Summer Internship Report on
Equity Research Project
On Specialty Chemical Sector
May-July 2020
Company- 'The Money Roller'

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Date of Submission: 18th July 2020

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Project Title: Equity Research Project on Specialty Chemical Sector

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Date of Report: 18th July, 2020.

Purpose of Report: To provide the information about analysis performed on Specialty Chemical Sector during summer internship.

Prepared for: Institute of Management, Nirma University

Submitted to: Dr. Jayesh P. Aagja

Acknowledgement

The summer internship opportunity I had with The Money Roller was a great chance of leaning. Therefore, I consider myself grateful to be part of this organisation for my internship, during the course of the current COVID. I am also grateful to get a chance to work with expert who helped me throughout this internship period of eight week.

I would like to use this opportunity to express my deepest gratitude towards Corporate Relations Cell (CRC) of Institute of Management, Nirma University for allowing to pursue my internship with the organisation. I would also like to thank Dr. Jayesh P. Aagja, my mentor who guided and encouraged me throughout the summer internship.

I would also like to express my deepest thanks to Mr. Janak Shah, co-founder of The Money Roller who was responsible for carrying out the project. He was my mentor and also guided and motivated me throughout the project. It is his expertise in the field of equity research that helped me in completing this internship and making my research worth.

I would also take this opportunity to express my heartiest gratitude towards Mr. Ritesh Chavan, co-founder of The Money Roller, for his constant support in carrying out this research project. At last, I would like to thank The Money Roller Team for providing the necessary support throughout my internship.

Rawleen Kaur Kapoor

(191141)

Executive Summary

This report is made with the sole purpose of presenting my views on Specialty Chemical sector to the readers. This report will also present my views on the potential investment that can be made in this sector. The report contains data that is obtained from the reliable source and the views present in this report purely presents my point of view and opinion may vary from person to person.

Specialty chemicals is one of the sectors in which government is giving incentives under the program 'Make in India' by reducing the import duty on certain chemicals. India's chemical sector contribute 1.2% of the GVA. It also forms 3% of the overall global trade in specialty chemicals as compared to China who the largest share of 25% in the overall global trade (Source: Aarti Industries annual report 2019).

Growth of this sector depends on the growth of its end usage application industries such as agrochemical, dyes, flavour and fragrance, polymer addictive etc. The growth drivers for this sector is innovations, that can drive up this sector. As specialty chemicals are such chemicals that add high value to the product by being used in low volumes.

For spurring this sector, government has allowed 100 % Foreign Direct Investment (FDI). Currently, the consumption of chemicals in India is US $ 23, which is one tenth of the global average. So, there is a lot of potential of this sector to grow in India. India also has an estimated that by FY 2022 the CAGR would be 12-13 %, a double-digit growth.

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PART B - PROJECT WORK

1. Introduction

Nature of problem

To analyse the specialty chemical sector of India as this is one of the few sectors on which research is not done properly. It is one of the sectors which is important and Is less known about.

Objective of the study

1. To do analysis of the given company by the organisation.
2. To analyse the specialty chemical sector and its future growth prospects in world as well as India.

Utility of the study

This will make us understand on how to perform analysis of various other company. Also, there are other applications where research will be helpful such as-

1. Research will let us know the current health of the company.
2. Before making investment for long term, sector as well as company analysis will help in making better choice.

2. Methodology

Approach

This research is done both ways qualitative as well as quantitative. In qualitative analysis, we have to go through the annual reports of past five years of the given company. And we have to go through various sections such as management discussion and analysis, chairman's report, business modal, innovations in that sector. In qualitative approach, we have to go through balance sheet, profit and loss statement of the company. This will let us know more about the company in terms of profitability, leverage, liquidity etc.

Sources of data

In this research-based project, the data is collected through secondary sources that from the authentic sources such as-

I. https://databank.worldbank.org
II. https://data.worldbank.org/country/india
III. https://www.imf.org/en/Data
IV. Indian Budget Speech 2019-20
V. www.india.gov.in
VI. m.rbi.org.in

Method of data collection

Data for this, is collected from sources which are reliable from websites of world bank organisation, international monetary fund, government of India, Central Statistics Office, Ministry of Chemical and Fertilizer etc.

Size of sample

Size of the sample includes analysis of various countries developed as well as developing. For company analysis the data is collected of the last five years.

Method of Data Analysis

Analysis is done by looking at the figures collected from the secondary data sources. By forming graphs so that any abrupt change can be visualized easily. Also, in some cases using excel data analysis tools helps us to find correlation between two factors related to the research.
While analysing company, we further analyse the quantitative data by finding relevant ratios.

3. Context of Industry Problem

As we realize that the market is growing at a faster pace, the investors who want to earn higher return but is unable to invest in such companies due to lack of research. As there are hardly such research reports that are being available to such retail investors. So, that they could understand in which companies the investment should be made. Also, there are lot of reports that are made available to the investors which presents data that are biased. This report aims to present data and inference that is unbiased and also data collection is done from authentic sources and government sources that are available. This report presents the information as deep as possible considering the current pandemic situation prevailing in India and all over the globe.

4. Presentation of Data

$711 Bn

Global Specialty Chemical Market (2019)

Global CAGR of 5.0%

(2020-2027)

$ 33 Bn

India's Specialty Chemical Market Size

100 %

FDI allowed

India's chemical consumption is one tenth of global average

10-12% CAGR (2017-2022)

Indian Specialty Chemical Sector

5. Analysis and Discussion

Specialty Chemicals are the chemicals that are used in low quantities and are used in particular end-use applications. From a financial point of view, specialty and bulk chemical can be differentiated on the basis of its EBITDA margin in its business. Specialty Chemical by its characteristics of adding high value to its end product, generally has higher margins than bulk chemicals.

Specialty chemical sector is driven by R&D and innovation, which make this sector significant differentiator over chemical industry. These chemicals are sub-divided based on end-user industries. The segments are categorized into various categories such as agrochemicals, personal care ingredients, polymer addictive, construction chemicals, textile chemicals and water chemicals. And they are also bifurcated on the basis of application driven (flavor and fragrance, surfactants, dyes and pigment). These segments contribute 80% of the total specialty chemical industry.

Global Economy Overview

World GDP for the calendar year 2019 is at 2.9% (Source: IMF) grew slower, with India's GDP growth in 2019 stood at 4.2%. The economy gained its growth in manufacturing across economies. Currently, the US-China tensions seems to be escalated in retaliation to the Honk Kong's security law. Japan's also took a big push to shift its production out of China by giving incentive worth $2.2 Bn. Also, there are reasons why manufacturing in India is better than that of China, when it comes to specialty chemicals. The reasons are listed as follows:

1. US-China trade war - 15% of China's export comprises to US. And with US-China trade war the continuation of trade war and resultant increase in tariffs could have negative implications for its trade and subsequently the domestic capacity and production in China.

2.*Stringent environment norms*- The Chinese government has mandated the construction of compulsory effluent treatment plants and imposed green tax on the chemicals industry to combat pollution. As a result, the overall cost of production is likely to go up with capital expenses incurred towards effluent treatment as well rise in compliance cost.

3. *Rising labor cost in China*- As we can infer from the diagram the rate of rising cost of labor is more than that of India.

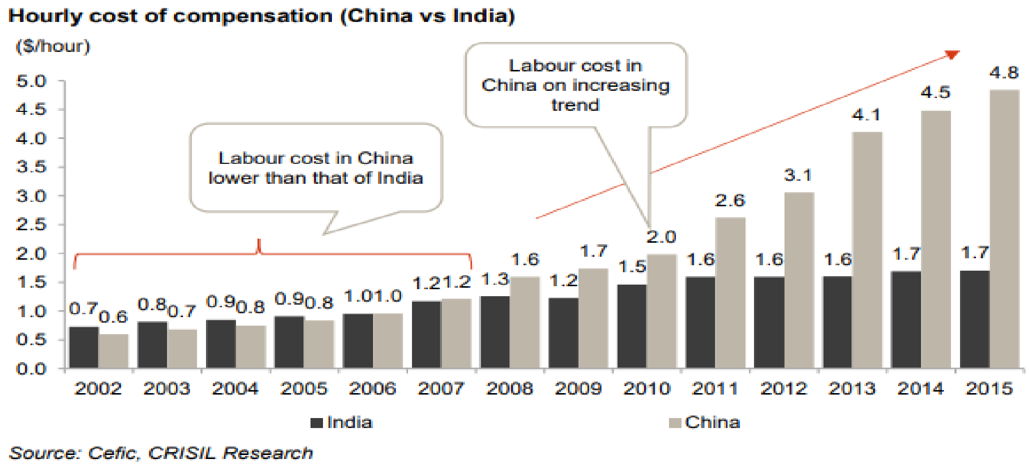


Figure 1: Hourly cost comparison (China vs India)

Global Specialty Chemical Sector

The specialty chemicals market is emerging as the most significant segment in chemicals. Sealants and Adhesives, engineering thermoplastics and coatings, agrochemicals constitute to around 50% of the global chemical sector. This industry constituted market size of $850 Billion for CY 2018. The growth of global specialty chemical sector has increased to 3.2% as compared to 2.2% in CY 2017. Amongst the economies, India and China have emerged to be the manufacturing hub in specialty chemicals. (Source: Research and Markets).

By FY 2022, the market size of global specialty chemical which was US $ 745 Billion in FY 2017 is expected to reach around US $ 900-1000 Billion. This compounded annual growth rate of specialty chemical is 4-6 percent. And the market grew since 2012 with global market size of US $ 577 billion to US $ 745 Billion with a CAGR of 5%. This is illustrated in diagram. (Source: Aarti Industry Annual Report of FY 2019)

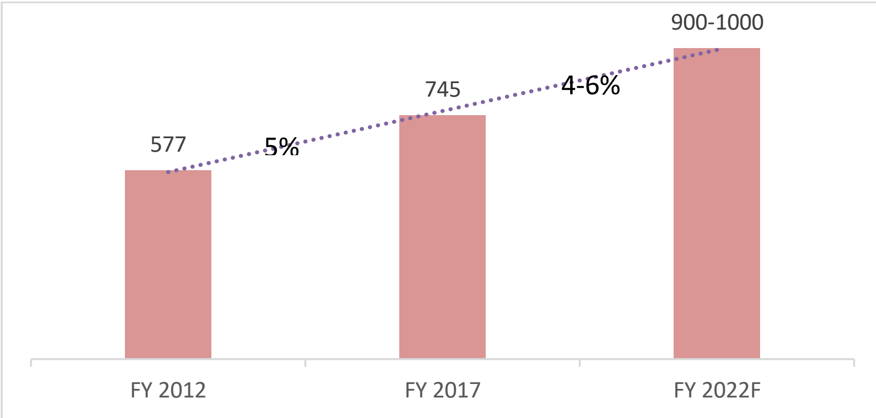


Figure 2: Global Speciality chemicals market size (US$ billion) and region-wise share (Source: Aarti Industry Annual Report 2019)

In 2018, the global five largest segments of specialty chemicals- specialty polymer, industrial and institutional cleaners, surfactants, flavor and fragrance and electronic chemicals constituted 37% of the market share. China being the largest consumer accounting to 30-50 percent of the global consumption (2018). Moreover, emerging markets have higher growth rates when compare to developed nations- Western Europe, North America and Japan.

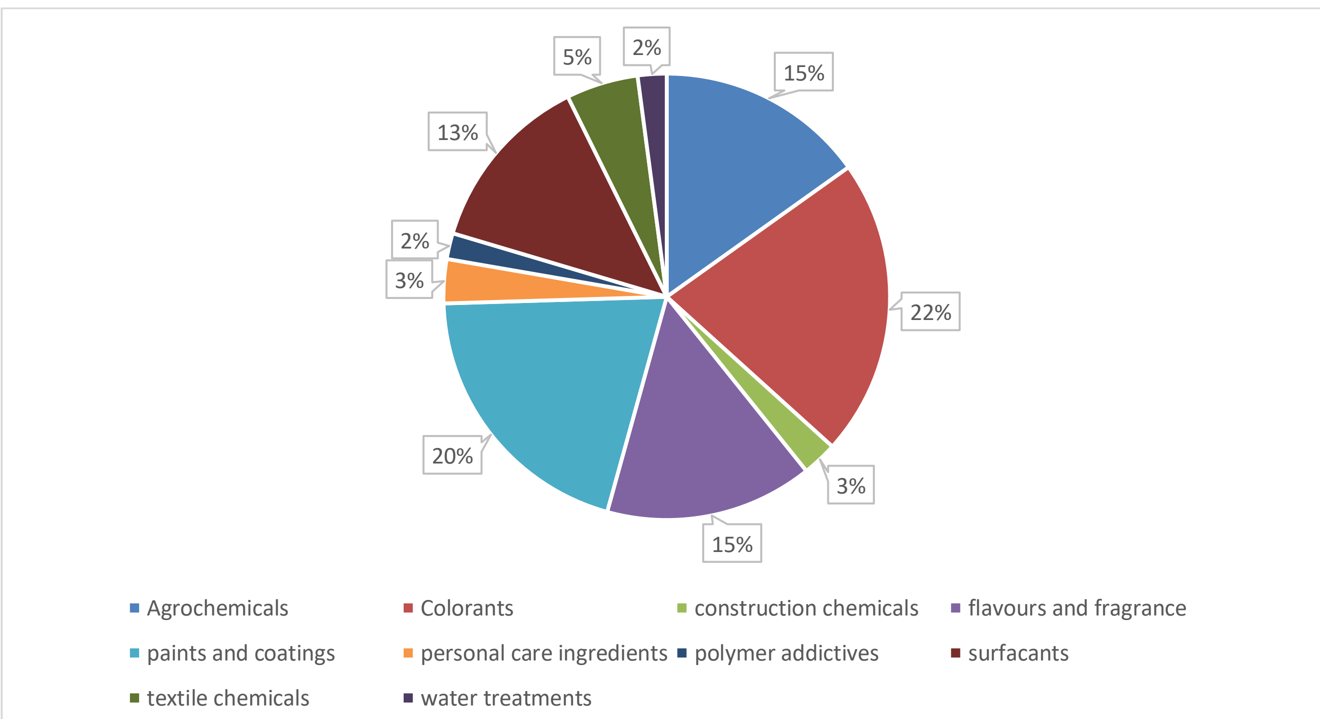


Figure 3: Global market size as per segments (Source: (Wazir Advisors, 2019) *(UN Comtrade, n.d.)*)

The Indian Economic growth rate of 2019-20 was 4.2 percent that was lower than that of pervious year growth rate of 6.8 percent (Source: The Center Statistics Office (CSO)). This is mainly attributed to COVID-19 pandemic that have causes shut down of business and also due to lockdown for several months. Consumption slowdown and rising price of the crude oil, trade wars between major trading partners, tightening of the monetary policy by US. Despite these factors, India is recognized as the fastest growing economy.

GDP growth rate of las five years stood on an average of 7.7 % (FY 2014-FY 2019). Also, the Current Account Deficit is 2.5 % of GDP in FY 2018-19. Also, India has moved ahead by 23 places in Ease of Doing Business (2019). Government policies and measures to boost investment and consumption of public will help the country to grow at steady rate.

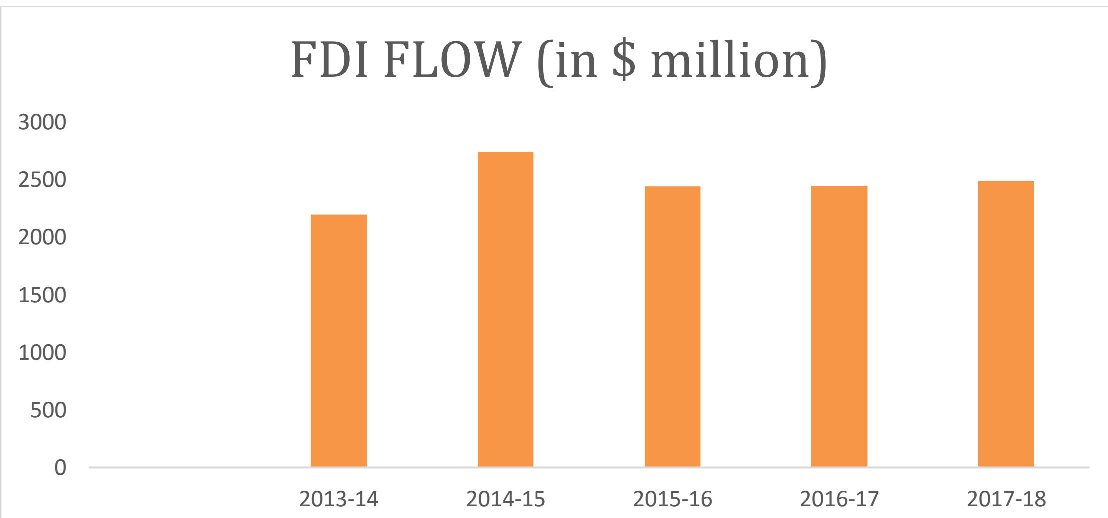


Figure 3: Foreign Direct Investment in India from 2013-2018

Source: rbi.in

Exports are growing rapidly as India is becoming an important manufacturing hub for such chemicals. Tightening environmental norms (e.g. REACH regulations) in developed countries and the slowdown of China (in certain segments) are contributing to the growth of exports. The recently launched "Make in India" campaign is also expected to add impetus to the emergence of India as a manufacturing hub for the chemicals industry in the medium term.

At the same time, lower cost of production and availability of skilled manpower in Asian countries have further aided this process. This has been particularly evident in relatively standardized products with low differentiation, such as textile chemicals and dyes and pigments, wherein IP protection hasn't been a significant threat. Recently, tightened pollution control norms in China have led to multiple plant shutdowns in the country in chemicals and other manufacturing segments. As a result of this, Indian chemical manufacturers have gained from production shift to India, especially visible in segments such as Dyes and Pigments.

Indian Specialty Chemical Sector

This sector is a part of Indian chemical sector which consist of specialty chemicals, basic chemicals. Indian specialty chemicals have application in end-use industries such as paints, surfactants, coloring and coating. This segment is expected to have double digit growth of 10-12% by FY 2022. As government is also reducing import duty on Chemicals like Naphtha, Methyloxirane, Ethylene dichloride and also raw materials that are used in manufacture of Preform of Silica (Source: Indian Budget Speech 2019-2020). Foreign direct investment has also helped India to grow in such sectors.

Specialty chemical companies in India with the market size of US $ 33 billion (2018). The market leaders in this sector are Aarti Industry, Atul, Gujrat Heavy Chemical, Supreme Petro, GFl together comprising more than 50 percent by the overall net sales. Aarti Industry occupying

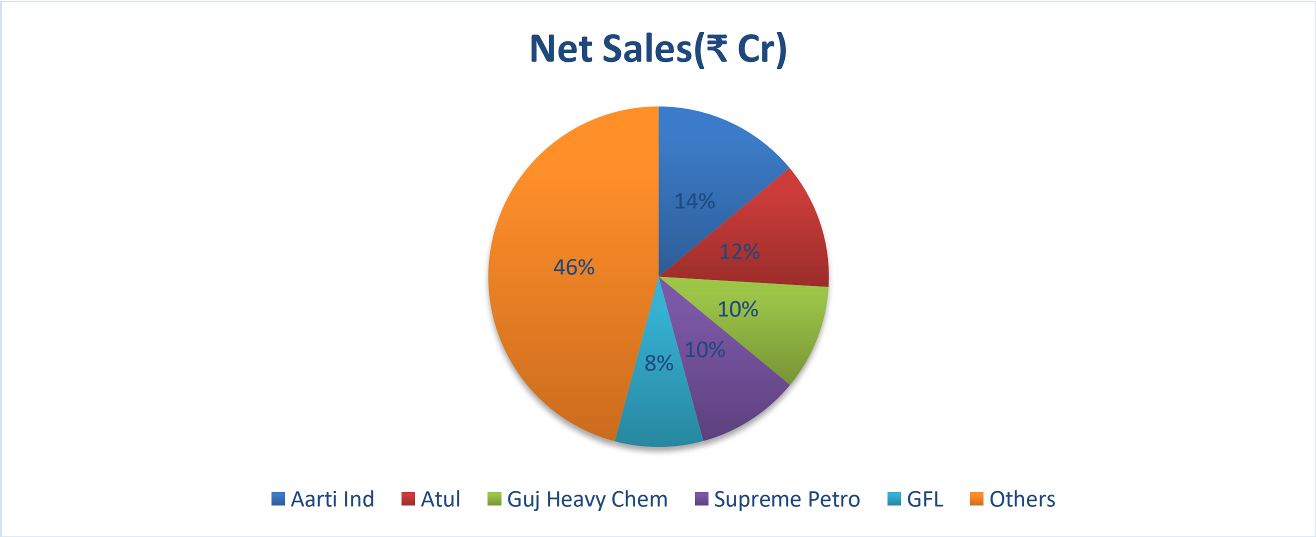


Figure 4: Specialty Chemical Net Sales of companies in India

Source: Money Control

The consumption of chemicals per capita is USD 23, which is one tenth of global average. Since, India is fastest emerging market indicates that there is latent demand of such products. Growth drivers of this sector in India are improvement in product mix, skilled labor, ease in exports and rising of domestic demand. There is a significant opportunity of growth in Indian Specialty chemicals as India's expected CAGR is 12-13%. In India, paints and coating, agrochemicals and Dyes & Pigments constitute 45% of the total market size (2018).

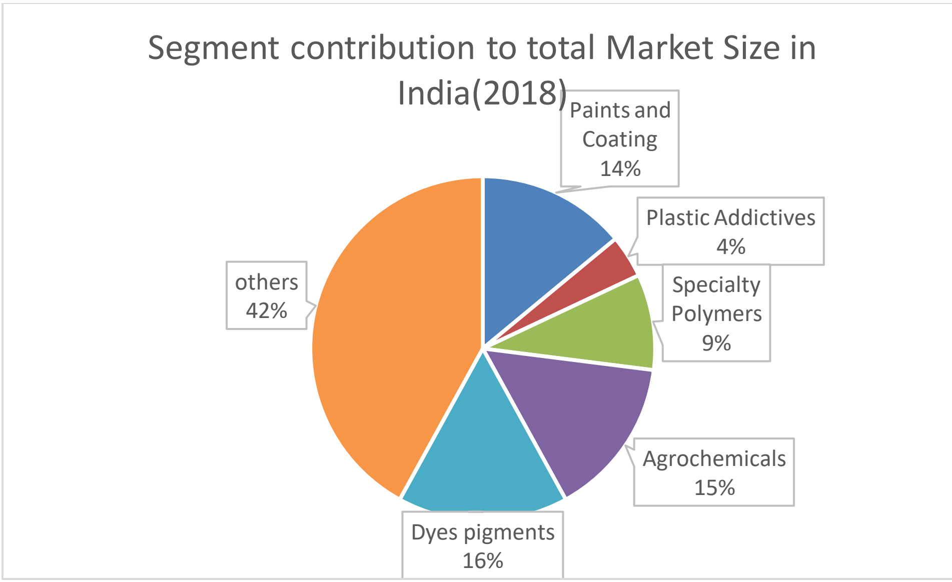


Figure 5: Segment contribution to total market size in India (2018)

Source: Avendus Capital Report

Growth of specialty chemicals depend on growth of its end usage industries. CAGR of segments from 2014 to 2019 are presented in diagram. The profit margin of companies which are producing such chemicals are expected to remain robust for the couple of years. As there is favorable demand of global specialty chemicals along with low manufacturing cost involved in manufacturing such chemicals which help in boosting profit margins. The companies having diversified product portfolio in India will have the advantage to carter the demand. Water Chemicals, personal care active ingredients and the remaining segments have CAGR of 2014-2019 as shown.

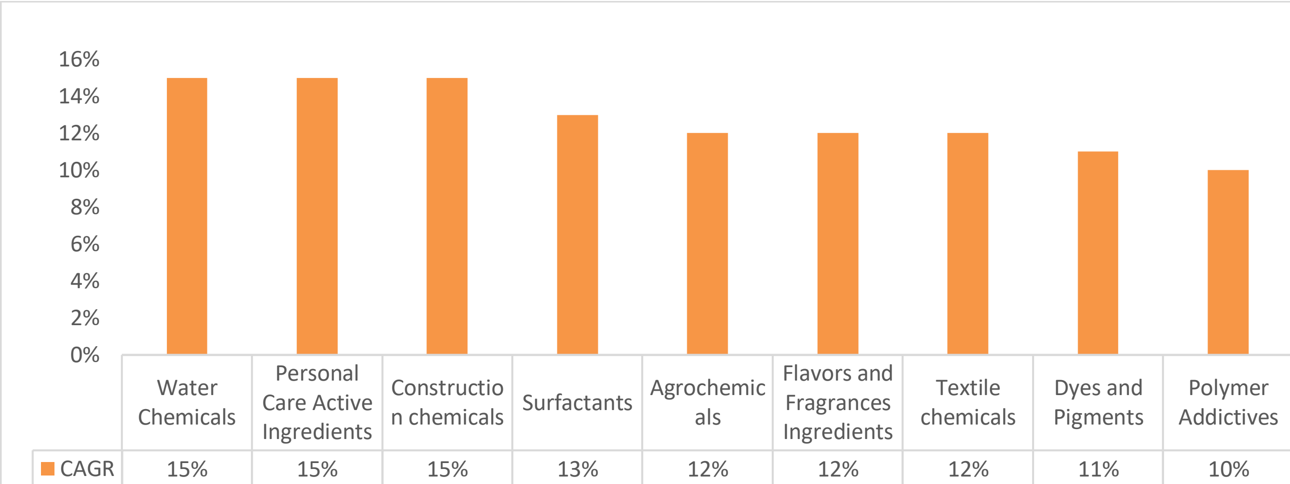


*Figure 6: CAGR of Specialty Chemicals across India from 2014-2019 by segment (*Source: Statista)

6. Company Analysis

The research was conducted using top to bottom approach in which we have already analyzed global as well as Indian specialty chemical scenario. From this analysis we came to the conclusion that specialty chemical sector is the potential sector which will have rapid growth in coming years. As the developed countries are looking towards the emerging economies so that they could meet the supply of chemicals. This will help in the growth of Asia-Pacific countries and emerging economies. Also, when we consider macro factors of India, the government is also supporting Make in India Program through which government is incentivizing this sector to spur in couple of years.

The company I chose to analyze was Aarti Industries (AI). I chose this because this company occupies 14 percent of the overall net sales of specialty chemicals in India. AI operates in two segments- Pharmaceuticals and Specialty Chemicals (SC). Its major chunk in revenue is contributed by SC of about 84%.

In SC, they manufacture products that have end usage application such as Polymer addictive, agrochemicals, Dyes, pigments, paints and printing inks. They export their products to 60 countries. Export constitute about 42 percent of the total revenues. Regions in which they export mainly are North America, Europe, China and Japan.

Reasons why AI is unique to research are as follows:

- They have a product-mix of over 200 research-led and indigenous products while their peers focus on a few ranges of products. By this they have wide range of products due to the technical expertise, integrated chain. They also have global scale facilities. Due to this, it have created a high entry barriers. Therefore, they do not have close substitutes.
- They are into manufacturing of integrated derivatives. While most of the companies are focused on fragmented product-mix. In AI large part of product comprises of benzene derivatives, whose usage are diverse in nature, making AI have diversified products with different usage.
- Players in this sector mainly cater their product to the local market having a concentrated customer base whereas AI has a global presence across 60 plus countries. Due to their presence in both domestic as well as international market makes this possible to scale up business and make profit due to the economies of scale. This has also led to mitigate the risk of dependency on just one customer for the sale of their products.

- They have also made sure that raw materials are available to them. They have done backward integration which make sure of the supply of precursor materials. This has led to the fulfillment of their need of raw materials and also, they are able to sell these materials to the market. Their products act as a substitute of the imports and any Chinese source of feedstock.
- They are mainly present in niche chemistry spaces which generally has low competition. Whereas, most of the companies are present in large spaces that are marked by high competition. Therefore, their presence in niche segments has made a strategic supplier to many leading companies across the globe. In addition to this they have their supply chain integrated forward as well as backward.

For the analysis of the company, I evaluated annual report of last five years from 2015 to 2019. I selectively read some major content in annual report such as Chairman's report, Management and discussion and analysis, Corporate Governance, renumeration, indebtedness, independent auditor's report. Followed by evaluating consolidated balance sheet, profit and loss statement, cash flow statement of Aarti Industries of past five years. For analysis of financial statement, I also did ratio analysis. Also performed the stress test, that was applicable as now due to the current pandemic situations, the steps taken by the government of lockdown has hit hard on the economy. Also, this led to the reverse migration of migrant workers. Combining all the analysis I also prepared the business model of the company. And also forecasted the company's financial statement for the next three years.

Chairman's Message

It is important to analyze the chairman's message given in the annual report because it gives us brief about the company's performance over the last year. And also in his speech he highlights corporate activities, labor relations, main achievement, future goals, strategies and growth of the company.

So, accordingly I have analyzed and summarized chairman's speech of last five years. They are summarized as follows:

FY-2015 No chairman's overview mentioned in its annual report

FY-2016 In his speech about his business he mainly talked on how aarti industry is so robust, why they are global partners choice, what makes them different from others. how they have benefited its prospects.

their investment in R&D also they are now manufacturing toluene-based products. their expansion is backed up by its prospects. pharma is growing at higher margins of returns.

FY-2017 He stated that company has 85% of its revenue from its old customers which were from five years. their export revenue share has increased from 43% to 50% this year. Their largest customer has only 9% of the total revenue. They are not depended on only one customer. aarti is relationship driven firm. they have invested ₹ 190 Cr in capex for toluene derivative which would give them ₹ 400 Cr at its peak utilisation. It has also invested in building research and development in speciality chemicals.

FY-2018 Secured two multi-year contracts that will give them ₹14000 Cr during these years. Also, the toluene facility that they commenced in this year reached 40% capacity utilisation. and hoping to run this facility at its peak in next 3-4 years. The pharma sector sees an increase by 20% in EBIT and it has doubled to what was 3 years ago. The company has also taken steps so that they won't hurt the environment.

FY-2019 In this he has mentioned on how aarti is able to generate high revenue including 37% growth in EBITDA and 48 % PAT. They have also obtained another 10-year contract. They have also started hydrogenation facility for Nitro Toluene. They are also diversifying into production of fuel additives. they have QIP of ₹750 Cr which they will invest in acquisition of greenfield in Gujrat. They will also setup new R&D facility that will focus on chemicals. They are also beginning forward integration in the upcoming year.

Management and Discussion Analysis

MDA is an important aspect from the retail investors point of view. It also helps in fundamental analysis of company. From this section, it helps us to understand the sector in which the company operates.

From the annual reports of last five year (FY 2015-2019) I came to about its growth strategies and where the business is heading in the near future. It seems that Aarti Industries has expanded Nitro-Chloro Benzene manufacturing facility, signed two multi-year contract, started operations at Co-Gen and solar power plants in the last five years. It has demerged Home & Personal Care segment into a separate entity.

This gives us the understanding that it is expanding its business in specialty chemicals. Also, this company has future outlook of its business.

Corporate Governance

Corporate governance is the system of procedures, principles, policies. Also, it defines responsibilities and accountabilities that are used by various stakeholders in order to overcome conflict of interest with the corporate team.

From investors perspective, in corporate governance the company mainly highlights about the shareholding pattern of the company. As through this, it gives us idea about the company in terms of its growth. This can be understood by looking at the percentage of shares that are hold by promoters. If promoters have confidence about the company future prospect, they would definitely hold significant number of shares of the company and vice-a-versa.

As we can see in the Table 1, promoters hold significant chunk of total shares. And also, we can see that mutual funds investment in this company has also increased slightly. This shows that this company a better place to get good amount of returns and the positive outlook of such financial institutions towards the company.

Percentage	**2015**	**2016**	**2017**	**2018**	**2019**
Promoters	59.12	54.64	53.62	51.07	49.36
Bodies Corporate	1.42	1.58	1.62	1.2	1.77
Banks Financial Institutions	0.02	0.02	0.02		
Mutual Funds	12.32	12.37	12.06	13.69	15.01
FII/NRI/OCB	1.13	3.6	4.51	3.64	7.43
Public	25.89	27.63	28.01	25.63	26.43
Total	**100**	**100**	**100**	**100**	**100**

Table 1: shareholding pattern in AI as on the specified year mentioned

Indebtedness

Indebtedness is important factor to consider from investor's point of view. As this section illustrates about the loans taken by the company in the current financial year. Also, it presents the company's interest due if it has not paid. Basically, it gives us information about the payment of interest, whether it is paid on time or is due. It also shows the addition or reduction in the debt taken by the company in the current financial year.

As we can see in Table 2 that in FY 2019, that AI has paid every interest and there no interest due. And this interest was paid timely by the company and there was no due when observed indebtedness of past five years. Most part of its loan consist of secured loans.

Also, when we look at Table3, the rating by CRISIL on AI's bank loan seems to be favourable. As it has CRISIL AA+ in long term rating, A+ rating in category of short-term banking facilities. And it has received debt rating of AA- and A+ in NCD and commercial papers. It is also raising loans by increasingly through unsecured manner. Which is good sign for the company.

	secured loans excluding deposits	unsecured loans	total indebtedness
indebtedness at the beginning of the financial year			
1. principal amount	1906.65	140	2046.5
2. interest due but not paid			
3. interest accrued but not due	14.87	-	14.87
Total 1+2+3	**1921.5**	**140**	**2061.4**
Change in indebtedness during the financial year			
Addition	386.82		386.82
Reduction		70.7	70.66
net change	**386.82**	**70.7**	**316.16**
Indebtedness at the end of the financial year			
1. principal amount	2296.48	69.2	2365.71
2. interest due but not paid			
3. interest accrued but not due	11.16		11.16
Total 1+2+3	**2307.64**	**69.2**	**2376.87**

Table 2: Indebtedness (FY 2019)

Bank loan facilities	
Long Term Rating	CRISIL AA-/positive
Short Term Rating	CRISILA+
Debt Rating	
NCD	CRISIL AA-/positive
Commercial Paper	CRISIL A+

Table 3: CRISIL Rating

Financial report

While analyzing the annual report, we first analyzed the cost drivers for AI. For this we have taken the data of cost of raw materials from company's annual report of last five years from 2015 to 2019. Aarti Industries have been increasing the use of Aniline by more than 700 percent when compared to that in 2015. Phthalic anhydride has remained steady in terms of usage, followed by Sulphur and concentrated nitric acid. Benzene's consumption has increased by 35 percent.

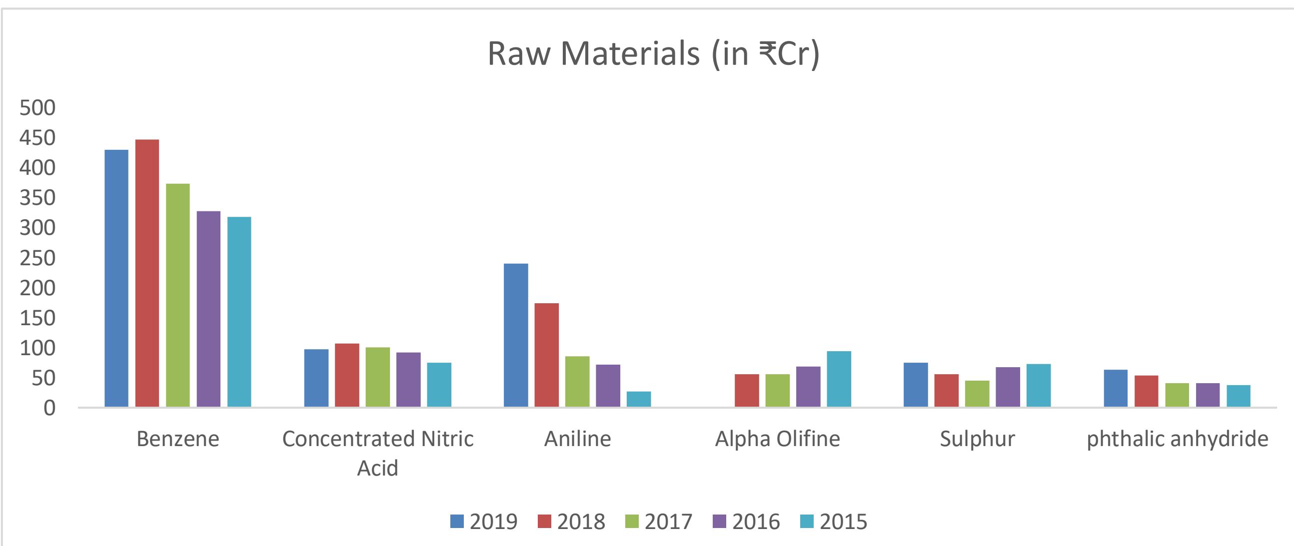


Figure 7: Raw Material cost in INR Cr

Source: Annual reports of Aarti Industries from 2015-2019

In Table 4 of revenue cost we can see that the major chuck of revenue is due to the cost of raw materials which have remained in the range of 53-55% when calculated as percentage of expense, when calculated of last five years. Also, the consumption of packing material as percentage of expense has decreased from INR 42.87 Cr to INR 41.5 Cr, which means that they have reduced the cost by almost 36 percent in past five years. The cost of fuel has increased from INR 98.3 in FY 2015 to INR 187.22 Cr, this is mainly attributed to the rising price of crude oil. This cost when estimated as percentage of expense is 4.58 of current FY 2019. Finance cost and cost of depreciation and amortization has been steady when taken as percentage of expense. Employees' cost share has increased when observed to that of expense from 3.52 % in FY 2015 to 5.2 % in FY 2019.

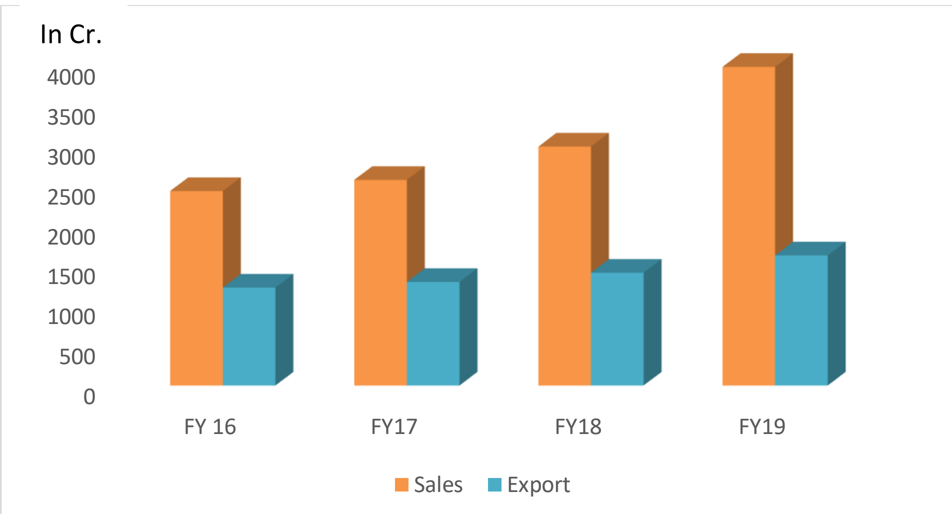
	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Revenue	2913.485	3012.53	3165.42	3813.83	4707.61
Total Expense	2662.21	2649.8	2749.84	3384.82	4085.64
cost of raw materials	1453.96	1409.03	1465.48	1889.09	2261.51
% of cost of raw material to expense	54.61	53.17	53.29	55.81	55.35
consumption of packing material	42.87	34.39	37.66	40.39	41.5
as a % of expense	1.61	1.30	1.37	1.19	1.02
consumption of fuel	98.3	100.37	110.63	171.04	187.22
as % of expense	3.69	3.79	4.02	5.05	4.58
consumption of stores and spares	49.17	59.36	59.71	69.43	80.28
as % of expense	1.85	2.24	2.17	2.05	1.96
cost of material consumed	1644.32	1602.5	1673.13	2169.96	2570.51
as % of expense	61.77	60.48	60.84	64.11	62.92
employee benefits	93.64	120.7	152.28	190.14	242.82
as % of expense	3.52	4.56	5.54	5.62	5.94
finance cost	137.97	116.98	117.34	182.54	131.65
	5.18	4.41	4.27	5.39	3.22
depreciation and amortisation	81.97	98.5	122.52	162.68	146.23
	3.08	3.72	4.46	4.81	3.58

Table 4: Revenue-Cost sheet of Aarti Industries (2014-2019)

From the profit and loss statement of past five years (refer to the Annexure), their EBITDA has increased from ₹452.69 Cr. in 2015 to ₹957.85 Cr. in 2019, they have doubled their EBITDA over the span of five years. Their EBIT before other income has more than doubled from ₹ 452.69 Cr. in 2015 to ₹ 795 Cr. in

2019.On an average EBITDA growth as per y-o-y basis is above 15%. Amortization and depreciation have remained steady when calculated as a percentage of sales which comes to around 3-4%. Profit after tax has also increased from approx. 10 % when we look on y-o-y basis. Earning per share has also increased in the last five years, which means that market has positive sentiments for this company as in 2015 EPS was 22 and that of 2019 which was 58.54. Net profit of last three years CAGR is 24.12%.

EBIT was 22 percent as percentage of total sales has also remained constant for last five years. This indicated that the company have been able to grow despite its capital expenditure and other expansion activities.



Graph 8: Financial performance- Specialty Chemicals

For forecasting the company's revenue for next three years and considering the current scenario of corona-virus. I referred to McKinsey report, that suggest that it would take three years for companies to run normal business. But during forecasting, I also considered that since specialty chemicals are the chemicals that are used in agrochemicals, which is main contributor in crop protection products and also as the company's revenue is driven on multi-year contract basis.

Moreover, there are countries like New Zealand which have recovered from this pandemic can be also the reason for the growth of this company. As export as percentage of segment sales has remained stagnant to 50 percent over last five years. Accordingly, I have forecasted and also this company is into pharmaceutical segment and also got permission from the government to start its business. I took the company's overall business into account and forecasted the data.

For FY 2020, the company has already released the financial statements quarter wise and also year end data. From this I reduced their revenue by 30 percent for the FY 2021. And for calculating other expenses I took the average of expense as a percentage of sales of last five years and forecasted accordingly, profit and loss statement.

I also assumed that the company's revenue might be approximately reach to normal level in FY 2022. Accordingly, I have calculated the expense and FY 2023 forecast. The growth in this year is the average growth rate that I have calculated from 2015-2019.

I have also analyzed quarterly results of the FY 2020 to know about their revenue collection. According if we look at the Annexure E, we can see that third quarter mainly contributes highest to the overall revenue. And the revenue from the remaining quarter is more or less same. From Table 4, we can see that product cycle of agrochemicals, and Dyes and Pigments, Polymer, Addictive are business cycle and business cycle for the rest of segments.

Segments	**Product Cycle**	**FY 18-23 CAGR**
Agrochemicals	Agrochemical cycle	7-9%
Dyes & Pigments	Business Cycle	10-12%
1. Polymer **2. Addictive**	Business Cycle	1. 7-9% 2. 10-11%

Table 4: Product cycle as per segment and CAGR (FY 18-23)

Ratio Analysis

In ratio analysis we have calculated various ratios such as margin ratio, profitability ratio, DuPont Analysis, leverage ratio, turnover ratios, liquidity and also other ratios that were relevant for the research. The ratios are present in Annexure D.

- As per margin ratio, the EBITDA Margin, which is percentage of operating profits to revenues of the company. AI's EBITDA margin is increased (20.35% in 2019), indicating that they are improving their operating efficiency.Net profit margin is also increasing as a result of this. (10.52% in FY 2019).
- As per profitability ratio, the return on capital employed (ROCE) shows that the company has maintained ratio and the percentage of EBIT to the difference of total assets and current liabilities around 20 percent when estimated. Return on assets is also 15-13 % which indicates that they are efficiently utilizing their assets.
- As per the leverage ratio, AI's debt to equity ratio is high means the shareholder's equity has not a significant chuck when compared to that of total liabilities. This is good indicator for the company. Moreover, Debt to Asset ratio is just remained .3 on an average it means that the debt forms only .3 fraction of the total debt. Also, it has maintained better financials.
- As per turnover ratios, fixed asset turnover ratio indicates that the company utilizes its plats, equipment to generate total sales. Inventory turnover ratio is also good, it means that to generate total sales the company has run 2-3 times of the total inventory in one year. When estimated from FY 2015- FY 2019.
- When I analyzed the number of working capital days, has been fluctuated in these past five years. Also, the company has maintained its relationship with its supplier as they are paying them earlier than they receive their payables. The number of days in which company has to borrow money to finance its daily operations is not constant. This might be attributed to number of inventories, debtors and creditors days.
- Looking at its liquidity ratio, the current ratio is quite satisfying for AI. And it is also increasing and the ability to repay its liability is just less than one. But since, the company has future outlook and is also planning for the capital expenditure and also setting up research and development facility will help them to keep the business going in the future. Also, they have diversified the risk as the largest customer accounts for less than 5 percent of the overall revenue and also they have diversified product portfolio having 200+ products.

- Company is able to cover its outstanding debt easily and has also paid loans till date without any due. Therefore, received CRISIL rating of A+ in short term debt facility.

STRESS TEST

To understand the situation the company in times of uncertainty in which it has zero revenues. So, I decided to perform this test on the FY 2019. In this I have taken into account all the fixed cost that will be incurred to company. Through this test, it would help us to understand company's operations and also how long the company is able to manage its operating without generating any revenue.

So, to conduct this test I considered the fixed costs from profit and loss statement of FY 2019. The fixed cost includes cost of rent, employee, interest payment, advertising, repair and maintenance, insurance charges.

Cost		in INR Cr.
Rent/lease		10.83
Employee Cost		242.82
Interest Payment		179
Advertising		5.7
Repair and maintenance		89.91
Insurance Charges		3.9
Total cost		532.16
Sensitivity		
	10%	478.944
	20%	425.728
	30%	372.512
	40%	319.296

Table 5: Stress test of Aarti Industries

We have also calculated the sensitivity, this tells us how much the company has to incur cost if some present of the cost is recovered from sales or from other operations done by the company. The table indicates that cost incurred when the sensitivity is 10%, 20%, 30%, 40% are ₹389.38 Cr, ₹346.12, ₹302.85 Cr, ₹259.59 Cr. respectively.

Peer comparison helps the investor know more about the company, as in this he gets an overview of the industry as whole. This can be done by comparing ratios of company with its peers. The peer I have chosen for comparison are based on basis of products they manufacture. Here I have taken Navin Fluorine as its major product is fluorine based and this is also main product in AI's product portfolio.

The reason behind selecting Atul Ltd and BASF India is that both have well diversified product portfolio and the business structure is also quite similar to that of Aarti Industries.

Table 6, represents peer comparison table, from this we can understand that companies in this sector have strong interest coverage ratio, as we look to the ratio of Atul (89.6) and Navin Fluorine (129.26) they seem to have less problem in regards with loan payment. Overall, AI's ratio of 6.42 is favorable Also debt to equity ratio, Aarti Industries has highest and Navin Fluorine is zero debt company. But also, the debt to equity ratio is not of much concern as it is .61. Return on Equity is highest for AI among its peer this shows that it is able to generate highest profit from its equity. PE ratio of BASF India (122.66) is very high, this means that the company is overvalued and that of AI is 29.43. When compared to Atul Ltd, Navin Fluorine their PE ratio is approx. 21. This can be attributed to the fact that the sales growth of last three years of Aarti Industries is 16.10% and to that of NF, Atul, BASF India is 13.58%, 13.04%, 14.17%.

	Sales growth(3 Yrs)	**OPM**	**PE**	**ROE**	**ROCE**	**DE**	**ROA**	**EV/EBITDA**	**ICR**
FY 19									
Aarti Industries	16.10%	21.69%	29.43	23.31 %	18.47 %	0.61	10.65 %	17.58	6.42
Navin Fluorine	13.58%	24.82%	20.65	14.54 %	21.79 %	0	14.09 %	27.48	129.26
BASF India	14.17%	3.55%	122.66	3.30%	5.10%	0.59	1.97%	21.64	1.39
Atul	13.04%	22.04%	20.89	22.44 %	27.98 %	0.03	21.33 %	14.19	89.67

Table 6 Peer Comparison with Aarti Industries.

OPM: Operating margin   PE: Price to Earning   ROE: Return on Equity   ROCE: Return on Capital Employed

DE: Debt to Equity   ROA: Return on Assets   ICR: Interest coverage ratio

7. Conclusion

After analyzing this sector and the company using Top to Bottom approach. And also, by analyzing annual reports of AI, there are certain points to be kept in mind of investor if he wants to invest.

- Specialty Chemical Sector is profitable sector if the investor wants to invest for long term. As India currently contributes 3% to the overall global trade. India has great opportunity to give boost to this sector. From Indian Budget Speech of FY 2019, govt. has taken steps to reduce import tax on certain chemicals.
- Specialty Chemical is mainly driven by innovation. As these chemicals are used in almost every industry whether it be textile, agrochemicals, flavors and fragrance, dyes etc. Due to this it is the sector which will grow as these sectors use these chemicals to differentiate their products from that of others. Most of the companies have EBITDA Margin when compared to companies of another sector.
- By analyzing the annual report of AI, the company is good to invest in because it has diversified portfolio and also the exports are also diversified. Also, the source of revenue is not constrained by few customers. The largest buyer comprises of only 5 percent of the total revenue.
- Also, the company is active in expansion activities and also, CRISIL rating is also good when it comes to payment of interest. Shareholders are also confident about the company's business.

8. Managerial Implication

By analyzing the company's business, I think that due to its business in specialty chemicals and pharmaceuticals the company might not be affected as much as other sectors. Considering the current pandemic COVID-19, the company can still earn revenue in the segment of pharmaceutical which will help them to ramp up their revenue. As specialty chemicals contribute 82 % of the total revenue, it may remain to be distressed for a couple of years. But it would soon recover as this is robust sector which caters the production of other sectors. Company might also reduce its shareholding in order to meet the requirement by the AI in terms of cash which might be used as working capital.

When compared with the companies whose revenue purely depends on the specialty chemical segment might find it tough in FY 2021. As due to the steps taken by the govt. has led to the shutdown of operation in such companies. As government has also started unlocking, it might take three years to be back in terms of revenue as mentioned in the McKinsey report.

9. Recommendation

I would recommend to buy the shares of the Aarti Industries as when I am writing this report (July 18) the share price is INR 905. I would recommend to buy the stock for long position. Company is fairly valued and its share price is expected to grow to INR 1100 in six months.

Part C - Learning from Summer Internship

I would like to express my gratitude to Institute of Management, Nirma University for allowing me to have my two months summer internship with The Money Roller. Learnings from Summer Internship are as follows:

- This internship has helped me to understand the importance of obtaining data from reliable source. As this helped me to make the analysis more authentic.
- This have helped to understand about the importance of the global macro-economic factors in evaluating the sector as this helps us understand about various economies.
- This helped me to know correct way to read annual reports, what are important sections that one should read in order to do better analysis.
- Government role in the growth of sector and how global factors affect growth of sector.
- I also understood that the more you research about the relevant information the finer will be analysis.
- I also got to know about parameters that are helpful in peer comparison and how to conduct stress test.
- I also came to know about what are the factors that should be evaluated before making an investment in company's stock.
- I understood how to perform fundamental analysis of the company. In addition to this, I got knowledge of stock market and the importance of PE band in intraday analysis.
- This internship has helped to me think differently and also broaden my horizon of thinking.

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Annexures

NIRMA UNIVERSITY
INSTITUTE OF MANAGEMENT
NAAC ACCREDITED 'A' GRADE

Particulars		IN CR					CONSIDERING COVID 19 IMPACT			
	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023
SOURCES OF FUNDS:										
Equity share capital	44.30	44.30	41.66	41.06	40.65	43.33	87.12	87.12	87.12	87.12
reserve and surplus	826.46	1025.27	1095.64	1321.41	1537.78	2587.44	2891.65	3108.52	3341.66	3592.29
Net Worth	**870.76**	**1069.57**	**1137.30**	**1362.47**	**1578.43**	**2630.77**	**2978.77**	**3195.64**	**3428.78**	**3679.41**
Minority Interest	4.26	**5.86**	**52.09**	**63.85**	**77.02**	**83.95**	94.62	103.14	112.42	122.54
Total Equity	**875.02**	**1075.43**	**1189.39**	**1426.32**	**1655.45**	**2714.72**	**3073.39**	**3298.78**	**3541.20**	**3801.94**
Non-Current Liabilities										
Long Term Borrowing										
- Secured	515.20	419.06	526.76	596.44	908.27	814.80	580.84	638.92	702.82	773.10
Unsecured		nil								
Other financial liabilities		0.18	0.18	0.45						
other non-current liabilities	7.90				64.00	203.24	550.89	589.45	630.71	674.86
Deferred Tax Liabilities (Net)	84.66	102.66	127.06	155.44	177.41	193.01	211.01	230.00	250.70	273.26
Total	**607.76**	**521.90**	**654.00**	**752.33**	**1149.68**	**1211.05**	**1342.74**	**1458.38**	**1584.23**	**1721.23**
Current Liabilities										
Short Term Borrowings										
-Borrowings	686.84	648.32	706.40	839.29	1012.48	1290.83	1229.67	1254.26	1279.35	1304.94
-Trade payables	368.95	248.83	305.19	299.72	357.49	279.28	345.19	284.00	355.00	299.00
-Other financial liabilities	101.61	156.60	91.00	153.56	185.32	319.64	301.63	275.00	257.00	312.00
Employee Benefit Obligations										
Provisions	29.90	14.62	20.50	27.83	31.04	42.42	39.91	40.00	40.00	40.00
Current income tax liabilities (net)										
Other current liabilities										
Total	**1187.30**	**1068.37**	**1123.09**	**1320.40**	**1586.33**	**1932.17**	**1916.40**	**1853.26**	**1931.35**	**1955.94**
Total Liabilities	**2670.08**	**2665.70**	**2966.48**	**3499.05**	**4391.46**	**5857.94**	**6332.53**	**6610.42**	**7056.78**	**7479.11**

APPLICATION OF FUNDS										
Non-current assets										
Property, Plant and Equipment	826.14	966.89	1245.54	1694.90	1996.17	2145.35	2467.57	2492.25	2888.00	3245.00
Capital work-in-progress	117.44	192.97	313.01	269.52	436.23	794.57	1417.57	941.00	863.20	812.00
Goodwill on Consolidation	0.08	0.04	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42
Other Intangible Assets		0.00	0.00	1.70	1.30	0.90	0.50	0.70	0.70	0.70
other non current asset	384.37	**103.27**	**132.26**	**168.36**	**225.18**	**306.43**	388.00	492.76	626.13	795.50
Non-current Investments							37.01	51.81	72.54	101.56
Trade Investments - (Quoted) in Equity Shares	117.23	32.54	22.62	28.32	24.88	0.00				
Investments - (Unquoted) in Equity Shares of Associate Companies		124.78	0.00	0.00	11.01	21.96				
Investments - (Unquoted) in Equity Shares of Other Companies		6.02	7.43	7.57	0.26	0.26				
Investments - (Unquoted) in Limited Liability Partnership		3.80	3.80	3.80	3.80	3.67				
Investments - (Unquoted) in Unsecured Convertible Debentures		5.75	7.27	7.27	7.27	7.27				
Investments - Mutual Funds		0.00	0.14	0.00						
Total Non-current assets	**1445.26**	**1436.06**	**1732.49**	**2181.86**	**2706.52**	**3280.83**	**4311.07**	**3978.94**	**4450.98**	**4955.17**
Current assets										
Inventories	606.12	551.73	495.19	571.41	747.30	771.79	835.68	885.00	987.00	985.00
Trade receivables	443.19	438.98	523.40	524.70	654.75	776.04	770.03	647.69	615.31	584.13
Cash and cash equivalents	14.85	33.71	28.99	28.50	32.10	804.20	247.29	890.00	739.34	354.00
other current financial assets	131.08	172.93	167.92	168.70	224.80	190.66	135.66	176.79	232.15	568.96
Other current assets	29.58	32.31	18.49	23.90	25.99	34.42	32.80	32.00	32.00	32.00
Total current assets	**1224.82**	**1229.66**	**1233.99**	**1317.21**	**1684.94**	**2577.11**	**2021.46**	**2631.48**	**2605.80**	**2524.09**
Total Assets	**2670.08**	**2665.72**	**2966.48**	**3499.07**	**4391.46**	**5857.94**	**6332.53**	**6610.42**	**7056.78**	**7479.27**

Annexure A: Balance sheet of Aarti Industries (Consolidated)

Income Statement (Amt in crore)	Oldest				Newest				
Particulars									
	FY2015	**FY2016**	**FY2017**	**FY2018**	**FY2019**	**FY2020**	**FY2021**	**FY2022**	**FY2023**
Sale of Products	3,068.96	2945.88	3105.63	3753.77	4659.49				
Sale of Services	7.1098	10.33	9	5.56	0	0	0	0	0
Other Operating Revenues	46.52	50.38	48.83	46.73	46.02				
LESS excise duty/VAT	214.63								
Total Operating Income	**2,907.96**	**3,006.59**	**3,163.46**	**3,806.06**	**4,705.51**	**4620.69**	**3,234.48**	5775.8625	6931.035
Other Income	5.52	5.94	1.96	7.77	2.10	8.84	4.85	8.66	10.40
% of operating income	0.19%	0.20%	0.06%	0.20%	0.04%	0.19%	0.15%	0.15%	0.15%
Total Revenue	**2913.48**	**3012.53**	**3165.42**	**3813.83**	**4707.61**	4629.53	3239.33	5784.53	6941.43
growth %		*3.40%*	*5.08%*	*20.48%*	*23.44%*	*-1.66%*	*-30.03%*	*78.57%*	*20.00%*
Expenditure									
Raw Material Cost	1644.32	1603.50	1673.13	2169.96	2570.51	1780.92	1778.97	3176.72438	3812.06925
as % of sales	*56.55%*	*53.33%*	*52.89%*	*57.01%*	*54.63%*	*38.54%*	*55.00%*	*55.00%*	*55.00%*
Purchase of stock in trade	170.59	114.99	101.77	117.46	183.47	274.65	116.441	207.93105	249.51726
as % of sales	*5.87%*	*3.82%*	*3.22%*	*3.09%*	*3.90%*	*5.94%*	*3.60%*	*3.60%*	*3.60%*
growth%		-32.59%	-11.50%	15.42%	56.20%	49.70%	-57.60%	78.57%	20.00%
Changes in inventories of FG WIP SIT	17.22	49.30	-31.62	-105.89	-59.40	0.75	32.34	57.76	69.31
as % of sales	*0.59%*	*1.64%*	*-1.00%*	*-2.78%*	*-1.26%*	*0.02%*	*1.00%*	*1.00%*	*1.00%*
Employee Benefits Expense	93.65	120.70	152.28	190.14	242.82	305.22	187.60	335.00	402.00
as % of sales	*3.22%*	*4.01%*	*4.81%*	*5.00%*	*5.16%*	*6.61%*	*5.80%*	*5.80%*	*5.80%*
Finance Costs	13.00	6.34	7.17	6.73	7.24		7.4	7.4	7.4
as % of sales	*0.45%*	*0.21%*	*0.23%*	*0.18%*	*0.15%*	*0.00%*	*0.23%*	*0.13%*	*0.11%*
Other Expenses	516.49	545.83	614.42	735.27	803.02	847.44	640	981.90	1178.28
as % of sales	*17.76%*	*18.15%*	*19.42%*	*19.32%*	*17.07%*	*18.34%*	*19.79%*	*17.00%*	*17.00%*
Total Expenditure	**2455.27**	**2440.66**	**2517.15**	**3113.67**	**3747.66**	**3208.98**	**2762.75**	**4766.71**	**5718.57**
as % of sales	*84.27%*	*81.02%*	*79.52%*	*81.64%*	*79.61%*	*69.32%*	*85.29%*	*82.40%*	*82.38%*

Total Expenditure	**2455.27**	**2440.66**	**2517.15**	**3113.67**	**3747.66**	**3208.98**	**2762.75**	**4766.71**	**5718.57**
as % of sales	*84.27%*	*81.02%*	*79.52%*	*81.64%*	*79.61%*	*69.32%*	*85.29%*	*82.40%*	*82.38%*
EBIDTA before Other Income	**452.69**	**565.93**	**646.31**	**692.39**	**957.85**	**1411.71**	**471.73**	**1009.15**	**1222.86**
Ebidta Margin %	*15.54%*	*18.79%*	*20.42%*	*18.15%*	*20.35%*	*30.49%*	*14.56%*	*17.45%*	*17.62%*
Ebidta growth %		*25.01%*	*14.20%*	*7.13%*	*38.34%*	*47.38%*	*-66.58%*	*113.93%*	*21.18%*
Depreciation and Amortization Expenses	81.98	98.50	122.52	146.23	162.68	185.21	109.97	196.38	235.66
as % of sales	*2.81%*	*3.27%*	*3.87%*	*3.83%*	*3.46%*	*4.00%*	*3.39%*	*3.39%*	*3.39%*
EBIT before other Income(OP. INCOM	370.72	467.43	523.79	546.16	795.17	1226.50	361.76	812.77	987.20
Ebit Margin %	0.13	*15.52%*	*16.55%*	*14.32%*	*16.89%*	*26.49%*	*11.17%*	*14.05%*	*14.22%*
Ebit growth %		*26.09%*	*12.06%*	*4.27%*	*45.59%*	*54.24%*	*-70.50%*	*124.67%*	*21.46%*
other income	5.52	5.94	1.96	7.77	2.10	8.84	4.85	8.66	10.40
as % of sales	*0.19%*	*0.20%*	*0.06%*	*0.20%*	*0.04%*	*0.19%*	*0.15%*	*0.15%*	*0.15%*
EBIT after other Income	376.24	473.37	525.75	553.93	797.27	1235.34	366.61	821.44	997.60
INTEREST	124	108.36	110.9	124.01	171.91	124.78	120	125	130
PBT before Exceptional	**252.24**	**365.01**	**414.85**	**429.92**	**625.36**	**1110.56**	**246.61**	**696.44**	**867.60**
Exceptional Income	3.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PBT after Exceptional	**255.72**	**365.01**	**414.85**	**429.92**	**625.36**	**1110.56**	**246.61**	**696.44**	**867.60**
Total Tax	**61.03**	**94.63**	**88.06**	**82.88**	**117.80**	**129.42**	36.99	104.47	130.14
Effective Tax rate	*23.87%*	*25.93%*	*21.23%*	*19.28%*	*18.84%*	*11.65%*	*15.00%*	*15.00%*	*15.00%*
Net Profit After Tax	**194.69**	**270.38**	**326.79**	**347.04**	**507.56**	**981.14**	**209.62**	**591.97**	**737.46**
PAT Margin %	*6.68%*	*8.98%*	*10.32%*	*9.10%*	*10.78%*	*21.19%*	*6.47%*	*10.23%*	*10.62%*
PAT growth %		*38.88%*	*20.86%*	*6.20%*	*46.25%*	*93.31%*	*-78.64%*	*182.40%*	*24.58%*

Annexure B: Profit and Loss statement (consolidated)

Particulars	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23
PAT	206.85	259.16	315.03	333.87	495.12	1,492.26	216.62	598.97	744.46
Add: Depreciation	81.98	98.50	122.52	146.23	162.68	185.21	109.97	196.38	235.66
Add:Interest	137.00	114.70	118.07	130.74	179.15	124.78	127.40	132.40	137.40
Less: Other income & Misc income	-9.00	-5.94	-1.96	-7.77	-2.10	-8.84	-4.85	-8.66	-10.40
change in WC excluding cash	-104.91	45.67	113.60	-98.20	225.77	-17.03	-30.45	-46.89	-279.05
CFO	**311.91**	**512.09**	**667.26**	**504.87**	**1,060.62**	**1,776.38**	**418.69**	**872.20**	**828.07**
Change in fixed assets	-222.73	-377.15	-571.88	-447.50	-311.86	-507.43	-134.65	-592.13	-592.66
Change in capital WIP	-75.53	-120.04	43.49	-166.71	-358.34	-623.00	476.57	77.80	51.20
Change in intangible assets & Goodwill	0.04	-0.38	-1.70	0.40	0.40	0.40	-0.20	0.00	0.00
Change in investments	-55.66	131.63	-5.70	-0.26	14.06	33.16	0.00	0.00	0.00
Change in other assets	281.10	-28.99	-36.10	-56.82	-81.25	-81.57	-104.76	-133.37	-169.37
Other & Misc Income	9.00	5.94	1.96	7.77	2.10	8.84	4.85	8.66	10.40
CFI	**-63.77**	**-388.99**	**-569.93**	**-663.12**	**-734.89**	**-1,169.60**	**241.81**	**-639.04**	**-700.43**
Change in equity share capital	0.00	-2.64	-0.60	-0.41	2.68	43.79	0.00	0.00	0.00
Change in Debt (Long Term Debt)	-103.86	107.7	69.95	375.38	45.77	113.69	96.6463	105.154061	114.432
Change in Minority Interest	1.60	46.23	11.76	13.17	6.93	10.67	8.52	9.28	10.12
less: Dividend & dividend tax	-51.72	-114.4	-2.05	-9.88	-52.67	0	0	0	0
less: interest paid	-137.00	-114.70	-118.07	-130.74	-179.15	-124.78	-142.20	-152.40	-137.40
Other adj including reserves	61.68	-49.99	-58.83	-85.65	622.81	-1207.05	19.25	-345.13	-500.13
CFF	**-229.30**	**-127.80**	**-97.84**	**161.87**	**446.37**	**-1163.68**	**-17.79**	**-383.10**	**-512.98**
Opening cash	14.85	33.71	28.99	28.5	32.1	804.2	247.29	890	739.34
Change in cash	18.84	-4.70	-0.51	3.62	772.10	-556.90	642.71	-149.93	-385.34
Closing cash	**33.69**	**29.01**	**28.48**	**32.12**	**804.20**	**247.30**	**890.00**	**740.07**	**354.00**

Annexure C: Cash flow statements of AI

Particulars	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22
Margin Ratio (%)								
EBDITA Margin	15.54%	18.79%	20.42%	18.15%	20.35%	30.49%	14.56%	17.45%
Net Profit Margin	7.11%	8.62%	9.96%	8.77%	10.52%	32.30%	6.70%	10.37%
Profitability Ratio (%)								
ROCE	23.21%	25.36%	24.04%	19.47%	20.26%	27.77%	7.60%	15.86%
ROE	19.34%	22.79%	23.12%	21.15%	18.82%	50.10%	6.78%	17.47%
ROA	13.91%	15.76%	14.97%	12.44%	13.57%	19.37%	5.47%	11.52%
DuPont Analysis								
PAT / PBT	0.76	0.74	0.79	0.81	0.81	0.88	0.85	0.85
PBT / EBIT	0.68	0.77	0.79	0.78	0.78	0.90	0.67	0.85
EBIT / Net Sales	0.13	0.16	0.17	0.15	0.17	0.27	0.11	0.14
Net Sales / Total Assets	1.09	1.02	0.90	0.87	0.80	0.73	0.49	0.82
Total Assets / Equity	2.49	2.61	2.57	2.78	2.23	2.13	2.07	2.06
ROE	19%	23%	23%	21%	19%	50%	7%	17%
Leverage Ratios								
Debt-Equity Ratio	2.49	2.61	2.57	2.78	2.23	2.13	2.07	2.06
Debt-Asset Ratio	0.40	0.38	0.38	0.36	0.33	0.30	0.28	0.27
Turnover Ratios								
Total Assets	1.09	1.01	0.90	0.87	0.80	0.85	0.85	0.85
Fixed Assets	2.77	2.14	1.71	1.44	1.42	1.38	1.27	0.90
Inventory	2.20	2.88	2.97	2.89	3.10	2.88	1.88	3.09
Debtors	6.61	6.26	6.04	6.47	6.58	5.99	4.57	9.16
Creditors	5.88	6.55	5.68	5.40	7.18	8.82	6.53	5.93
Days								
Woking Capital	20.2	13.4	-0.4	9.4	50.0	8.3	87.7	42.6
Inventory	165.9	126.8	123.0	126.2	117.8	126.7	193.9	118.1
Debtors	55.26	58.30	60.43	56.44	55.47	60.95	79.87	39.85
Creditors	62.12	55.71	64.24	67.58	50.80	41.38	55.86	61.53

Annexure D: Ratio Analysis

Income Statement (Amt in crore)

Particulars	Q1 2019-20	Q2 2019-20	Q3 2019-20	Q4 2019-20
Sub Total	113549.00	107682.00	121848.00	118990.00
Net Sales	**113549.00**	**107682.00**	**121848.00**	**118990.00**
growth %	*#REF!*	*-5.17%*	*13.16%*	*-2.35%*
% of revenue	**24.57%**	**23.30%**	**26.37%**	**25.75%**
Expenditure				
Raw Material Cost	55802.00	51203.00	55778.00	47345.00
as % of sales	*49.14%*	*47.55%*	*45.78%*	*39.79%*
Puchase of Stock-in-trade	2703.00	4840.00	11484.00	8438.00
as % of sales	*2.38%*	*4.49%*	*9.42%*	*7.09%*
Change in inventores of finished goods	1913.00	-926.00	-736.00	-173.00
as % of sales	*1.68%*	*-0.86%*	*-0.60%*	*-0.15%*
employee benfit expense	6948.00	7397.00	8323.00	7854.00
as % of sales	*6.12%*	*6.87%*	*6.83%*	*6.60%*
other expenses	21172.00	19733.00	21581.00	22258.00
as % of sales	*18.65%*	*18.33%*	*17.71%*	*18.71%*
Total Expenditure	**88538.00**	**82247.00**	**96430.00**	**85722.00**
as % of sales	*77.97%*	*76.38%*	*79.14%*	*72.04%*

Annexure E: Quarterly Results of FY 2020.