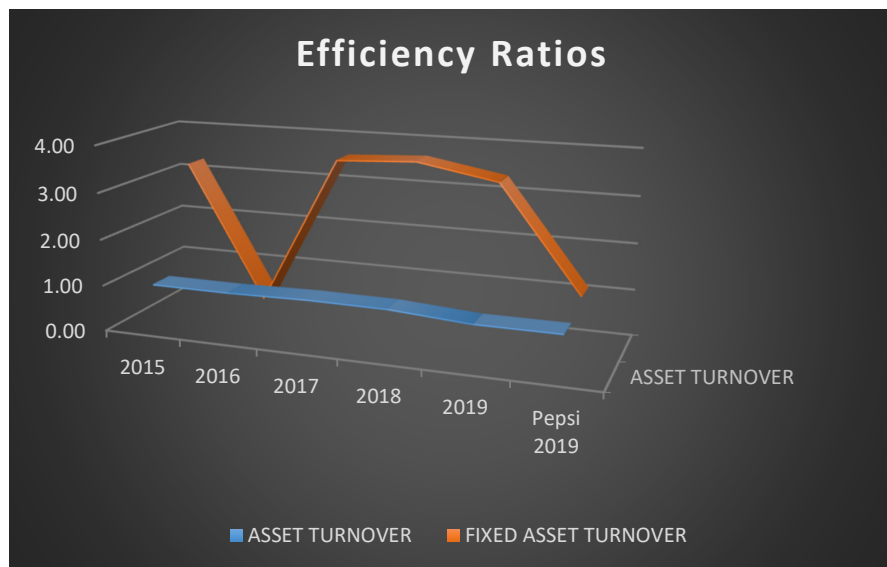


Figure 6: Asset Efficiency Ratios of Coca-Cola (2015-2019) and Pepsi (2019)

Following table 4 and figure 6:

The Asset Turnover: there is a slight decrease in Asset Turnover of Coca-Cola from 2015 to 2019. In 2019, the Asset Turnover of Pepsi is equal with Coca-Cola with 0.86. It means both Coca-Cola and Pepsi are not efficiently using themselves assets to generate sales.

Fixed Asset Turnover: there is an increase in Fixed Asset Turnover of Coca-Cola from 2015 with 3.27 to 2019 with 3.34. Whereas, the Fixed Asset Turnover of Pepsi is much lower with 1.10. It means Coca-Cola has more effectively used investment in fixed assets to generate sales than Pepsi.

2.1.5 Investment Returns Ratios

The Return on Investment measures the ability to make a profit on a business investment capital, indicating a capital invested in the business (Woerheide, 2016)

The return on equity is an indicator of the effectiveness of the use of the equity in the business. This will tell an investor the return gained per share of stock owned.

As found in (Thomsett, 2006), The return on assets ratio is the rate of return on total assets or the average of one dollar will produce how much profit. This ratio shows how effective the assets are. The higher the ROA, the better the assets ability to use assets.

Investment Returns Ratios are calculated by the following formula:

$$\text{Return on Equity} = \frac{\text{Net Income}}{\text{Book Value of Equity}}$$

$$\text{Return on Assets} = \frac{\text{Net Income}}{\text{Total Assets}}$$

Table 5: Investment Return Ratios of Coca-Cola (2015-2019) and Pepsi (2019)

Year	2015	2016	2017	2018	2019	Pepsi 2019
Total assets (€ million)	6533	6564	6630.2	6854.3	8214	65457
total equity (€ million)	2824	2869.2	3012.2	2869.2	2700.2	12392
Net Profit (€ million)	280.7	344	426.5	448.1	488	6095
Return on Equity	0.10	0.12	0.14	0.16	0.18	0.49
Return on Assets	0.04	0.05	0.06	0.07	0.06	0.09

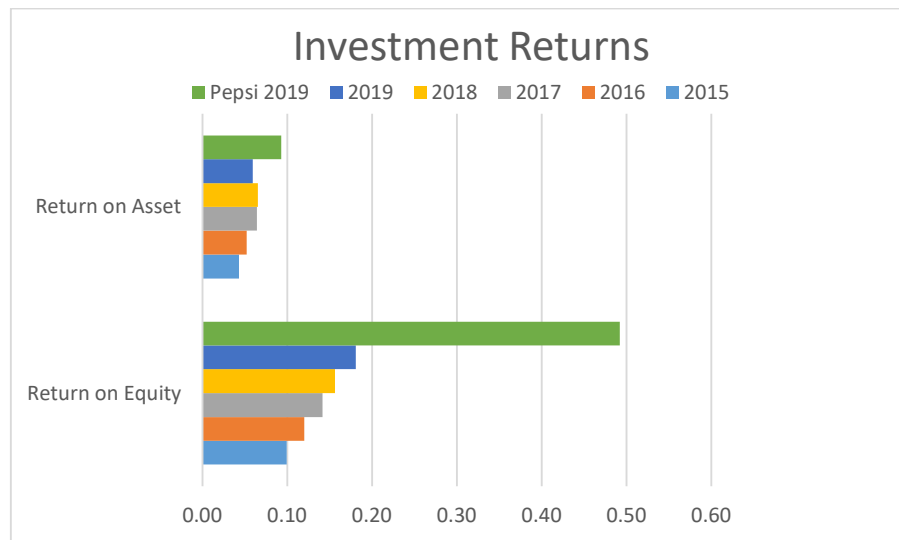


Figure 7: Investment Return Ratios of Coca-Cola (2015-2019) and Pepsi (2019)

As can be seen from table 5 and figure 7:

The return on asset: there is a significant increase in ratio of return on asset of Coca-cola from 2015 to 2019. In 2015, return on asset was 0.04 (4%), it means that from each 1 pound of asset, the company can generate 0.04 pound of net profit. Whereas, in 2019 the ratio is 0.06 (6%), in this year, from 1 pound of asset, the company can gain 0.06 pound of net profit. In comparison, Pepsi shows a very high percentage of return on asset, it has 0.09 (9%), from each 1 pound of asset, Pepsi can gain 0.09 pound of net profit

The return on equity: the ratio of return on equity asset of Coca-cola increases from 2015 to 2019. In 2015, return on equity was 0.1 (10%), it means that from each 1 pound of equity, the company can generate 0.1 pound of net profit. Whereas, in 2019 the ratio is 0.18 (18%), in this year, from 1 pound of equity, the company can gain 0.18 pound of net profit. In comparison, Pepsi shows a very high percentage of return on equity, it has 0.49 (49%), from each 1 pound of equity, Pepsi can gain 0.49 pound of net profit

2.2 Recommendation

To improve financial management of Coca-Cola company, there are some recommendation which can be used to promote key ratios.

Ratios	Recommendations
Liquidity	- Coca-cola should change the capital structure by using more long-term debt to in financing its business, reduce the amount of short-term debt

	- Coca-cola can try in getting rid of some useless assets - Coca-cola can focus on overhead expense
Profitability	- Coca-cola should manage its costs more effectively to reduce total costs - Coca-cola can put more efforts to look for more suppliers with cheaper offered goods prices
Gearing	- Coca-cola can try to improve its profit over the years - Coca-cola can decrease its working capital - Coca-cola can use more equity to finance its business by calling more shareholders
Asset efficiency	- Coca-cola can try to boost its sales - Coca-cola can find methods to employ its assets more efficiency
Investment return	- Coca-cola should try to minimize its cost as well as improve its sales - Coca-cola should sell the inefficient assets which do not bring revenue for the company

3. Coca Cola's investment appraisal for future projects

3.1 Calculation and Recommendation

Assume that Coca-Cola has been gaining its prospects for raising a new investment. The cash flows of 2 promising projects as follows:

Year	0	1	2	3	4
Project A (£m)	-85	10	20	25	65
Project B (£m)	-90	40	35	7	40

Following (Uwe Götze, Deryl Northcott, Peter Schuster, 2007), *Capital investment appraisal* refers to a process facilitating to determinate the firm investments in both short and long term. While according to (Toye Adelaja, 2015), *capital investment appraisal techniques* mention about methods used to evaluate capital investment of the projects, such as Payback Period (PBP), Accounting Rate of Return (ARR), Internal Rate of Return (IRR) and Net Present Value (NPV)

3.1.1 Payback Period (PBP)

Payback Period is the amount of time taking in order to recover the investment cost. In other words, it is how long an investment can meet a break-even point (Belverd E. Needles, Marian Powers, Susan V. Crosson, 2010)

Year	Project A (£m)		Project B (£m)	
	net cash flow	Cumulative net cash flow	net cash flow	Cumulative net cash flow
0	-85	-85	-90	-90
1	10	-75	40	-50
2	20	-55	35	-15
3	25	-30	7	-8
4	65	+35	40	32
Payback	3.46 years		3.2 years	

The PBP of project A is between year 3 and year 4,

$$3 \text{ years} + \frac{\text{Deficit } £30\text{m}}{\text{Deficit } 30£\text{m} + \text{Surplus } £35\text{m}} = 3.46 \text{ years}$$

The PBP of project B is between year 3 and year 4,

$$3 \text{ years} + \frac{\text{Deficit } £8\text{m}}{\text{Deficit } 8£\text{m} + \text{Surplus } £32\text{m}} = 3.2 \text{ years}$$

Recommendation: Based on the results of PBP above, the project A has a longer payback period than that of project B. therefore, Coca-Cola should choose project B where the payback period is 3.2 years.

3.1.2 Accounting Rate of Return (ARR)

As found in (Belverd E. Needles, Marian Powers, Susan V. Crosson, 2010), *Accounting Rate of Return* refers to a technique of accounting with the purpose of measuring profit which is expected a profit of an investment.

$$\text{ARR} = \frac{\text{Average annual Profit after tax}}{\text{Initial Investment}} \times 100$$

With the assumption of ignore taxation as well as inflation, the ARR of the 2 projects can be calculated as follows

Project A:

Year	Project A (£m)		
	Net cash flow	Scarp Value	Depreciation expense (straight-line)
0	-85	0	21.25
1	10	0	21.25
2	20	0	21.25
3	25	0	21.25
4	65	0	21.25

- Depreciation expense (straight-line) per year (£m) = $\frac{85-0}{4} = 21.25$ (£m)
- Average annual accounting profit (£m) = $\frac{(10-21.25)+(20-21.25)+(25-21.25)+(65-21.25)}{4} = 8.75$ (£m)
- Accounting rate of return (%) = $\frac{\text{average annual accounting profit}}{\text{initial investment}} \times 100 = \frac{8.75}{85} \times 100 = 10.29\%$

Project B:

Year	Project B (£m)		
	net cash flow	Scarp Value	Depreciation expense (straight-line)
0	-90	0	22.5
1	40	0	22.5
2	35	0	22.5
3	7	0	22.5
4	40	0	22.5

- Depreciation expense (straight-line) per year (£m) = $\frac{90-0}{4} = 22.5$ (£m)
- Average annual accounting profit (£m) = $\frac{(40-22.5)+(35-22.5)+(7-22.5)+(40-22.5)}{4} = 8$ (£m)
- **Accounting rate of return (%)** = $\frac{\text{average annual accounting profit}}{\text{initial investment}} \times 100 = \frac{8}{90} \times 100 = 8.89\%$

Recommendation: In terms of Accounting Rate of Return, project A has the rate is higher than project B, with 10.29% and 8.89% respectively. Thus, Coca-Cola should choose to follow the project A.

3.1.3 Net Present Value

Following (Khan & Jain, 2007), Net Present Value is the change of future cash inflows and the present value of its investment amount (or cash outflows) in the project time period

NPV calculation:

$$NPV = \sum_{t=0}^N \frac{CF_t}{(1+r)^t} - \sum_{t=0}^n \frac{IC_t}{(1+r)^t}$$

Or

$$NPV = \sum_{t=0}^N \frac{(CF_t - IC_t)}{(1+r)^t}$$

Where

IC_t ($t=0$) is the initial investment in year 0

CF_t ($t=1,2,\dots,n$) are cash flows of the project in year 1,2,3...,n

r is the cost of capital

Project A (with $r = 10.25\%$)

Year	Project A	
	Cash flow (£m)	PV (£m)
0	-85	-85.00
1	10	9.07
2	20	16.45
3	25	18.66

4	65	43.99
NPV _A	3.17	

$$NPV_A = \frac{10}{(1+10.25\%)^1} + \frac{20}{(1+10.25\%)^2} + \frac{25}{(1+10.25\%)^3} + \frac{65}{(1+10.25\%)^4} - 85 = 9.07 + 16.45 + 18.66 + 43.99 - 85 = 3.17 \text{ (£m)}$$

Project B (with r = 10.25%)

Year	Project B	
	Cash flow (£m)	PV (£m)
0	-90	-90.00
1	40	36.28
2	35	28.79
3	7	5.22
4	40	27.07
NPV _B	7.37	

$$NPV_B = \frac{40}{(1+10.25\%)^1} + \frac{35}{(1+10.25\%)^2} + \frac{7}{(1+10.25\%)^3} + \frac{40}{(1+10.25\%)^4} - 90 = 36.28 + 28.79 + 5.22 + 27.7 - 90 = 7.37 \text{ (£m)}$$

Recommendation: as can be seen from the results tables of NPV calculations. Both NPVs are positive, it means that both projects A and B can bring Coca-Cola the return rate more than 10.25% per year in average. However, NPV of project A is £3.17m which is less than NPV of project B which shows £7.37m. Therefore, Coca-Cola should choose project B because it brings higher return for this company compared with project A

3.1.4 Internal Rate of Return

According to (H. Kent Baker, Philip, 2011), the Internal Rate of Return (IRR) is known as the rate of return of an investment. In other words, if the discount rate is equal IRR rate which will lead NPV is Zero. It means that with discount rate of IRR, the present value of cash inflows will be equal the present value of cash outflows:

IRR calculation

$$\sum_{t=0}^n \frac{CF_t}{(1 + IRR)^t} = \sum_{t=0}^n \frac{IC_t}{(1 + IRR)^t}$$

Or

$$NPV = \sum_{t=0}^N \frac{CF_t}{(1+r)^t} - \sum_{t=0}^n \frac{IC_t}{(1+r)^t} = 0$$

Or

$$IRR = R_1 + \frac{NPV_1}{NPV_1 - NPV_2} * (R_2 - R_1) \quad IRR = r_1 + \frac{NPV_1(r_2 - r_1)}{|NPV_1| + |NPV_2|}$$

Where:

NPV₁ is NPV with r₁ (discount rate = r₁) which is above 0

NPV₂ is NPV with r₂ (discount rate = r₂) which is below 0

The results of IRRs as follows:

Calculation the IRR of Project A:

To assume: r₁ = 11% r₂ = 12%

NPV₁ of Project A (with r₁ = 11%)

Year	Project A	
	Cash flow (£m)	PV (£m)
0	-85	-85.00
1	10	9.01
2	20	16.23
3	25	18.28
4	65	42.82
NPV _{1A} >0	1.3387 (>0)	

(with $r_1 = 11\%$)	
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$$NPV_{1A} = \frac{10}{(1+11\%)^1} + \frac{20}{(1+11\%)^2} + \frac{25}{(1+11\%)^3} + \frac{65}{(1+11\%)^4} - 85 = 1.3387 \text{ (£m)}$$

NPV₂ of Project A (with $r_2 = 12\%$)

Year	Project A	
	Cash flow (£m)	PV (£m)
0	-85	-85.00
1	10	8.93
2	20	15.94
3	25	17.79
4	65	41.31
NPV _{2A} < 0 (with $r_2 = 12\%$)	-1.0243 (<0)	

$$NPV_{2A} = \frac{10}{(1+12\%)^1} + \frac{20}{(1+12\%)^2} + \frac{25}{(1+12\%)^3} + \frac{65}{(1+12\%)^4} - 85 = -1.0243 \text{ (£m)}$$

$$\Rightarrow \text{IRR}_A \text{ of Project A} = 11\% + \frac{1.3387 \times (12\% - 11\%)}{1.3387 - (-1.0243)} = 11.565\%$$

$\Rightarrow$ So, with $r = \text{IRR} = 11.565\%$, NPV_A of project A = 0

Calculation the IRR of Project B:

NPV₁ of Project B (with $r_1 = 13.5\%$)

Year	Project B	
	Cash flow (£m)	PV (£m)

0	-90	-90.00
1	40	35.24
2	35	27.17
3	7	4.79
4	40	24.10
NPV _{1B} > 0 (with r ₁ = 13.5%)	1.3 (>0)	

$$NPV_{1B} = \frac{40}{(1+13.5\%)^1} + \frac{35}{(1+13.5\%)^2} + \frac{7}{(1+13.5\%)^3} + \frac{40}{(1+13.5\%)^4} - 90 = +1.3 \text{ (£m)}$$

NPV₂ of Project B (with r₂ = 14.5%)

Year	Project B	
	Cash flow (£m)	PV (£m)
0	-90	-90.00
1	40	34.93
2	35	26.70
3	7	4.66
4	40	23.27
NPV _{2B} < 0 (with r ₂ = 14.5%)	-0.43 (<0)	

$$NPV_{2B} = \frac{40}{(1+14.5\%)^1} + \frac{35}{(1+14.5\%)^2} + \frac{7}{(1+14.5\%)^3} + \frac{40}{(1+14.5\%)^4} - 90 = -0.43 \text{ (£m)}$$

$$\Rightarrow \text{IRR}_B \text{ of Project B} = 13.5\% + \frac{1.3 \times (14.5\% - 13.5\%)}{1.3 - (-0.43)} = 14.25\%$$

⇒ So, with r = IRR = 14.25%, NPV_B of project B = 0

Recommendation: both IRRs of the two projects are higher than cost of capital. It means that two projects can bring good return for Coca-Cola. However, as can be seen from the result

above IRR_A is 11.56 %, which is below than IRR_B which shows 14.25 %. Therefore, based on IRR results, the company should choose project B, as it provides higher return than project A

3.2 The advantages and shortcomings of using investment appraisal technique.

	Advantages	Shortcomings
PBP	Pay Back Period is easy to calculate and communicate (Eugene F. Brigham, Joel F. Houston, 2012) It focuses on the cash flow and liquidity issue. Therefore, it is suitable for the small company or those firms with cash flow issue.	PBP ignores time value of money (there is no discount) It ignores the cash flow after the payback period (IMA, 2013) It does not consider of risk enough (they should also take into account other risks such as the opportunity cost, inflation risk, etc ...) It depends on the discount rate and depends on the project life.
ARR	Accounting rate of return is also easily understood and provides a percentage return which can be compared with a target return (Peter Stimpson, Alistair Farquharson, 2014) It looks at the whole profitability of the project which is the central objective of business decisions.	It ignores the timing of the cash flows, and the time value of money is also ignored due to undiscounted cash flows (Aryasri, n.d.) Because ARR includes all cash inflows, the later cash using in calculation will be less accurate.
NPV	Net present value considers the risks and time value of cash flow (Harry F. Campbell, Richard P. C. Brown, 2003) It is easy to calculate The benefit of the owner is maximized by using NPV.	NPV depends on the discount rate that is essential for calculation. However, it is difficult to determine the discount rate when capital markets fluctuate. It only takes into account the cash inflows and outflows of a particular project without any hidden costs. Therefore, the

		profitability of the project may not be highly accurate (Eugene Brigham, Michael Ehrhardt, 2007)
IRR	Internal rate of return is easy to calculate. With IRR, the comparison of investment opportunities is more convenient (Tinkelman, 2015) Through IRR, it is possible to know what the maximum interest rates a project has It is important basis for calculating the economic benefits of a project or investment.	There are projects that cannot calculate, or even there may be more than one IRR can be found. Internal rate of return depends on the size of the project and depends on the time of investment (Razaq Raj, Paul Walters, Tahir Rashid, 2017) There are limitations when using IRR data to compare with other projects in different time period.

4. Conclusion

In conclusion, this report has successfully provided information about financial statement of Coca-Cola with the comparison of Pepsi. In terms of Profitability Ratios and Liquidity Ratios Coca-Cola has better performance than Pepsi. Furthermore, Coca-Cola shows the high Gearings Ratios which are not good for its financial. Both Coca-Cola and Pepsi have Asset Efficiency Ratios are quite low, however, Coca-Cola has more effectively in using investment in fixed assets. Basing on the financial analysis, the investors can decide which company has less risks before putting money. Last but not least, by calculating and analysing the investment appraisal, it is suggested some good choices which Coca-Cola can consider based on two already projects.

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Appendix - Formulas

Tab.1 Profitability ratios of Coca-Cola (2015-2019) and Pepsi (2019)

Gross Profit Margin = Gross Profit / Sales (exc VAT)

Operating Profit Margin = Operating Profit / Sales (exc VAT)

Net Profit Margin = Net Income / Sales (exc VAT)

Tab.2 Liquidity Ratios of Coca-Cola (2015-2019) and Pepsi (2019)

Current Ratio = Current Assets / Current Liabilities

Quick Ratio = (Current Assets – Inventories) / Current Liabilities

Cash Ratio = Cash / Current Liabilities

Tab.3 Gearing Ratios of Coca-Cola (2015-2019) and Pepsi (2019)

Debt-Equity Ratio = Total Debt / Total Equity

Debt-to-Capital Ratio = Total Debt / (Total equity + Total Debt)

Tab.4 Asset Efficiency Ratios of Coca-Cola (2015-2019) and Pepsi (2019)

Asset Turnover = Sales (exc VAT) / Total Assets

Fixed Asset Turnover = Sales (exc VAT) / Fixed Assets

Tab.5 Investment Return Ratios of Coca-Cola (2015-2019) and Pepsi (2019)

Return on Equity = Net Income / Book Value of Equity

Return on Assets = Net Income / Total Assets