COVER PAGE AND DECLARATION

	Master of Business Administration (M.B.A.)
Specialisation:	MBA international business
Affiliated Center:	CEO business school
Module Code & Module Title:	MGT570 : financial management
Student's Full Name:	Mohammad Ibrahim Amin Alshaikh Hasan
Student ID:	EIU2020675
Word Count:	4000
Date of Submission:	30-august-2022

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E-SIGNATURE: m.Ibrahim

DATE: 30- august - 2022

EIU Paris City Campus
Address: 59 Rue Lamarck, 75018 Paris, France | **Tel:** +33 144 857 317 | **Mobile/WhatsApp:** +33607591197 | **Email:** paris@eiu.ac

EIU Corporate Strategy & Operations Headquarter
Address: 12th Fl. Amarin Tower, 496-502 Ploenchit Rd., Bangkok 10330, Thailand | **Tel:** +66(2)256923 & +66(2)2569908 | **Mobile/WhatsApp:** +33607591197 | **Email:** info@eiu.ac

Financial Management

MGT570

Carrier corporation financial reports review & analysis.

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1. Introduction:

Carrier company, a specialized air conditioning and refrigeration solutions. With a history of more than 100 years, the company providing equipment's and technology to improve the indoor air quality. The company products serve the residential, commercial, and industrial segments.

The company performing multi billions yearly sales with 10's of millions generated net-income. The company showing a stable, uniform performance across the years regarding operations and expenses.

This report aimed to show the financial health of the company and recommendations for additional investments to enlarge the profits.

2. Financial records:

The last published 4 years financial statements for the carrier manufacturing company obtained and summarized for review. The income statement, balance statement and cash flow statement. (carrier, meet the moment, 2021 annual report and carrier reports second quarter 2022)

2.1.Income statement, years 2019- 2022:

	For the year ended December 31			Till June 30
In millions, except share amounts	2019	2020	2021	2022
Net sales				
Product sales	$ 15,380	$ 14,347	$ 17,241	$ 8,832
Service sales	3,248	3,109	3,399	1,033
	18,608	17,456	20,613	9,865
Cost and expenses				
Cost of product sold	(10,890)	(10185)	(12,300)	(6,361)
Cost of services sold	(2,299)	(2,162)	(2,333)	(764)
Research and development	(401)	(419)	(503)	(247)
Selling, general and administrative	(2,761)	(2,820)	(3,120)	(1,215)
	(16,351)	(15,586)	(18,256)	(5,587)
Equity method investment net earning	236	207	249	159
Other income (expense), net	(2)	1,006	39	1,119
Operating profit	2,491	3,083	2,645	2,556
Non-service pension (expense) benefit	154	60	61	(2)
Interest (expense) income, net	27	(288)	(306)	(109)
Income from operation before income taxes	2,672	2,855	2,400	2,445
Income tax (expense) benefit	(517)	(849)	(699)	(471)
Net income from operations	2,155	2,006	1,701	1,974
Less: non-controlling interest in subsidiaries earnings from operations	39	24	37	22
Net income attributable to common shareowners	$ 2,116	$ 1,982	$ 1,664	1,952

Earnings per share				
Basic	$ 2.44	$ 2.29	$ 1.92	$ 2.30
Diluted	$ 2.44	$ 2.25	$ 1.87	$ 2.25
Weighted-average number of shares outstanding				
Basic	866.2	866.5	867.7	849.5
Diluted	866.2	880.2	890.3	868.4

2.2.Balance statement, years 2019-2022:

	For the year ended December 31			Till June 30
In millions, except share amounts	2019	2020	2021	2022
Assets				
Cash and cash equivalents	$ 952	$ 3,115	$ 2,987	$ 3,017
Accounts receivable, net	2,444	2,781	2,403	2,823
Contract assets, current	806	656	503	712
Inventories, net	1,332	1,629	1,970	2,350
Assets held for sale	-	-	3,168	-
Other assets, current	327	343	376	374
Total current assets	5,959	8,524	11,407	9,276
Future income tax benefits		449	563	566
Fixed assets, net		1,810	1,826	1,805
Operating lease right-end-use assets		788	640	595
Intangible assets, net	1,083	1,037	509	458
Goodwill	9,884	10,139	9,349	9,067
Pension and post-retirement assets		554	43	31

Equity method investments		1,513	1,593	1,671
Other assets		279	242	193
Total assets	$ 22,406	$ 25,093	$ 26,172	$ 23,662
Liabilities and equity				
Accounts payable	1,701	$ 1,936	$ 2,334	$ 2,403
Accrued liabilities		2,471	2,561	2,430
Contract liabilities, current		512	415	444
Liabilities held for sale		-	1,134	-
Current portion of long-term debt		191	183	269
Total current liabilities	4,469	5,110	6,627	5,546
Long-term debt	75	10,036	9,513	8,298
Future pension and past-retirement obligations		524	380	366
Future income tax obligations		479	354	335
Operating lease liabilities		642	527	490
Other long-term liabilities		1,724	1,677	1,635
Total liabilities	7,971	18,515	19,078	16,670
Commitments and contingent liabilities				
Equity				
Common stock, par value $0.01; 4,000,000,000 shares authorized; 873,064,219 and 867,829,119 shares issued; 863,039,097 and 867,829,119	9	9	9	9
Treasury stock – 10,375,654 common shares	-	-	(529)	(1,543)
Additional paid-in capital		5,345	5,411	5,441
Retained earnings	-	1,643	2,865	4,564

Accumulated other comprehensive income (loss)		(745)	(989)	(1,775)
Non-controlling interest	333	326	327	296
Total equity	14,435	6,578	7,094	6,992
Total liabilities and equity	22,406	$ 25,093	$ 26,172	$ 23,662

2.3.Cash flow statement, years 2019-2022:

In millions	2019	2020	2021	2022
Operating activities				
Net income from operations	$ 2,155	$ 2,006	$ 1,701	$ 1,974
Adjustment to reconcile net income from operations to net cash flows from operating activities				
Depreciation and amortization	335	336	338	155
Deferred income tax provision	(122)	97	(74)	(17)
Stock-based compensation cost	52	77	92	41
Equity method investment net earnings	(236)	(207)	(249)	(159)
Impairment charge on minority-owned joint venture investments	108	72	2	
(gain) loss on sale of investment and businesses	-	(1,123)	2	(1,119)
Changes on operating assets and liabilities				
Accounts receivable, net	(129)	49	(97)	(483)
Contract assets, current	23	(9)	(47)	(224)
Inventories, net	(2)	(240)	(408)	(435)
Other assets, current	62	3	(11)	(37)
Accounts payable and accrued liabilities	(296)	237	829	79

Contract liabilities, current	(18)	46	51	42
Defined benefit plan contributions	(36)	(41)	(47)	(6)
Distributions from equity method investments	158	169	159	15
Other operating activities, net	9	220	(4)	40
Net cash flows provided by (used in) operating activities	2,063	1,692	2,237	(170)
Investing activities				
Capital expenditures	(243)	(312)	(344)	(122)
Proceeds on sale of investments	6	1,377	7	
Investment in businesses, net of cash acquired	-	-	(366)	(38)
Settlement of derivative contracts, net	-	40	4	(123)
Other investing activities, net	(22)	1	7	(16)
Net cash flow provided by (used in) investing activities	(259)	1,106	(692)	2,645
Financing activities				
(decrease) increase in short-term borrowings, net	25	(23)	13	(22)
Issuance of long-term debt	107	11,784	140	21
Repayment of long-term debt	(138)	(1,911)	(704)	(1,127)
Repurchases of common stock	-	-	(527)	(1,014)
Dividends paid on common stock	-	(138)	(417)	(257)
Dividends paid of non-controlling interest	(28)	(48)	(42)	(22)
Net transfers of UTC	(1,954)	(10,359)	-	
Other financing activities, net	6	14	(25)	(13)
Net cash flow provided by (used in) financing activities	(1,982)	(681)	(1,562)	(2,434)

Effect of foreign exchange rate changes on cash and cash equivalents	1	45	(16)	(41)
Net increase (decrease) in cash and cash equivalents and restricted cash, including cash classified in current assets held for sale	(177)	2,162	(33)	-
Less: change in cash balances classified as assets held for sale	-	-	60	
Net increase (decrease) in cash and cash equivalents and restricted cash	(177)	2,162	(93)	
Cash, cash equivalents and restricted cash, beginning of period	1,134	957	3,119	3,025
Cash, cash equivalents and restricted cash, end of period	957	3,119	3,026	3,025
Less: restricted cash	5	4	39	8
Cash and cash equivalents, end of period	$ 952	$ 3,115	$ 2,987	$ 3,017

3. Performance evaluation:

Carrier company use a SMART KPI's to follow-up and track their financial performance and the company operational healthy situation. A long with other operational KPI's, the financial performance KPI's allows the company managers plan and set future company strategic goals. (Wright, 2022)

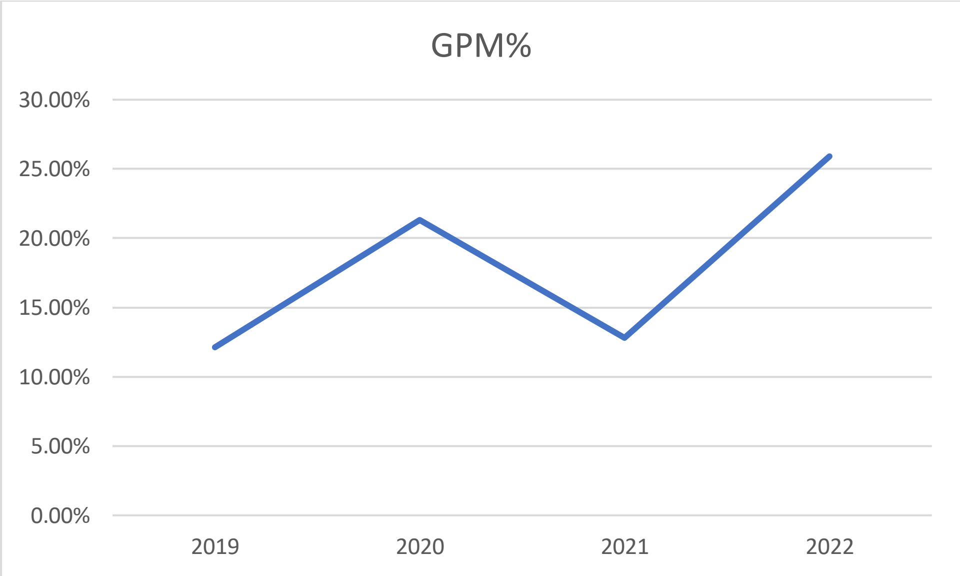
3.1.Profitability:

To measure and evaluate the company profitable status, 3 KPI's were considered and continuously monitored and tracked in semi-annually basis.

- **Gross profit margin indicator (GPM):**

GPM = Gross Profit ÷ Net Sales

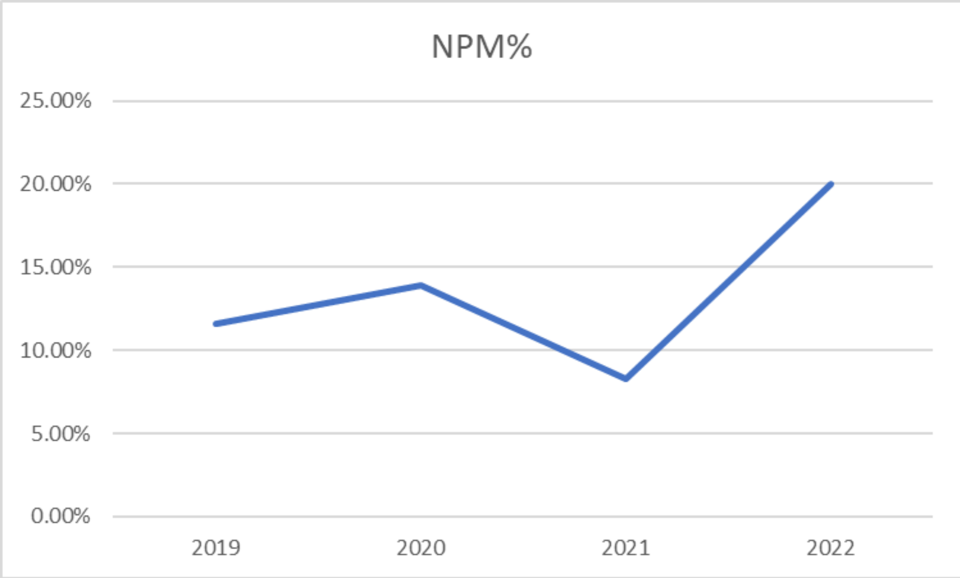
	2019	2020	2021	2022
Gross profit	2,257	3,083	2,645	2,556
Net Sales	18,608	14,456	20,613	9,865
GPM%	12.13%	21.33%	12.83%	25.91%



- **Net Profit Margin indicator (NPM):**

NPM = Net Profit ÷ Net Sales

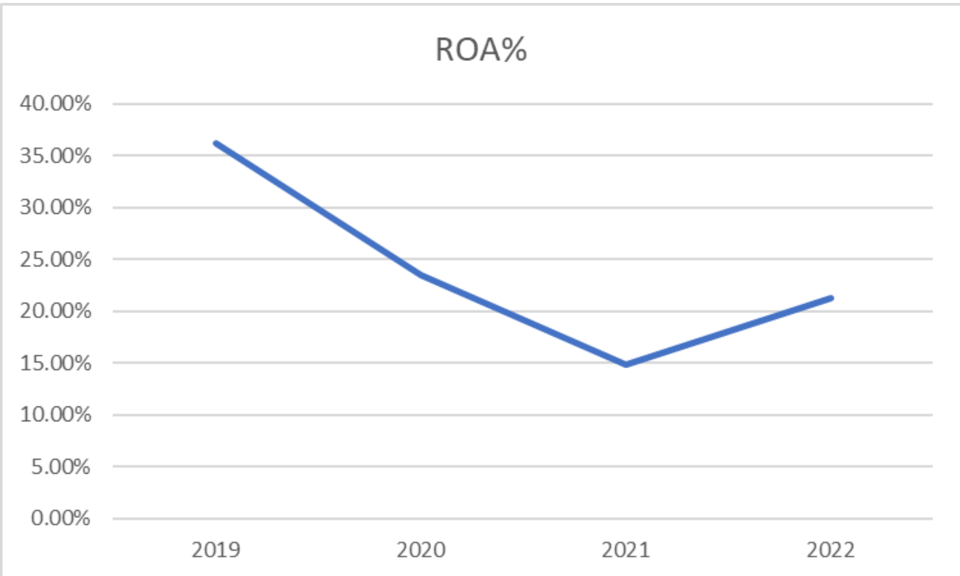
	2019	2020	2021	2022
Net profit	2,155	2,006	1,701	1,974
Net Sales	18,608	14,456	20,613	9,865
NPM%	11.58%	13.88%	8.25%	20.01%



- **Return on Asset (ROA):**

ROA = Net Profit ÷ average total assets

	2019	2020	2021	2022
Net profit	2,155	2,006	1,701	1,974
Total average asset	5,959	8,524	11,407	9,276
ROA%	36.16%	23.53%	14.91%	21.28%



3.2.Efficiency:

Its important for carrier to keep analyzing the efficiency of investment utilization and assets turnover. A turnover KPI's assumed in the yearly financial report.

- **Inventory turnover**

Inventory turnover = COGS ÷ average inventory

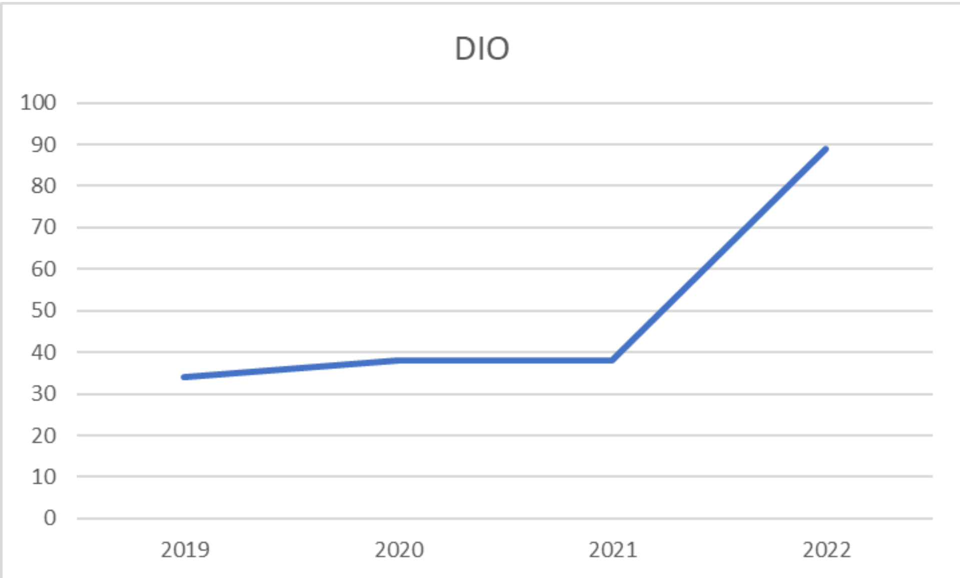
Average inventory = (beginning inv. + ending inv.)/2

	2019	2020	2021	2022
COGS	15,380	14,347	17,347	8,832
Average inventory	1,347.5	1,480.5	1,799.5	2,160
Inventory turnover	11.4	9.7	9.64	4.1

- **Day's inventory outstanding (DIO):**

DIO = (average inventory ÷ COGS) x 360

	2019	2020	2021	2022
Average inventory	1,347.5	1,480.5	1,799.5	2,160
COGS	15,380	14,347	17,347	8,832
DIO	34	38	38	89



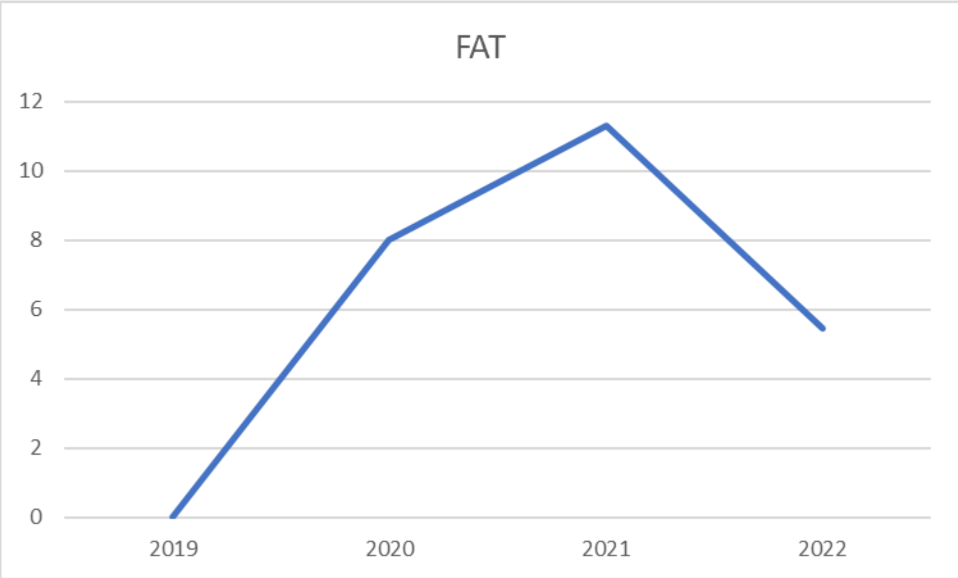
- **Fixed assets turnover (FAT):**

  To assess the efficiency of the company from generating sales from the existing fixed assets, which mean the max utilization of available assets.

FAT = net sales / average fixed assets

	2019	2020	2021	2022
Net sales	18,608	14,456	20,613	9,865
Average fixed assets	-	1,810	1,826	1,805

FAT	-	7.99	11.29	5.47

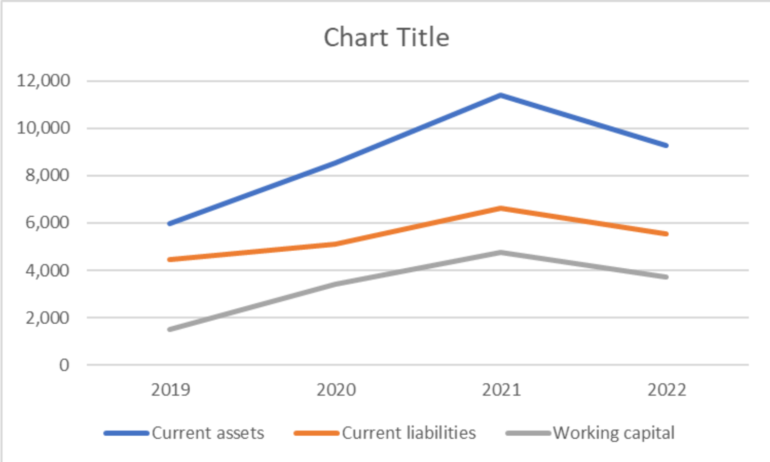


3.3.Short-term solvency:

Working capital KPI, help the company to assess its ability to cover the short tern obligations, and helps in understanding the general liquidity situation.

- **Working capital = current assets – current liabilities**

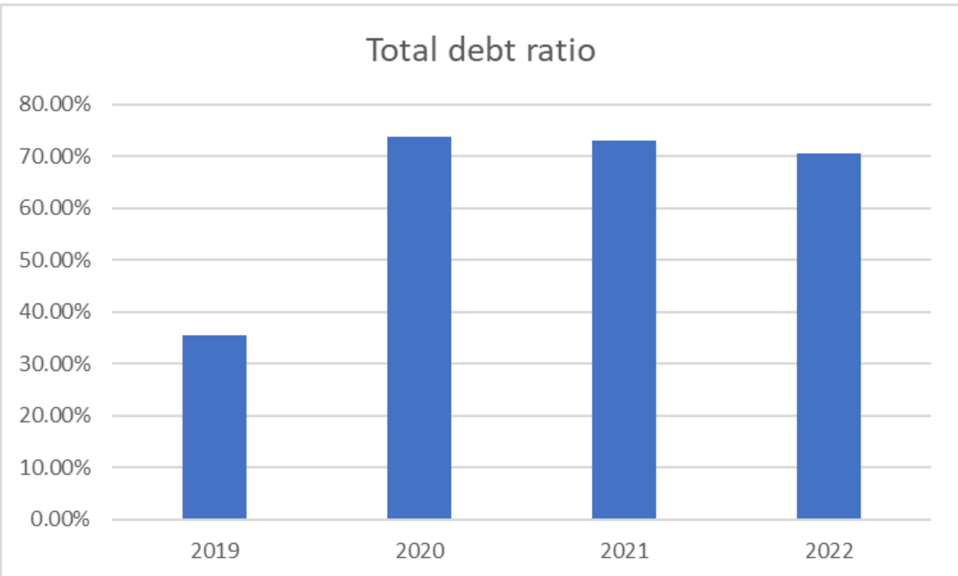
	2019	2020	2021	2022
Current assets	5,959	8,524	11,407	9,276
Current liabilities	4,469	5,110	6627	5,546
Working capital	1,490	3,414	4,780	3,730



3.4.Long-term solvency:

- **Total debt ratio = (total assets – total equity)/total assets**

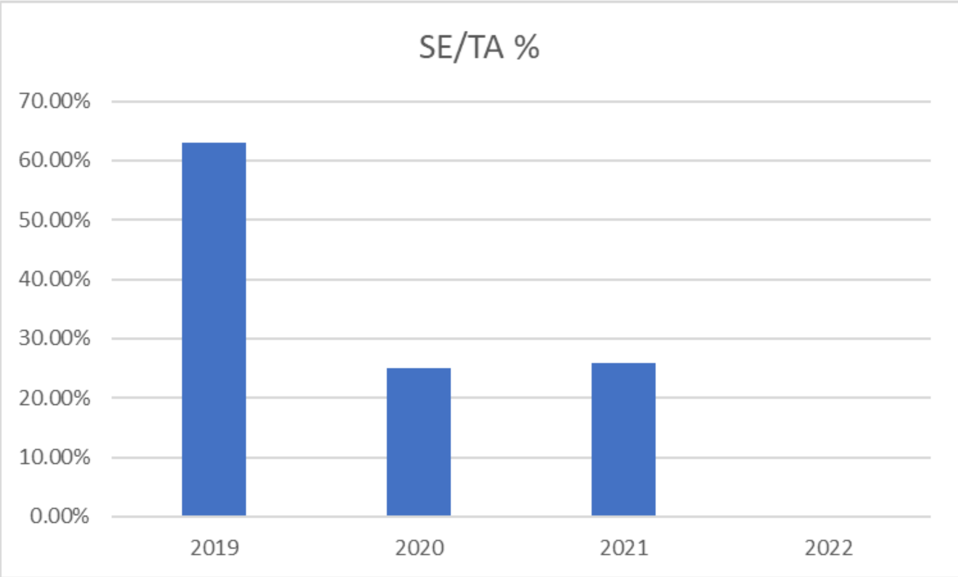
	2019	2020	2021	2022
Total assets	22,406	25,093	26,172	23,662
Total equity	14,435	6,578	7,094	6,992
Total debt ratio	35.5 %	73.7 %	72.9 %	70.4 %



3.5.Market-based ratios:

- **Total shareholder equity/total assets (SE/TA) indicator:**

	2019	2020	2021	2022
Total shareholder equity	14,102	6,252	6,767	-
Total assets	22,406	25,093	26,172	23,662
SE/TA %	62.94%	24.92%	25.86%	-



- **Cash Conversion Cycle (CCC):**

CCC = DIO + DSO – DPO

DIO	Beginning inventory	1,629	52.6
	Ending inventory	1,970	
	COGS	12,300	
DSO	Beginning receivable	2,781	54.9
	Ending receivable	2,403	
	Revenue	17,241	
DPO	Beginning payable	1,936	63.4

	Ending payable	2,334	
	COGS	12,300	
CCC	**DIO + DSO - DPO**		**44.1 Day**

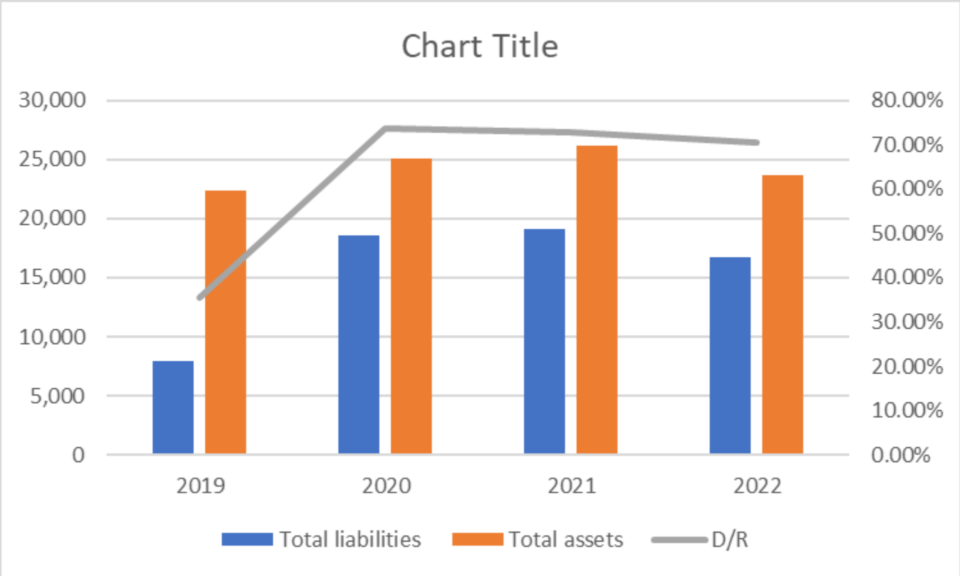
3.6.Leverage ratio

Measuring the company debt ground base is essential for the investors and lenders to assess carrier ability of meeting its obligations and paying off its depts.

- **Debt to Asset Ratio (D/R) indicator:**

D/R = total liabilities / total assets

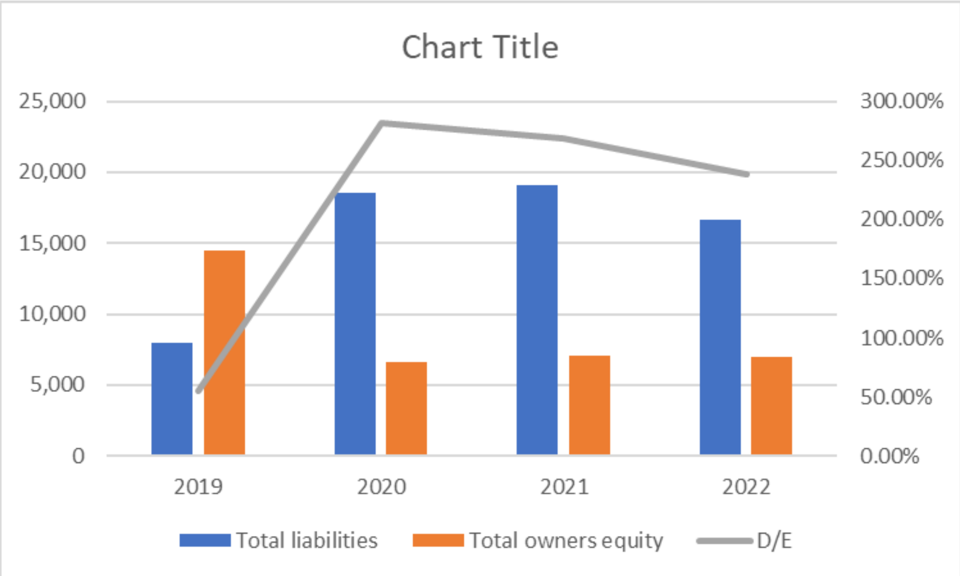
	2019	2020	2021	2022
Total liabilities	7,971	18,515	19,078	16,670
Total assets	22,406	25,093	26,172	23,662
D/R	35.58 %	73.79 %	72.89 %	70.46 %



- **Debt to equity ratio indicator (D/E):**

D/E = total liabilities / total owners' equity

	2019	2020	2021	2022
Total liabilities	7,971	18,515	19,078	16,670
Total owners' equity	14,435	6,578	7,094	6,992
D/E	55.2 %	281.4 %	268.9 %	238.4 %



4. Financial recommendation:

Considering the indicators and KPI's, revels a critical situation for the company in the last years. The company working on a high/risky debt status and in-effeciency in utilizing the inventory material

- **GPM indicator:**

From the gross profit margin (GPM) indictor, it can be seen a high fluctuation in the COGS in relative to sales, ranging between 12 – 26%. For similar industries, the usual GPM range between 45 - 60%.

Recommendation to review the sales price strategy and the cost of material to insure reliability and suitability to the operations.

- **NPM indicator:**

It’s a measure of effectiveness of the business in generating profits out of the total revenues. The higher the better. The company used to have a NPM in the range of 10% (or less), which is quite low. For the year 2022, the NPM raised to 20% which its good and higher than the usual in the market.

Even we are a company who mainly looking for profits to satisfy the shareholders expectations, but also extremely high ratio should be an indication of something strange and need analysis to assure of no un-expected threats in the near future.

Recommendation to analyze competitors and market to asses the reason for this double NPM percentage

- **Return on asset indicator:**

ROA indicators help in understanding wither if the amount of invested money will bring a high return or not. With higher ROA, it will encourage investors and shareholders to invest more money on the company.

The trend for ROA was showing declining for the years 2020 and 2021, which was expected due to the global COVID19 pandemic. For 2022 its back again to advance in slow rate due to international political situation Ukrain-Russia conflict and US-China trade competition.

Recommendations to analysis the business to reduce the cost of product and services by 10-15% will improve the overall ROA.

- **Inventory turnover indicator & Day’s inventory outstanding indicator:**

Such indicator helps in visualizing the efficiency of usage for the stock row material in warehouse. As we understand the material cost a fortune of millions, so we need to insure they are not idle in storage for long time, idle items indicate as a non-used money or waste of money which can be utilized in more meaningful ways to support the investment.

The usual recommended value, compared to historical data and similar industries, around 10 times (36 day).

It's noted the value declining below 10 for the years 2020 and 2021. And to bellow 5 for the year 2022.

Recommendation for an action plan must be prepared with solutions:

- Row material forecasting procedure evaluation.
- Utilizing ERP system for material planning and forecasting
- Study the availability of slow-moving items
- Subdivide inventory into categories with local/abroad material, slow/fast moving material and rebuild the stocking procedure to insure the fast utilization cycle.

- **Fixed assets turnover (FAT) indicator:**

It's always required to generate high sales out of the invested amount of money, the fixed assets represent the big portion of the investment. This indicator shows how well the company make its fixed investment and not wasted on non-essential and luxurious non-productive assets.

A comparison between most recent years shows a relatively non-stable ratio. Which can indicate a lower in sales value or new fixed assets introduced. With review on the net sales revels how the sales decreasing for the recent year compared to previous year with fairly constant fixed assets.

Net sales				
Product sales	$ 15,380	$ 14,347	$ 17,241	$ 8,832
Service sales	3,248	3,109	3,399	1,033
	18,608	17,456	20,613	9,865

Fixed assets, net	-	1,810	1,826	1,805

Recommendation for an action plan should be set to improve the and increase the sales and looking for new markets.

- Marketing plan to access new market segment
- Marketing campaign to make carrier product the most favorable in the market
- Price review.

- **Short/long-term solvency indicator:**

This indicator used to estimate the company ability to fulfills its short and long term obligations and liabilities, rents, payables, bills, wages,…etc.

For carrier company working capital ratio indicator higher than 2, represent a stable short term financial status and the ability of fulfilling its short-term obligations.

Working capital	1,490	3,414	4,780	3,730

- **Leverage (debts) indicator:**

Analyzing the leverage indicators shows the company in the last 3 years is running at risky debt situation. Most of the company operation are running from debt investment which can lead to:

  - Investors trust compromising
  - Lenders fears
  - Damaging the available cash flow
  - Risk of bankruptcy

Recommendation to minimize debt and properly using the available assets including the inventory.

- **Cash Conversion Cycle (CCC) indicator:**

Carrier should enhance it cash cycle by reducing its DIO and inventory time. A new production procedure with better productivity is required.

5. Investment's opportunity:

For the carrier company, and during the COVID19 pandemic, a new business opportunity found for hygienic, IAQ equipment's and energy saving. a business development and R&D team established to evaluate the required investment and ability of utilizing the already available infrastructure (machinery, buildings) and the targeted market.

- Air purification package unit
- Air filtration for surgical and critical application room.
- Air recovery machines for power saving.

Carrier company already do have the operational investment which required to build, and mass produce the new developed equipment's, and with only slight modification on CNC machinery programming and molds adjustment it can be used to fabricate the new machines.

The required new investment required as bellow:

1- New designs
2- Certification and licensing
3- New assembly line (3 lines)
4- R&D commissioning facility
5- Training (production, testing, commissioning)
6- Inventory for new material.

Investment capital budgeting through analysis and study plan prepared to determine return over first 5 years of operation of the new suggested new investment.

Assumptions made:

- Straight-line depreciation with Zero book value after 10 years (so yearly depreciation
- Assuming the selling price of machines after 5 years 350,000
- Volume of sales counted considering projected customer and market segment analysis

	years	0	1	2	3	4	5
	beginning cash outflow						
	CAPEX						
	real estate (buildings)	1,000,000					
	equipments	500,000					
	OPEX						
	working capital	130,000					
	training	50,000					
	certification	40,000					
	total cost	1,720,000					
	cash inflow						
assumption	volume of sales (unit)	0	100	150	160	180	190
assumption	sales price	0	5,000	5,000	5,000	5,000	5,000
projected	revenue	0	500,000	750,000	800,000	900,000	950,000
assumption	(COGS)	0	100,000	150,000	160,000	180,000	190,000
projected	gross profit	0	400,000	600,000	640,000	720,000	760,000
	(G,A,S)	0	50,000	75,000	80,000	90,000	95,000
	EBIT	0	350,000	525,000	560,000	630,000	665,000
	(Tax 16%)	0	56,000	84,000	89,600	100,800	106,400
	Net income	0	294,000	441,000	470,400	529,200	558,600
assumption	"+Depreciation"	0	50,000	50,000	50,000	50,000	50,000
	cash inflow	0	344,000	491,000	520,400	579,200	608,600
	working capital (OPEX) recover	0	0	0	0	0	220,000
	NET salvage value	0	0	0	0	0	100,000 = (350,000 - 250,000)
	NET salvage value after TAX						84,000
	Net cash inflow	0	344,000	491,000	520,400	579,200	912,600

According to carrier, its only permitted for a project doesn't exceed 40% of its capital

40% of capital = 40% x 7,094,000,000 = 2,837,600,600

So the projected project can by proceeded due to its low capital value **(1,720,000)** compared to available equity.

To be able of taking a decision about to proceed in the new project a NPV must be calculated to assess the feasibility of the project.

NPV = FV / (1+WACC)^{n}

WACC calculation:

Equity / debt (liabilities) percentages

Equity/asset %	Liability/asset %	Assets
7,094	19,078	26,172
27.11%	72.89%	100%

So the project will be financed 27% from the company own money, and 73% by debts.

Cost of debt	
rd	15%
Tax rate	30%
rd after tax	15% x (1 - 30%) = 10.5%
WACC debt	72.89% x 10.5% = 7.65345%
Cost of equity	
Bond yield[1]	3.09%
Risk premium[2]	4.24%
re	3.09 + 4.24 = 7.33%
WACC equity	27.11% * 7.33% = 1.987163%
WACC	9.622613 %

1. Bloomberg (2022). Markets, rates-bonds, government bonds.
2. Damodaran, 2022

Calculating the NPV:

WACC = 9.622613%						Total
Future value (FV)	344,000	491,000	520,400	579,200	912,600	2,847,200
Present value (NPV)	313,803.67	408,583.85	395,036.15	401,077.18	576,473.99	2,094,974.84

So, based on NPV, the present value of project returns higher than the projected cost and its and it will add value to the investors. And project considered successful

Projected project total cost	1,720,000
NPV value	2,094,974.84
Recommendation Accept the project	

- Use company cash or returned earning.

For carrier, its recommended to mix between its own cash and the returned earning, the shareholder are likely expecting to receive some dividends on yearly basis.

For the current running operating year (2022), the expected retained earning would be much higher than last year, which gives the company the power if cutting 25% of the dividends and invest them on the new proposed profitable project. The remaining 75% of the project value can be secured through company own money or as a loan.

6. Returned earning/dividends

With the end of each fiscal year, investors and shareholders will be closely looking for the company decision of paying returned earning or not, such decision will highly has its influence on the next year total operation and investment plan and the shareholders trust and willingness to keep or sell their share. The financial team along with the top management analyzed the risk/opportunity of paying or re-investing the returned earning.

Paying dividends	
Risk	Opportunity[1]
Future expansion plans hindering	Investors increased satisfactions and trust

Cash and liquidity limitations	Reflecting a positive image in the market for the company strength resulting of a greater demand for company stock and higher stock price
	Sending a positive image about company future prospects and performance
	Attracting new investors

1. (Amy fontanelle, 2021)

Not paying dividends	
Risk	Opportunity
Market stock value lowered	Utilize the cash in acquisitions and expansion plans
	Paying debts and controlling leverage ratio into acceptable limits
	Higher cash flow and support the company position in front of creditors

Conclusion:

With carrier company, it's been a practice of continually paying dividends on yearly basis. And investors had a stable income. With the decision of cutting the returned earning will do have impact on the market position and stock price.

Considering the 2022 year has the highest earning per share and highest returned earning. Hence its recommended for carrier to pay partial dividends, 75% of the returned earning, and keep the 25% for expansion and future plans.

Retained earnings	4,564
Dividends to pay	3,423

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