



BODHI CAPITAL

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Phillips Carbon Black Limited

CMP: Rs. 66.90

Analyst Take: Buy

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Carbon Black Industry

- Carbon black is an organic compound produced by the reaction of a hydrocarbon fuel such as oil or gas with a limited supply of combustion air at temperatures of 1320 to 1540°C (2400 to 2800°F). The unburned carbon is collected as an extremely fine black fluffy particle, 10 to 500 nanometers (nm) in diameter.
- The principal uses of carbon black are as a reinforcing agent in rubber compounds (especially tires) and as a black pigment in printing inks, surface coatings, paper, and plastics.
- It is produced by four different processes, which are: furnace black process, channel process, acetylene black process, and lampblack process.
- Furnace black is the most commonly used method owing to its maximum production capacity. Industrially, it is produced by the combustion of heavy petroleum products, such as coal tar and Fluid Catalytic Cracking (FCC) tar, with vegetable oil
- The global carbon black market size was estimated at USD 17.22 billion in 2018 and is projected to expand at a CAGR of 6.0% from 2019 to 2025.
- The total global capacity of carbon black stood at ~16 million tonnes in 2017, with China as the largest player accounting for ~43% of the global capacity. The global carbon black industry is concentrated in nature, with the top 10 players controlling ~63% of the global capacity.



Carbon Black Industry

- There are several barriers to entry for new firms providing a moat to the existing players. These barriers include:
 - High capital intensity
 - Long gestation period (~2 years)
 - Long timelines on getting client approvals because of stringent quality requirements that can take around 18-24 months
- Rising product usage in the production of plastics is anticipated to drive the global market over the forecast period. Moreover, rising usage of these plastics in electrical and electronic components will boost the product demand further.
- Proximity to tyre companies is the key. Tyre is poised to become the biggest consumer of carbon black. Carbon Black helps improve the strength and longevity of tires by providing better abrasion resistance and tensile strength.
- growing construction and manufacturing sectors utilizing industrial rubber and equipment are anticipated to positively impact the product demand.
- The crude oil price fluctuation has a major impact on the pricing of carbon black. Some other macro-level factors influencing the price include working capital and pre-operational costs. The installation and setup, capitalized interests, project engineering and management, and commissioning costs are included under the pre-occupational costs.



Production Process

The four different ways to produce carbon black include:

- Furnace black process: This method forms carbon black by blowing petroleum oil or coal oil as raw material (feedstock oil) into high-temperature gases to combust them partially. This method is suitable for mass production due to its high yield, and allows wide control over its properties such as particle size or structure. This is currently the most common method used for manufacturing carbon black for various applications from rubber reinforcement to coloring. Process yields range from 35 to 65 percent. Generally, yields are highest for large particle blacks and lowest for small particle blacks.
- Channel process: This method forms carbon black by bringing partially combusted fuel, which is generated with natural gas as raw material, into contact with channel steel (H-shaped steel) and then collecting the carbon black which results. There are yield and environment issues around this method, and therefore has lost the leading role as the mass production process to the furnace process. This method, however, provides carbon black with many functional groups on the surface, being used in some painting applications.



Production Process

- Acetylene black process: This process obtains carbon black by thermally decomposing acetylene gas. It provides carbon black with higher structures and higher crystallinity, and is mainly used for electric conductive agents.
- Lampblack process: This method obtains carbon black by collecting soot from fumes generated by burning oils or pine wood. This method has been used since the days before Christ, and is not suitable for mass production. However, it is used as raw material for ink sticks as it provides carbon black with specific color.



Environmental Impact

The production processes mentioned can be categorized into furnace and thermal process, with furnace black & lampblack falling under the former while the other two falling under thermal.

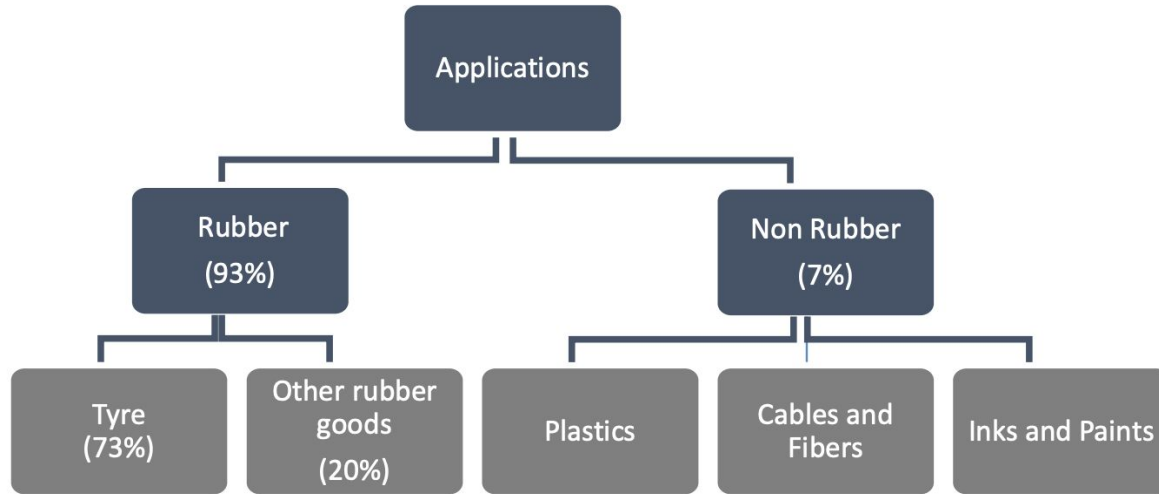
- Thermal: The thermal process is a cyclic operation in which natural gas is thermally decomposed (cracked) into carbon particles, hydrogen, and a mixture of other organics. Normally, more than enough hydrogen is produced to make the thermal black process self-sustaining, and the surplus hydrogen is used to fire boilers that supply process steam and electric power. Thermal process yields are generally high (35 to 60 percent), but the relatively coarse particles produced, 180 to 470 nm, do not have the strong reinforcing properties required for rubber products. Emissions from the furnaces in this process are very low because the offgas is recycled and burned in the next furnace to provide heat for cracking, or sent to a boiler as fuel. The process in thermal involves two furnaces. The first cracks natural gas and makes carbon black and hydrogen. The effluent gas from the first reactor is cooled by water sprays to about 125°C, and the black is collected in a fabric filter. The filtered gas (90 percent hydrogen, 6 percent methane, and 4 percent higher hydrocarbons) is used as a fuel to heat a second reactor. When the first reactor becomes too cool to crack the natural gas feed, the positions of the reactors are reversed, and the second reactor is used to crack the gas while the first is heated. The carbon black is recovered in a bag filter between the 2 furnaces. The rest is recycled in the offgas.



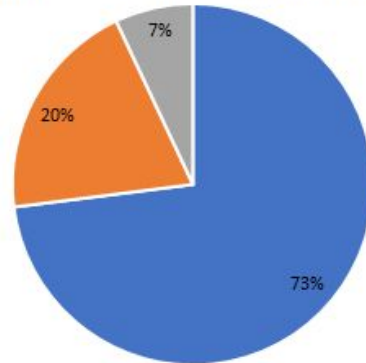
Environmental Impact

- Furnace: Emissions from carbon black manufacture include particulate matter, carbon monoxide (CO), organics, nitrogen oxides, sulfur compounds, polycyclic organic matter (POM), and trace elements. Gaseous emissions may vary considerably according to the grade of carbon black being produced. Organic and CO emissions tend to be higher for small particle production, corresponding with the lower yields obtained. Sulfur compound emissions are a function of the feed sulfur content. It also emits contaminants from the combustion of impurities in the natural gas fuel for the dryer. These contaminants include sulfur oxides, nitrogen oxides, and the unburned portion of each of the species present in the main process vent gas.





End-user industry demand share (%)



■ Tyres ■ Non-Tyre Rubber Products ■ Specialty Carbon Black

Uses of Carbon Black

Mostly an industrial product, carbon black is an essential product for several industries

- Tyres: Carbon black is added to rubber as a filler and as a strengthening or reinforcing agent. For various types of tyres, it is used in inner-liners, carcasses, sidewalls and treads utilizing different types based on specific performance requirements. In order to analyse any carbon black company it is important to look at contracts a company has with the major tyre manufacturers in a country.
- Plastics: Carbon blacks are now widely used for conductive packaging, films, fibers, moldings, pipes and semi-conductive cable compounds in products such as refuse sacks, industrial bags, photographic containers, agriculture mulch film, stretch wrap, and thermoplastic molding applications for automotive, electrical/electronics, household appliances and blow-molded containers. They are also used in colors and pigments for plastics.



Uses of Carbon Black

- **Electrostatic Discharge (ESD) Compounds:** Carbon blacks are carefully designed to transform electrical characteristics from insulating to conductive in products such as electronics packaging, safety applications, and automotive parts.
- **Toners and Printing Inks:** Carbon blacks enhance formulations and deliver broad flexibility in meeting specific color requirements.
- **Other Uses:** Carbon black is also used in many molded and extruded industrial rubber products, such as belts, hoses, gaskets, diaphragms, vibration isolation devices, bushings, air springs, chassis bumpers, and multiple types of pads, boots, wiper blades, fascia, conveyor wheels, and grommets.



Feb 2018 India Carbon Black Crisis

- In Feb 2018, the domestic prices of carbon black rose nearly 60% within six months, with 30% increase coming in the last three months. The prices ranged from Rs 105-130 per kg.
- The association estimated the total production in the country at 9.5 lakh tonnes while the demand was around 12.85 lakh tonnes. Lack of further capacity addition and closure of a major manufacturer in Delhi worsened the situation. The fact that nearly 70% of the carbon black production is mopped up by the tyre industry made the situation worse.
- One of the main route of the crisis was the anti dumping duty on tyre imports from China, which was introduced at a similar time period with the growth of domestic tyre sector. As a result most of the carbon black was taken by the tyre industry leaving India's Rs 30,000-crore non-tyre rubber industry headed for a crisis.
- Experts and manufacturers have slated the rubber industry to grow at 8.42%, although the carbon black capacity has not expanded in the past several years. Without the anti- dumping duty the material can be imported at 20% cheaper rate, with China being the largest supplier of carbon black globally.



Largest carbon black company in India

Company	Capacity (KTPA)
Phillips Carbon Black	571
Birla Carbon (SKI Carbon)	314
Himadri Specialty Chemicals	120
Continental Carbon	85
Ralson Carbon	40



Company Overview and Investment Merits

1. Strong Market Position

- a. Largest carbon black company in India by capacity
- b. 7th largest carbon black company globally by sales with a presence in 37 countries
- c. Biggest exporter of carbon black in India with export sales of 0.95 lakh tonnes in the FY-2019
- d. It has a 10% market share in Asia

2. Focus on Innovation through strong R&D infrastructure

- a. Over 50 grades of rubber carbon black and specialty carbon black
- b. Focus on R&D has led to commercialisation of 14 new grades in the last 3 fiscal years
- c. It is the world's first carbon black company to be awarded Carbon Credit under Kyoto Protocol of United Nations Framework Convention on Climate Change (UNFCCC) for its green production methods
- e. Introduction of Speciality grades helps bolster the company's image as a global trusted partner
- f. Opening a new R&D center in Europe to improve market presence.
- g. PCBL operates state-of-the-art completely integrated four in-house R&D units that are recognized by the Department of Scientific and Industrial Research (DSIR) for development of new products as well as partnering with customers for customizing product/process



3. Great manufacturing capabilities

- a. 4 state-of-art plants strategically located in proximity to tyre plants as well as ports
- b. Seamless ability to switch between procuring alternative feedstocks and ensuring raw material flexibility
- c. A production capacity of 5,71,000 MTPA
- d. Company is focused to commission specialty carbon black which will improve sales volume and operability since specialty carbon black is 3-4x more profitable than rubber carbon black.
- e. With expanded capacities PCBL is sweetly placed to capture demand during the revival of the auto sector and increase market share.

4. Strong Customer relations

- a. Partnerships with leading tyre companies within India and around the globe such as MRF, CEAT, JK, Apollo, TVS, Bridgestone, Goodyear, Michelin, Pirelli, Continental, Toyo, Yokohama, Nexen, Kumho and Loadstar
- b. Speciality black customers include prominent international brands
- c. Joint production development for customised requirements and diversified product portfolio has established long-term partnerships with key customers
- d. It has a well-diversified portfolio of tyre and non-tyre customers which reduces dependence on one sector

5. Co-generation of power using tail gas

- a. Operates a 12 MW co-generation power plant at Palej
- b. Self-reliance for power consumption
- c. Leads to reduction in emissions of greenhouse gases (GHG) by 3,91,780 MT of CO₂ annually



Business Model

1. **Range:** The company offers an expanded portfolio of high-performance, high-margin grades for both rubber and specialty black applications in collaboration with customers. Moreover, it is constantly moving up the value chain to gain market share across all product segments.
2. **Raw Materials:** The company sources raw material by fostering partnerships with multiple vendors, both in India and abroad. A prudent inventory management mechanism ensures seamless operations across all plants. Incoming raw materials passes through stringent quality inspections.
3. **Distribution:** A strong worldwide network of local distributors and channel partners enables the company to leverage knowledge of local market trends. Distributors also help to understand the preferences of global clients. Also, employees are strategically present at global locations.
4. **Brand:** The company has emerged as one of the most trusted carbon black brands, on the strength of global repute, product customisation, quality excellence and timely delivery. Over 90% of the business is generated from repeat clients in FY 2018-19.



Risks/ Threats

1. .Top 25 shareholders own 70.95% of the company (Nucleus Life Trust- 50.2%)
2. PCBL's profitability and cash flows are also exposed to foreign exchange rate fluctuation risks, given the sizeable share of imported raw materials.
3. Companies with growing costs YoY for long term projects
4. Fall in Quarterly Revenue and Net Profit YoY in Recent Results
5. Increasing Trend in Non-Core Income
6. Red Flags: Weakening Technicals and Share Price Decline
7. The crude oil price fluctuation has a major impact on the pricing of carbon black. This affects PCBL more because they do not stock up raw materials for future orders and have a just in time policy as mentioned by Mr. Sanjiv Goenka.
8. .The increasing dumping of carbon black into India by China and other countries also affected the domestic demand
9. The Company is affected by stringent regulations relating to environment which affects operations and global reach
10. .the prices of petrol and diesel stand increased which will increase cost of ownership especially that of commercial vehicles.
11. In case the shutdown in China persists, it is expected to result in an 8-10 per cent contraction in Indian auto manufacturing in 2020
12. Increasing use of silica as reinforcing fillers
13. The domestic carbon black industry is impacted by a slowdown within the automobile sector so business growth susceptible to cyclicity in the domestic automobile industry



Threat of new entrants

- Buyer switching cost is low
- High barriers to entry
- High R&D
- Stringent quality approval norms
- High customer loyalty
- Long gestation period



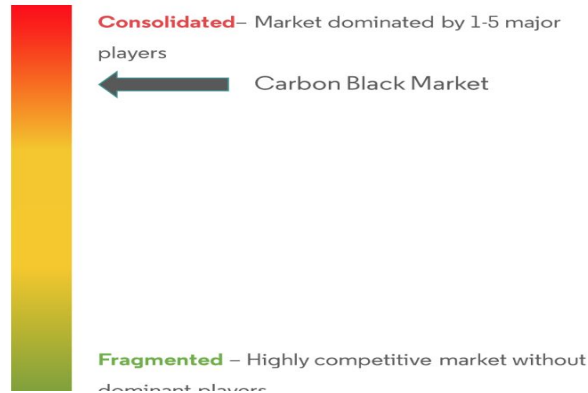
Competitive rivalry

- **High competition-** global carbon black market is a consolidated market, where the top seven players contribute to about 60% of the market share.
- **High customer loyalty to established brands. PCBL has** strong associations which include JK Tyres, Bridgestone, MRF, Ceat, Birla Tyres etc
- PCBL produces carbon black using CBFS a by product of crude oil, this gives it an edge against competitors that use CBO which is a by product of coal tar. Chinese carbon black producers saw the effect of rising coal tar prices in November,2016.

Major Players

- 1 Birla Carbon
- 2 Orion Engineered Carbon
- 3 Cabot Corporation
- 4 Jiangxi Black Cat Carbon Black Co. Ltd

Carbon Black Market Concentration



Supplier Power

Industry has many options of suppliers. **Cabot Corporation, Orion Engineered Carbons, Jiangxi Black Cat Carbon Black Co. Ltd, Tokai Carbon Co. Ltd, China Synthetic Rubber Corporation, Phillips Carbon Black Ltd, etc.**

- High competition among suppliers



Threat of Substitution

- Increasing use of silica as reinforcing fillers
- The global silica market is expected to grow at a CAGR of 7.2% between 2018-2028. The use of silica as a reinforcing agent instead of carbon black has improved rolling resistance, wet grip and wear and abrasion resistance.



Buyer Power

- Buyers are extremely sensitive to quality and prices of raw materials
- High bargaining power of buyers

Financial Analysis



Manufacturing activities that need to be kept in mind while reading Financial Statements

Manufacturing Expansion activities

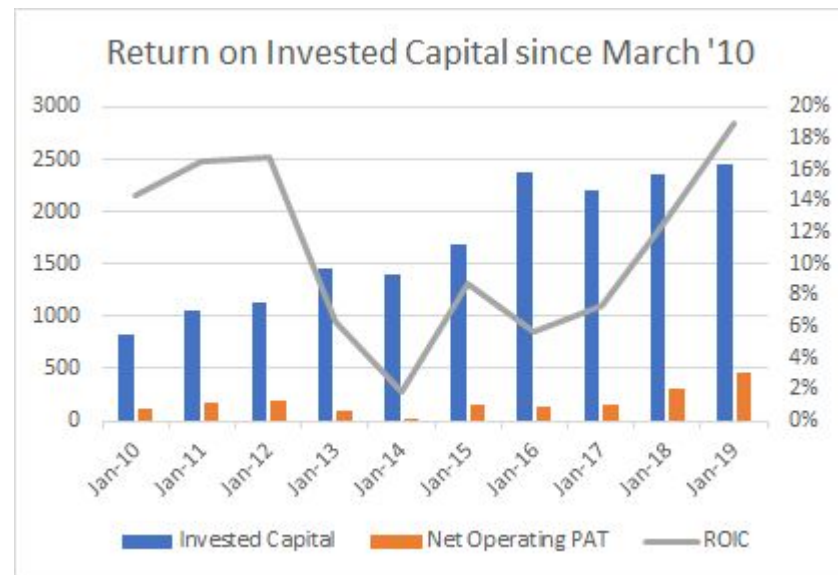
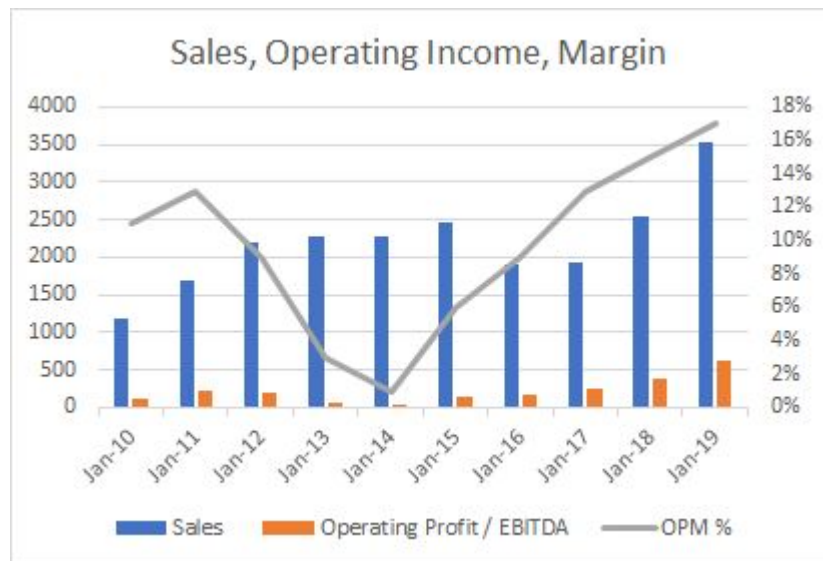
	2011	2012	2013	2019	Future
New Soft Black Line of capacity 50,000 MTPA initiated at Mundra	Capacity addition of 12,000 MT at Durgapur	Expansion of Capacity at Kochi facility by 50,000 MTPA	Expansion of 10 MW co-generation power plant at	Capacity increased by 56,000 MTPA in Mundra Plant	Ongoing Speciality Black project at Palej of Rs.230 crore. PCBL also has a green-field project for a capacity of 1,50,000 MTPA for total cost of Rs.600 crore in Tamil Nadu

Profit and Loss

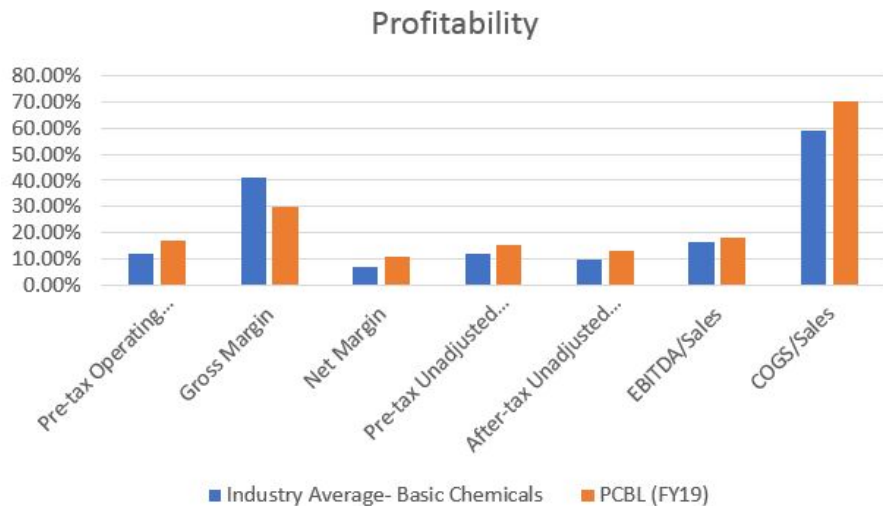
	A	B	C	D	E	F	G	H	I	J	K	L
		Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	
1												
2	Sales	1178	1696	2187	2285	2277	2470	1894	1927	2558	3529	
3	% change		43.97%	28.95%	4.48%	-0.35%	8.48%	-23.32%	1.74%	32.75%	37.96%	
4	Expenses -	1,052	1,474	1,980	2,212	2,252	2,319	1,729	1,669	2,181	2,912	
5	% change		40.11%	34.33%	11.72%	1.81%	2.98%	-25.44%	-3.47%	30.68%	33.52%	
6	Operating Profit / EB	126	222	207	73	25	151	165	258	377	616	
7	% change		76.19%	-6.76%	-64.73%	-65.75%	504.00%	9.27%	56.36%	46.12%	63.40%	
8	OPM %	11%	13%	9%	3%	1%	6%	9%	13%	15%	17%	
9	Interest	21	44	68	72	80	95	72	51	41	37	
10	Depreciation	31	39	49	52	55	58	62	61	61	66	
11	Other Income	2	21	10	8	20	14	17	12	20	19	
12	Profit before tax	130	160	101	-42	-88	12	47	165	304	533	
13	% change		23.08%	-36.88%	-141.58%	109.52%	-113.64%	291.67%	251.06%	84.24%	75.33%	
14	Tax %	6%	30%	16%	47%	1%	14%	66%	58%	24%	28%	
15	PAT	122	113	86	-22	-87	11	16	69	229	384	
16	% change		-7.38%	-23.89%	-125.58%	295.45%	-112.64%	45.45%	331.25%	231.88%	67.69%	
17	EPS in Rs	8.49	6.62	4.84	0	0	0.58	0.92	4.02	13.28	22.26	
18	Dividend Payout %	12%	15%	16%	-8%	0%	32%	54%	30%	11%	16%	



Profitability



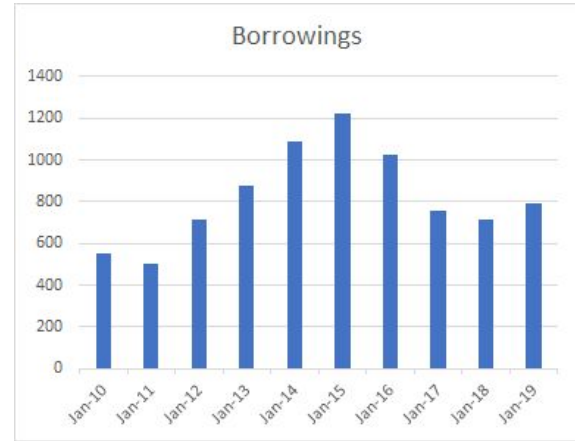
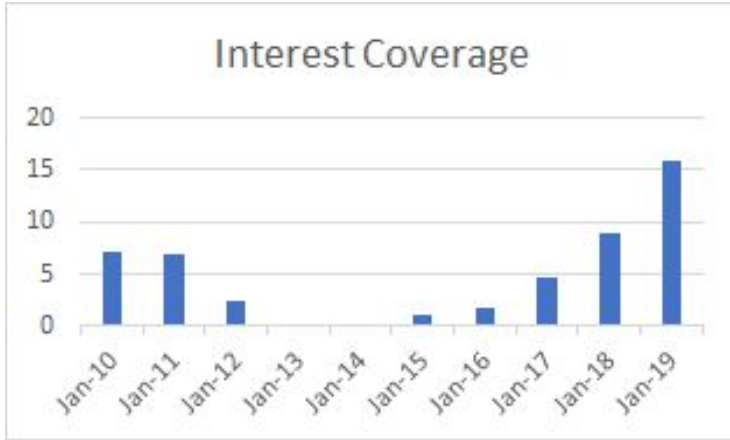
	A	B	C
1		Industry Average- Basic Chemicals	PCBL (FY19)
2	Pre-tax Operating Margin	0.12	0.17
3	Gross Margin	0.41	0.30
4	Net Margin	0.07	0.11
5	Pre-tax Unadj Op Margin	0.12	0.15
6	After-tax Unadj Op Margin	0.10	0.13
7	EBITDA/Sales	0.16	0.18
8	COGS/Sales	0.59	0.70



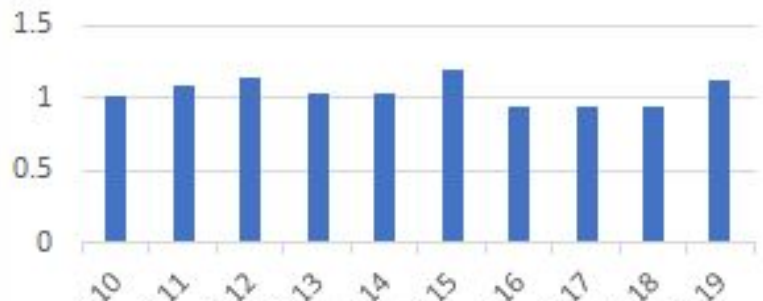
Balance Sheet

	A	B	C	D	E	F	G	H	I	J	K	L
		Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19	
1												
2	Liabilities											
3	Share Capital -	28	33	34	34	34	34	34	34	34	34	
4	Equity Capital	28.25	33.22	34.47	34.47	34.47	34.47	34.47	34.47	34.47	34.47	
5	Reserves	296	476	573	551	467	473	1,010	1,096	1,343	1,615	
6	Borrowings	555	501	711	874	1,087	1,220	1,022	758	717	793	
7	Other Liabilities -	572	726	789	885	622	371	644	697	846	985	
8	Trade Payables	485.08	571.02	626.02	727.21	455.86	153.56	279.32	423.69	411.5	535.13	
9	Total Liabilities	1,451	1,736	2,107	2,345	2,209	2,098	2,710	2,586	2,941	3,429	
10												
11	Assets											
12	Fixed Assets -	593	604	743	782	889	851	1,416	1,388	1,399	1,500	
13	Gross Block	827.9	870.6	1058.51	1147.54	1306.07	1325.71	1478.01	1510.31	1579.51	1746.46	
14	Accumulated Depre	234.75	266.84	315.77	365.29	417.18	474.24	62.12	122.74	180.32	246.15	
15	Net Block	593.15	603.76	742.74	782.25	888.89	851.47	1415.89	1387.57	1399.19	1500.31	
16	CWIP	92	181	102	165	74	80	80	80	67	175	
17	Investments	38	38	38	38	38	86	228	291	316	362	
18	Other Assets -	728	913	1,225	1,361	1,209	1,081	986	828	1,159	1,391	
19	Inventories	196.62	255.33	360.34	499.39	428.74	296.84	244.22	243.52	309.9	460.29	
20	Trade receivables	294.97	362.55	547.34	518.16	517.04	521.42	438.15	465.66	521.97	652.66	
21	Cash Equivalents	33.03	65.72	15.22	74.3	10.85	12.85	51.86	24.53	172.57	115.46	
22	Loans n Advances	203.68	135.62	182.6	151.67	168.1	172.97	204.24	42.28	92.69	122.79	
23	Other Assets etc	0	93.29	119.84	117.18	84.11	77.04	47.92	52.15	61.81	40.08	
24	Total Assets	1,451	1,736	2,107	2,345	2,209	2,098	2,710	2,586	2,941	3,429	

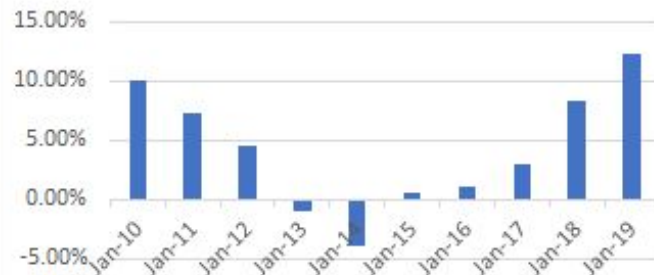




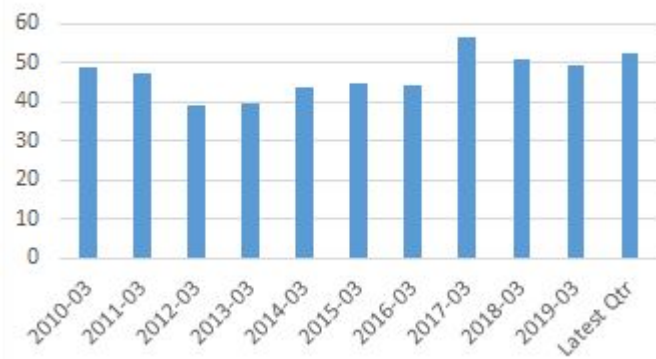
Asset Turnover (Average)



Return on Assets %



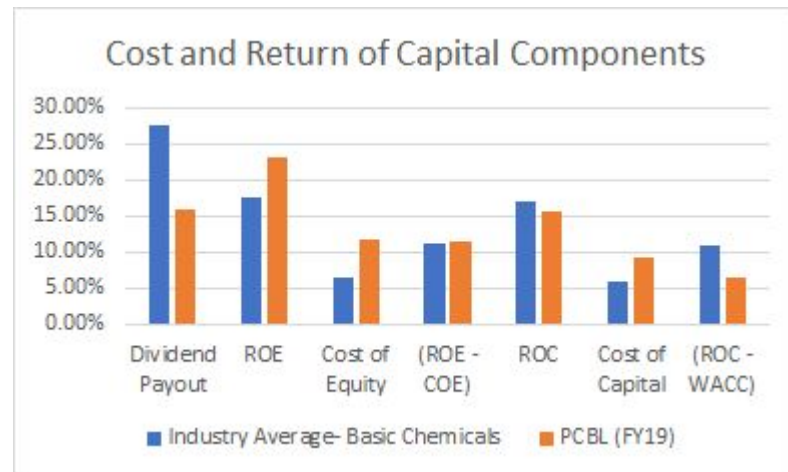
Net PP&E as a % of Total Assets



Inventory Turnover Ratio



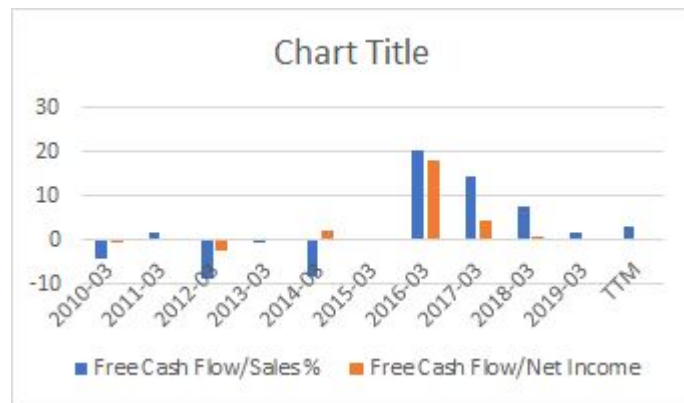
	A	B	C
1		Industry Average- Basic Chemicals	PCBL (FY19)
2	Dividend Payout	27.62%	16.00%
3	ROE	17.59%	23.28%
4	Cost of Equity	6.42%	11.86%
5	(ROE - COE)	11.17%	11.42%
6	ROC	16.99%	15.72%
7	Cost of Capital	6.00%	9.35%
8	(ROC - WACC)	10.99%	6.37%



Cash Flow Activities

	A	B	C	D	E	F	G	H	I	J	K	L
	Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-19		
Profit from operations	176.11	232.69	206.86	77.16	22.94	169.04	159.32	270.8	469.6	638.85		
Working Capital Changes	-109.25	-21.39	-278.18	50.69	-174.92	-132.38	273.86	109.45	-108.73	-220.84		
Taxes paid	-24.57	-24.34	-19.98	1.09	2.53	-1.33	-11.18	-33.8	-68.32	-128.12		
Cash from Operating Activity -	42	187	-91	129	-149	35	422	346	293	290		
Fixed Assets Purchased	-94.25	-156.76	-94.05	-140.19	-41.09	-34.3	-38.94	-40.71	-94.43	-232.74		
Fixed Assets Sold	0.38	2.08	0.2	0.44	0.17	0.88	4.66	0.06	0.05	1.21		
Investments purchased	-12.5	-331.22	-170.5	-35.03	-286.5	-47.92	-1099.21	-2518.11	-2969.27	-2577		
Investments sold	12.51	331.26	170.5	35.04	286	0	1002.65	2518.87	3026.15	2524.91		
Cash from Investing Activity -	-98	-148	-88	-130	-36	-68	-121	-36	-34	-278		
Proceeds from Shares	0	111.75	20.01	0	0	0	0	0	0	0		
Proceeds from Borrowings	203.4	224.26	405.44	1454.68	2125.13	2173.36	1961.9	1064.35	1420.86	1300.07		
Repayment of Borrowings	-72.3	-250.85	-218.05	-1305.24	-1929.58	-2025.47	-2141.17	-1282.79	-1474.43	-1055.33		
Interest Paid	-49.62	-44.33	-59.66	-73.04	-92.53	-93.6	-71.5	-50.1	-31.1	-46.75		
Dividends Paid	-0.04	-19.23	-19.2	-13.66	-1.7	-0.07	-4.15	-35.26	-25.22	-96.73		
Net Cash Flow	26	33	-50	59	-63	1	39	-27	148	-58		
Cash from Financing Activity -	81	-6	129	60	122	34	-262	-337	-110	70		





Intrinsic Valuation: Inputs and Assumptions

	A	B
6 Industry		Chemical (Basic)
7 Revenues		346414.68
8 Operating income or EBIT		39020
9 Book value of equity		164989.07
10 Book value of debt		79194.7536
11 Do you have operating lease commitments?		Yes
12 Cash and cross holdings		11357.14
13 Non-operating assets		0
14 Minority interests		584.56
15 Number of shares outstanding =		1723.3786
16 Current stock price =		66.9
17 Effective tax rate =		24.45%
18 Marginal tax rate =		32.44%
19 The value drivers below:		
20 Compounded annual revenue growth rate over next 5 years =		8.00%
21 Target pre-tax operating margin (EBIT as % of sales in year 10) =		13.50%
22 Sales to capital ratio (for computing reinvestment) =		1.487865028
23 Market numbers		
24 Riskfree rate		6.16%
25 Initial cost of capital =		9.25%

	A	B
33 Default assumptions.		
34 <i>In stable growth, I will assume that your firm will have a cost of capital similar to that of typical mature companies (riskfree rate + 4.5%)</i>		
35 Do you want to override this assumption =		No
36 If yes, enter the cost of capital after year 10 =		6%
37 <i>I will assume that your firm will earn a return on capital equal to its cost of capital after year 10. I am assuming that whatever competitive advantages you have today will fade over time.</i>		
38 Do you want to override this assumption =		No
39 If yes, enter the return on capital you expect after year 10		10%
40 <i>I will assume that your firm has no chance of failure over the foreseeable future.</i>		
41 Do you want to override this assumption =		No
42 If yes, enter the probability of failure =		20%
43 What do you want to tie your proceeds in failure to?		√
44 Enter the distress proceeds as percentage of book or fair value		50%
45 <i>I will assume that your effective tax rate will adjust to your marginal tax rate by your terminal year. If you override this assumption, I will leave the tax rate at your effective tax rate.</i>		
46 Do you want to override this assumption =		No



Intrinsic Valuation: Output

	A	B	C	D	E	F	G	H	I	J	K	L	M
1		<i>Base year</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	Terminal year
2	Revenue growth rate		8.00%	8.00%	8.00%	8.00%	8.00%	7.63%	7.26%	6.90%	6.53%	6.16%	6.16%
3	Revenues	\$ 346,414.68	\$ 374,127.85	\$ 404,058.08	\$ 436,382.73	\$ 471,293.35	\$ 508,996.82	\$ 547,843.45	\$ 587,638.80	\$ 628,162.37	\$ 669,168.81	\$ 710,389.61	\$ 754,149.61
4	EBIT (Operating) margin	11.26%	11.49%	11.71%	11.93%	12.16%	12.38%	12.61%	12.83%	13.05%	13.28%	13.50%	13.50%
5	EBIT (Operating income)	\$ 39,020.00	\$ 42,978.17	\$ 47,319.91	\$ 52,081.27	\$ 57,301.61	\$ 63,023.88	\$ 69,058.86	\$ 75,389.28	\$ 81,992.72	\$ 88,841.50	\$ 95,902.60	\$ 101,810.20
6	Tax rate	24.45%	24.45%	24.45%	24.45%	24.45%	24.45%	26.05%	27.65%	29.24%	30.84%	32.44%	32.44%
7	EBIT(1-t)	\$ 29,479.61	\$ 32,470.00	\$ 35,750.19	\$ 39,347.40	\$ 43,291.37	\$ 47,614.54	\$ 51,070.41	\$ 54,547.16	\$ 58,014.77	\$ 61,441.00	\$ 64,791.79	\$ 68,782.97
8	- Reinvestment		\$ 18,626.13	\$ 20,116.23	\$ 21,725.52	\$ 23,463.57	\$ 25,340.65	\$ 26,108.98	\$ 26,746.61	\$ 27,236.05	\$ 27,560.59	\$ 27,704.66	\$ 29,747.01
9	FCFF		\$ 13,843.87	\$ 15,633.97	\$ 17,621.88	\$ 19,827.80	\$ 22,273.89	\$ 24,961.43	\$ 27,800.55	\$ 30,778.72	\$ 33,880.41	\$ 37,087.13	\$ 29,035.96
10	NOL	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
11													
12	Cost of capital		9.25%	9.25%	9.25%	9.25%	9.25%	9.53%	9.81%	10.10%	10.38%	10.66%	10.66%
13	Cumulated discount factor		0.9153	0.8378	0.7669	0.7019	0.6425	0.5866	0.5341	0.4852	0.4395	0.3972	
14	PV(FCFF)		\$ 12,671.57	\$ 13,098.31	\$ 13,513.61	\$ 13,917.68	\$ 14,310.71	\$ 14,641.63	\$ 14,849.52	\$ 14,932.61	\$ 14,891.91	\$ 14,731.07	

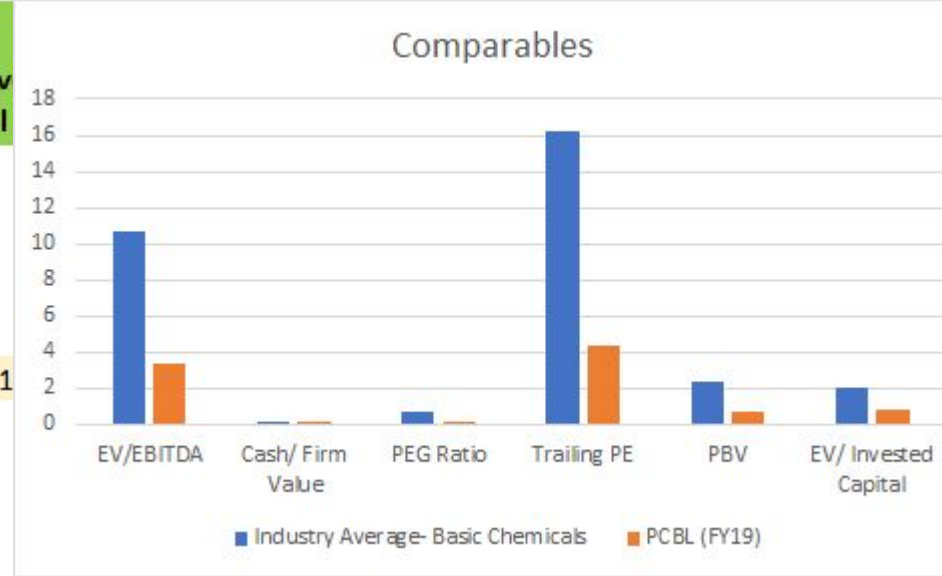


Intrinsic Valuation: Output

16	Terminal cash flow	\$ 29,035.96
17	Terminal cost of capital	10.66%
18	Terminal value	\$ 645,243.62
19	PV(Terminal value)	\$ 256,291.76
20	PV (CF over next 10 year	\$ 141,558.61
21	Sum of PV	\$ 397,850.37
22	Probability of failure =	0.00%
23	Proceeds if firm fails =	\$198,925.19
24	Value of operating assets =	\$ 397,850.37
25	- Debt	\$ 79,943.29
26	- Minority interests	\$ 584.56
27	+ Cash	\$ 11,357.14
28	+ Non-operating assets	\$ -
29	Value of equity	\$ 328,679.66
30	- Value of options	\$0.00
31	Value of equity in common	\$ 326,427.69
32	Number of shares	1,723.38
33	Estimated value /share	\$ 189.41
34	Price	\$ 66.90
35	Price as % of value	41.10%



	EV/EBITDA	Cash/ Firm Value	PEG Ratio	Trailing PE	PBV	EV/ Inv Capital
Industry Average- Basic Chemicals	10.65	2.57%	0.75	16.22	2.35	
PCBL (FY19)	3.335763	3.65%	0.1	4.35	0.7	0.7821



- PCBL also declared an interim dividend of Rs7/share including special dividend of Rs 3.5
- EBITDA/tonne expected to improve to Rs12,268/tonne in FY21E & Rs12,886/tonne in FY22E vs. Rs11,827/tonne in FY20E
- Operating leverage benefits on account of brownfield nature of expansion and increasing share of speciality grade CB are expected to lead to EBITDA margin expansions

Short Term Effects of COVID-19

- China produces the largest amount of Carbon Black in the world. With the country not being able to export and provide enough supply to meet international demand, Phillips Carbon Black is in a good position to pick up that demand considering that they are primed for increasing their manufacturing capabilities.
- Since crude oil prices have fallen significantly, the company may be able to benefit for a short while since oil is the major raw material.
- However, the uncertainty surrounding the epidemic will surely affect the production, sales and consequently revenue and performance of the company in the next few months.
- Seeing signs of a recession and noticing its effect on the fall in share price, purchasing shares of a company which has great underlying value is highly suggestable given the discount at which the share is selling for.



Long Term Effects of Covid-19

- The company largely services demand for tyre manufacturers. Considering the fact that most tyre sales are attributed to replacement of existing tyres rather than to new cars, even if the auto industry suffers due to the pandemic, the company will not be severely affected, having considered their increased manufacturing capabilities and ability to service demand unmet by Chinese manufacturers.
- However, India's ability to deal with the pandemic is highly important in ensuring the loss made by most companies is minimised, Phillips Carbon Black included.



Board of Management

- Philips carbon black is a subsidiary of the RPSG group.
- This group headed by Mr. Sanjiv Goenka has showed great results in all companies under it ranging from SaReGaMaPa to Spencer's retail.
- Last year the group was eyeing a turnover of Rs 40,000 crores in the next 5 years, with expansion of PCBL and setting up of an R&D center in europe acting as major parts to play in these projections.

