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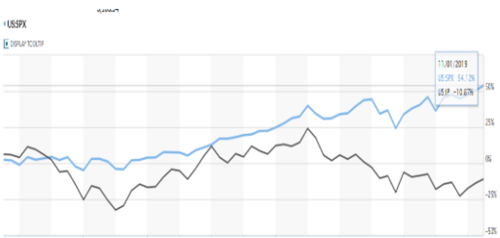
Ticker: IP
Company: International Paper Corporation
Sector: Material
Analyst: Bo Pang

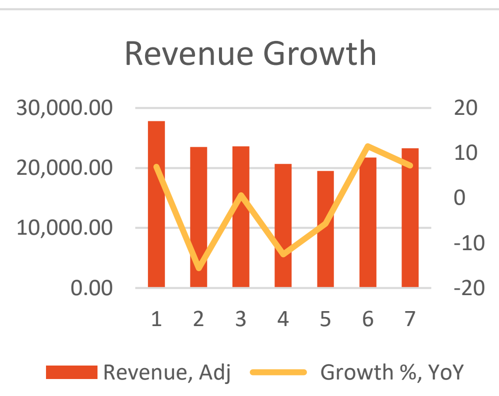
Recommendation: Hold
Current Price: $45.24
Target Price: $44.00
Date: 11/23/2019

Market Snapshot	
SharesOutstanding (mn)	395
Market Cap (USD bn)	$17.74
52-week low	$36.45
52-week high	$48.24
TTM P/E	12.98
Beta	1.37

Source: Bloomberg



Source: Market Watch



Source: Company Data

Investment Thesis

The price target of $44 is based on 7.985X EBITDA multiple times the EBITDA in FY20 of 1541.61. Given its strong growth and successful growth initiatives, I used average industry EBITDA multiple in 2020 to arrive a 7.985X, which I believe is reasonable given that it is still a discount compare to the highest level after Q3 earning beat.

The DCF calculation also gives a similar target price of $45.59, and it’s considered to be a conservative estimate given companies conservative guidance and strategic growth plan.

Established Global Supply Chain and Capacity:

IP has established a global supply chain that has operation in all continents; the company has a specialty team that focus on optimal distribution within the supply chain. For the Industry, buyers that has international operations benefit from working with conglomerate suppliers like IP because of scalability. As we have seen in the past decade, demands for global shipping has been rising at 3.8% CAGR from 2010 to 2019. IP is well positioned to be benefit from this trend.

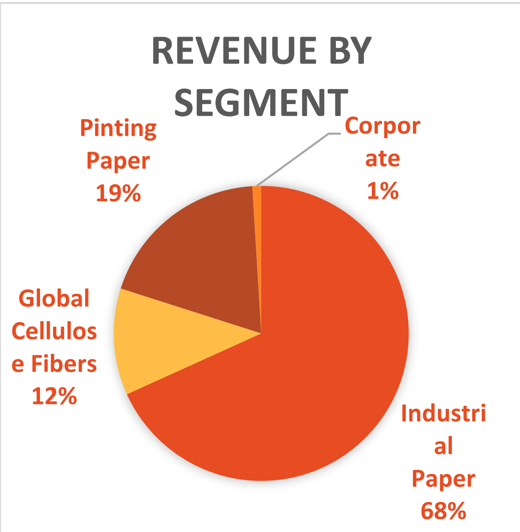
Attractive dividend:

We note a solid free cash flow, which has averaged $1.9 billion over the last three years from 2016 to 2018. We think IP has a strong balance sheet, which enables IP to pay an attractive dividend, while pursuing growth opportunities. IP plans on keeping its cash balance at around $600 million, with the remainder of free cash flow likely going towards share repurchases and debt reduction.

Though cyclical, Rises with GPD:

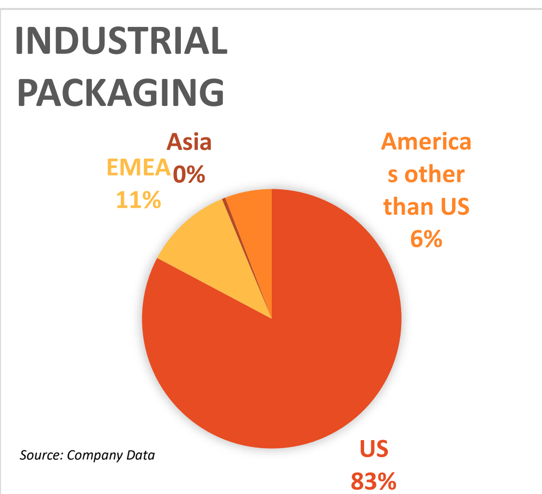
The company has been growing at a 1.4% CAGR for the past 5 years, which we think is already a steady state. As the CEO of IP mentioned in an interview with CNBC, the company typically “grows under the GPD.” Given that we don’t see any downside catalyst in the recent years of paper industry, we think that the growth can keep up with GPD which eliminated some degree of unsystematic risk.

Business Description



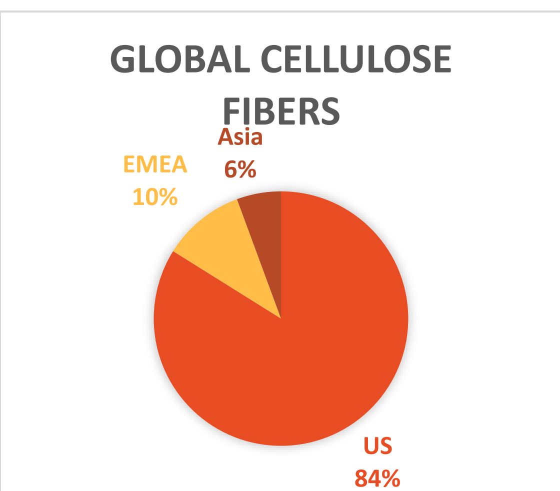
International Paper (NYSE: IP) is a leading global producer of renewable fiber-based packaging, pulp and paper products with manufacturing operations in North America, Latin America, Europe, North Africa and Russia. We produce corrugated packaging products that protect and promote goods, and enable world-wide commerce; pulp for diapers, tissue and other personal hygiene products that promote health and wellness; and papers that facilitate education and communication. We are headquartered in Memphis, Tenn., employ more than 50,000 colleagues and serve more than 25,000 customers in 150 countries. Net sales for 2018 were $23 billion. The Company operates through it four segments: Industrial Packaging, Global Cellulose Fibers, Printing Papers and Consumer Packaging. The Company is a manufacturer of containerboard in the United States. Its products include linerboard, medium, whitetop, recycled linerboard, recycled medium and saturating kraft. The Company's cellulose fibers product portfolio includes fluff, market and specialty pulps. The Company is a producer of printing and writing papers. The products in Printing Papers segment include uncoated papers.

Source: Company Data



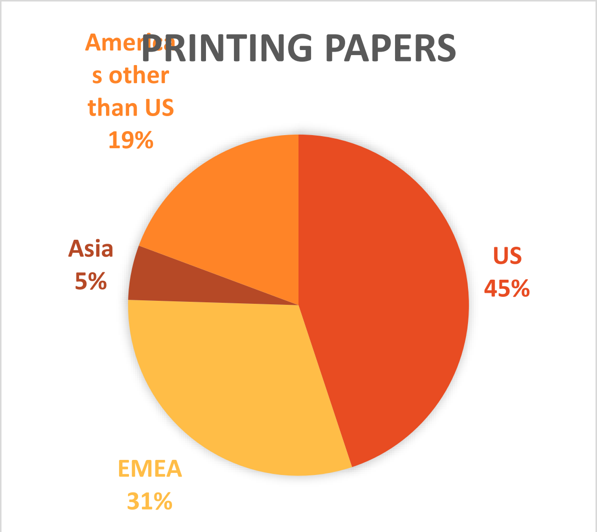
Industrial Packaging: International Paper is the largest manufacturer of containerboard in the United States. Our U.S. production capacity is over 13 million tons annually. Our products include linerboard, medium, whitetop, recycled linerboard, recycled medium and saturating kraft. About 80% of our production is converted into corrugated boxes and other packaging by our 179 North American container plants. Additionally, we recycle approximately one million tons of OCC and mixed and white paper through our 18 recycling plants. Our container plants are supported by regional design centers, which offer total packaging solutions and supply chain initiatives. In EMEA, our operations include one recycled fiber containerboard mill in Morocco, a recycled containerboard mill in Spain and 26 container plants in France, Italy, Spain, Morocco and Turkey. In Brazil, our operations include three containerboard mills and four box plants.

International Paper also produces high quality coated paperboard for a variety of packaging end uses with 428,000 tons of annual capacity at our mills in Poland and Russia.



Global Cellulose Fibers: Our cellulose fibers product portfolio includes fluff, market and specialty pulps. International Paper is the largest producer of fluff pulp which is used to make absorbent hygiene products like baby diapers, feminine care, adult incontinence and other non-woven products. Our market pulp is used for tissue and paper products. We continue to invest in exploring new innovative uses for our products, such as our specialty pulps, which are used for non-absorbent end uses including textiles, filtration, construction material, paints and coatings, reinforced plastics and more. Our products are made in the United States, Canada, France, Poland, and Russia and are sold around the world. International Paper facilities have annual dried pulp capacity of about 4 million metric tons.

Source: Company Data



Source: Company Data

Printing Papers: International Paper is one of the world's largest producers of printing and writing papers. The primary product in this segment is uncoated papers. This business produces papers for use in copiers, desktop and laser printers and digital imaging. End-use applications include advertising and promotional materials such as brochures, pamphlets, greeting cards, books, annual reports and direct mail. Uncoated papers also produces a variety of grades that are converted by our customers into envelopes, tablets, business forms and file folders. Uncoated papers are sold under private label and International Paper brand names that include Hammermill, Springhill, Williamsburg, Postmark, Accent, Great White, Chamex, Ballet, Rey, Pol, and Svetocopy. The mills producing uncoated papers are located in the United States, France, Poland, Russia, Brazil and India. The mills have uncoated paper production capacity of over 4 million tons annually. Brazilian operations function through International Paper do Brasil, Ltda, which owns or manages approximately 329,000 acres of forestlands in Brazil

Joint Venture:

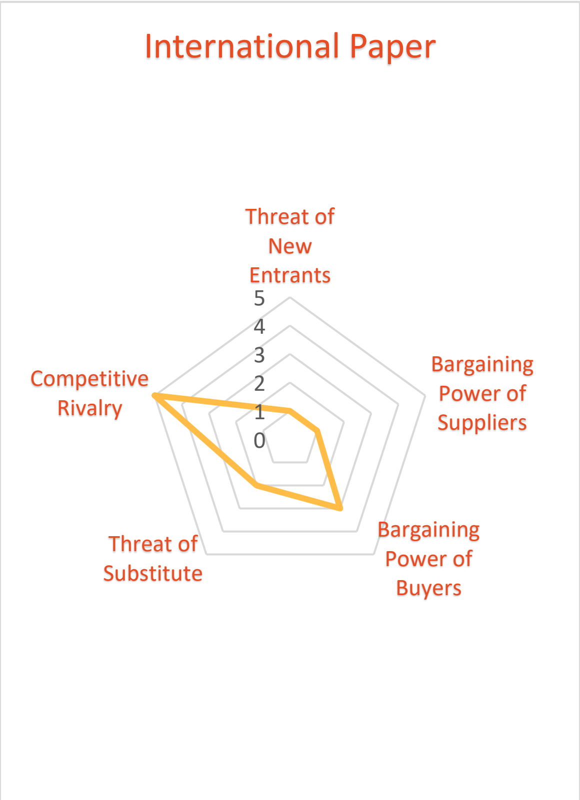
In Jan 2018, the company transferred its graphic paper segment to Graphic Paper Inc. which is one of the best Graphic paper for consumer packaging. The company now owns 21% ownership. Furthermore, International paper, in 2007, completed a 50:50 joint venture deal with Llim, a pulp and paper business in Russia. The equity investment income is about 8% of their operating profit and has been growing at a rate more than 50% in the past two years.

Industry Overview

Companies in this sub-industry make a variety of products used to package and protect items during shipment, including containerboard, corrugated boxes, tubes and cores, and multi-wall sacks. Products that are shipped in paper packaging include large and small appliances, electronic items, agricultural products, processed food and cement. The paper packaging industry excludes diversified packaging companies that have substantial operations in metal, plastic, or glass (classified in the Metal & Glass Containers sub-industry) and excludes manufacturers of cardboard stock (classified in the Paper Products sub-industry). The primary competitive factors in this sub-industry include price, design, quality, product innovation and service. Larger customers, with large geographical breadth, usually seek large, geographically-diversified suppliers that can supply all or a large proportion of their packaging needs, which has led to significant consolidation in the space. The industry also faces competition from materials other than paperboard and container-board packaging. Paper packaging companies operate in a very competitive global marketplace. Paper packaging companies are affected by a range of macroeconomic conditions, including the strength of the economy in the U.S. and abroad, industry capacity changes, exchange rates and global competition. Demand in this sub-industry has historically been closely tied to the overall strength of the economy, and can be quite cyclical and seasonal

Source: CFRA

Competitive Positioning



Threat of New Entrants:
Threat of new entrants is low because of high fixed cost; Paper making process requires heavy machinery, which sort of explains why international paper has around $1.5 billion in Capital Expenditure. Furthermore, international supply chain for products that are bulky is hard to establish.

Bargaining Power of Suppliers:
Bargaining power of supplier is low; Major raw material of paper making includes softwood, hardwood, and pulp. While the raw materials are renewable commodities, the raw material price fluctuates with the commodity price, and the commodity market usually have consensus price due to the number of market participants.

Bargaining Power of Buyers:
The bargaining of buyers is high; paper packaging is a highly competitive industry. While companies in this industry competes on price and quality, alternative material packaging also competes with the paper packaging industry. The buyer can switch suppliers easily if the operation scale is small. Big customers, in terms of geographically breadth and amount needed usually seeks international supplier. So international paper specifically can suffer less from the competition.

Threat of Substitute:

Threat of substitute is low in the near future; There are alternatives for paper packaging, but container board shipment remains the main method of shipping goods in the near future. According to JOD: "For box manufacturers, there is no reasonable substitute for containerboard: boxes made from other types of paper lack the required performance characteristics, such as the necessary strength, basis weight, and thickness." While IP is a leading player in the industry, in terms of Capex and innovation, with over 1,500 patents. Thus the treat of substitute is low.

Competitive Rivalry:

Again, the competitiveness in this industry is high. However, consider the industry is mature and has gone through a number of consolidations. Major players in the industry mostly has their own specialties. For example, IP transferred its graphic paper unit (consumer packaging) to Graphic Paper Inc, a leading consumer packaging manufacturer in the world, for a 21% ownership.

Since IP has 3 segments for different product, the company would compete with the leading manufacturer of specific product. Comparable companies include Packaging Corp of America (Specialty Packaging), Graphic packaging holding (graphic paper), Cascades Inc (Tissue), Westrock(Containerboard), Sonoco Products (2nd largest Containerboard manufacturer next to IP).

Valuation

	Price		Weight	
Price Target by Comps	**$**	**41.80**		**50%**
Price Target by FCFF	**$**	**45.55**		**50%**
Price/Share			**$**	**43.68**

We issue a HOLD recommendation for IP with a target price of $44, representing a downside of 3% from $45.24 per share on November 22, 2019. Our target price is based on the average of the relative valuation model with a target price of $41.8 and the intrinsic valuation model with a target price of $45.95. We weighted the intrinsic valuation model at a weight of 50% and absolute valuation model at a weight of 50%.

We decided to weight both method 50% due to the general Macro-demand decline for containerboard and companies' abilities for keep up with GDP for over the past 100+ years.

Revenues:

Revenue in 2019 is calculated by annualizing their 9-month results in FY19 with a premium due to the seasonality of the business. The revenue growth in FY19 is -5.4% due to the company just had its record year in 2018. In 2018, low raw material cost, higher product price mix and higher demand all contributed to the record deal. While in 2019, things start to cool off, the company mainly suffers from lower product mix price and higher raw material cost. In FY 2020, I forecasted the growth rate of each segments, based on the demand of containerboard, raw material cost forecast, and historical revenue growth. After 2020, I give a constant growth of 1.4% because I argue that the company is already in a mature stage. The company has been around for 120+ years, and paper making industry is a mature industry. Meaning company is already in a steady state. Thus, the forecasted growth rate is in line with the last 10 years CAGR of 1.4%.

Margins

Margins are in line with 2017 margin with a little adjustment. The reason is that the company has gone through a number of selling and buying new business in the past decades. 2017 is the year without one-time expense or gain, and the raw material and price mix, without many fluctuations, is around the average of the historical price in the last three years.

Capital Expenditures:

Capital Expenditures has been 10.00%- 10.50% of the PP&E for the past 7 years. And PP&E hasn't been changed for the past three years as % of the revenue.

Taxes:

Tax rate used in the FCFF calculation and WACC calculation is 25%. In line with the management guidance for FY 2019 and FY2020

Terminal Growth Rate:

Terminal Growth rate of 1.8%, above average of 1.4%, is based on the historical growth plus a premium because the company typically rises under the GDP, and 1.8% is a reasonable estimate. Furthermore, the company is very cyclical to the demand and the cost of material. So, we do not want to exclude the best years like FY2018, where the revenue growth was around 7%

Plug number (in millions)		Comments
Gross Margin	**31.26%**	In line with 2019 forecast as of 9/30/2019
Interest Expense Rate	**330**	In line with FY19 guidance
Revenue growth after 2021, including 2021	**1.40%**	Given that the company has -1.09% average 10 year growth rate and a CAGR of 1.4%, which lags the broader market
Revenue growth at terminal rate	**1.80%**	1.8% Terminal grwoth rate might seems high for a -1.09% 10 year growth, but Techonolgy can have profound impact in a mature sector, so I give it a higher
Equity Investment	**280**	Estimated based on annulized Q3 FY19, annulization works well for previous years
Effective Tax rate in 2018	**25.00%**	Company Guidance
Effective Tax rate after 2019	**25.00%**	10-Q Information
Account Receivable turnover 2019 and after	**6.99**	Average A/R Turnover (Revenue/Working Capital) from 2014 - 2018
Inventory Turnover 2019 and after	6.4475	Average Iventory TO, and it's relatively stable in last five years
Account Payable 2019 and after	6.39	In line with both the average and 2018 level
Depreciation As % of PPE	**10.2%**	In line with average Depr. As % of revenue in 2015 -2018, and PPE didn't not change over the years
G&A cost as % of Revenue in 2018	**7.4%**	In line with 2018 level, also fit well for histroical level
CapEx	1300	2019 management guidance
Capex After 2019 As % of Revenu	1300	Given that Capex was relatively stable for last 10 years, and the cpmany has well planed CapEX activities in the future which keeps this cost stable

WACC:

We arrived at a WACC of 7.78% for IP. A detailed breakdown of our WACC is presented below:

International Paper
Estimation of WACC
As of 11/12/2019

Cost of Debt[1]	2.0000%
Cost of Equity[2]	11.52%
MV of Total Debt ($ millions)[3]	$10,787
MV of Equity($ millions)[4]	$18,111
Weight of Debt	37.33%
Weight of Equity	62.67%
WACC[5]	**7.78%**

[1]Cost of debt (2%) is based on Baa2 rating of the company as of 09/30/2019.
(Source: NYU Stern Professor D..)

[2]The cost of equity is estimated using the CAPM and assuming a risk free rate of 1.88%, 10-Year Treasury note on 11/14/2019
(Source: https://www.treasury.gov/),
the average market premium is 8.5%(TTM), and average Beta is 1.37

[3]The market value of debt is estimated by the book value of interest bearing debt equaling short/current LT debt plus LT debt.
(Source: 10-Q, quarterly balance sheet as of 9/30/2019.)

[4]The market value of equity is estimated by multiplying the 399M shares outstanding times the stock price of $45.85/share on 11/14/2019.
(Source: finance.yahoo.com.)

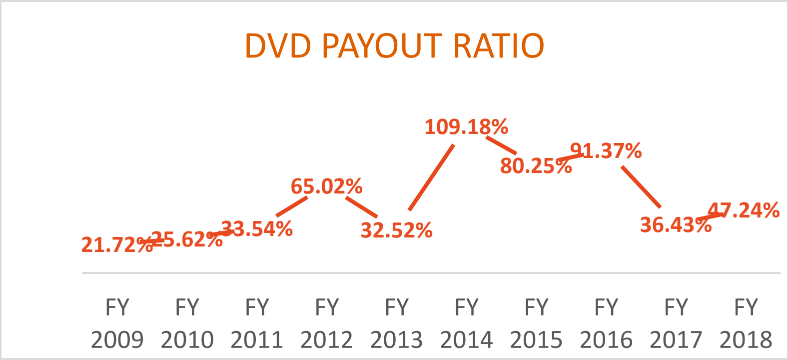
Source: Bloomberg

Relative Valuation:

As mentioned above at the beginning of this report. Our 12-month target price of $41.8 is based on the average of two methods. Price/sales and industry EBITDA multiple. For large cap companies like IP with high fixed cost, we decided to use EBITDA multiple because it includes Depreciation. Next, we chose P/S measure over P/EPS because IP's EPS can make a lot of adjustments year over year due to the consolidation of their businesses and industry, so we think P/S is a more reliable measure.

Financial Analysis

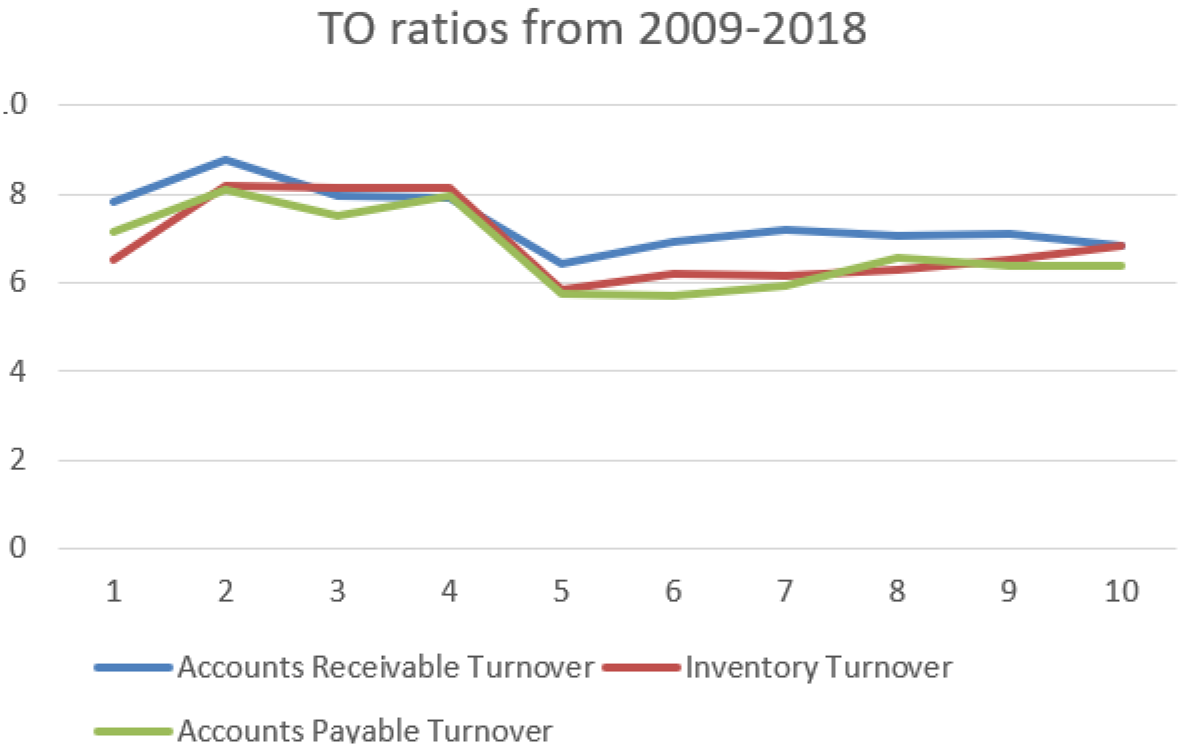
Above the average Dividend Payout Ratio:



The company has very health stream of cash flows, they maintained payout ratio average of 50% in the past 10 years while not being under invest in other area. Again, the company has invested at least $1.5 billion on capital expenditure ever year.

ROA:
Return on Asset is on an upward trend. FY17 and FY18 both exceeded the past 10-year average of 13.7%. ROA in FY17 and FY18 are 15.1% and 17.67% respectively. On the other hand, we could say that the company has increased its operating efficiency in the past 10 years by consolidation and restructuring, which is very valuable in the manufacturing industry.

Working Capital:
The three different turnover ratios have been steady for the past 10 years. The cash conversion cycle has become less. In order to estimated future change in working capital. I used each of the turnover rate to forecast the future working capital since their TO ratios are relatively easy to predict and their revenue/WC capital ratio is not steady.



Source: Bloomberg

Investment Risk

Market Risk | Trade Uncertainty/ Cycle risk

International paper has 2% of revnue from China. In this sense, Tariff wouldn't matter much, but we have seen that IP stock price has been senstive to the trade news. Besides market risk the company has, people were mainly fearing the secondary impact of trade war. When consumers got hit, less people would buy, therefore less packaging is needed. Recent trade headlines remains to be a major threat.

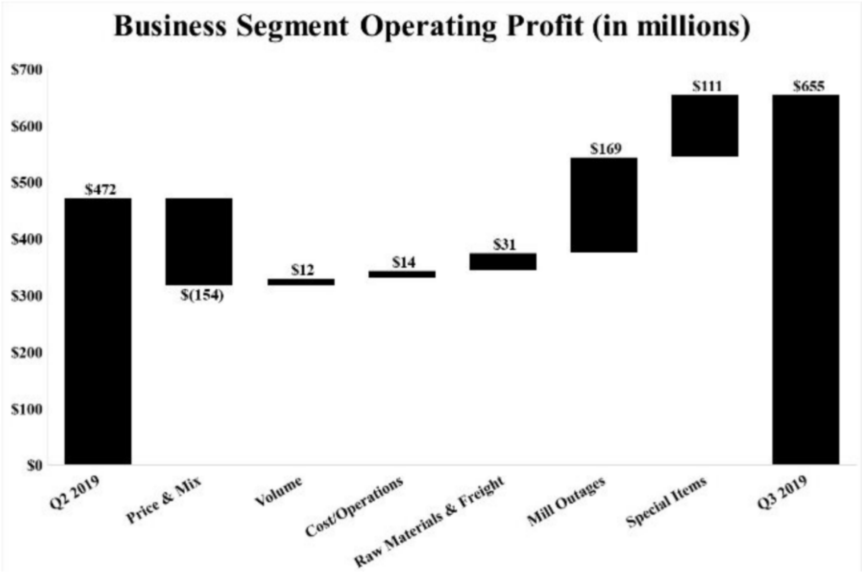
Market Risk | Commodity price/Currency exchange rate

Commodity price is their major driver or revenue since competitiveness in the market is high and companies gain little margins. Besides that, in order to establish globe supply chain. IP has mills and distribution center across the globe. 28% of their revenue from exports. So currency exchange rate risk is also one of the major risks. Generally, speak, a weak dollar and strong local currency would be favorable to the company.

Operational Risk | High fixed cost

Given that the fixed cost is high in paper packaging industry. When there is a major substitute for paper packaging or a recession, the demand of paper packaging could drop, and hurt company's bottom line. Especially in the event of recession, companies have to turn down production to keep the cost low. However, with such heavy machinery, and global scale of the business, production is hard to turn down during recession, which ultimately drives higher cost and lower profitability.

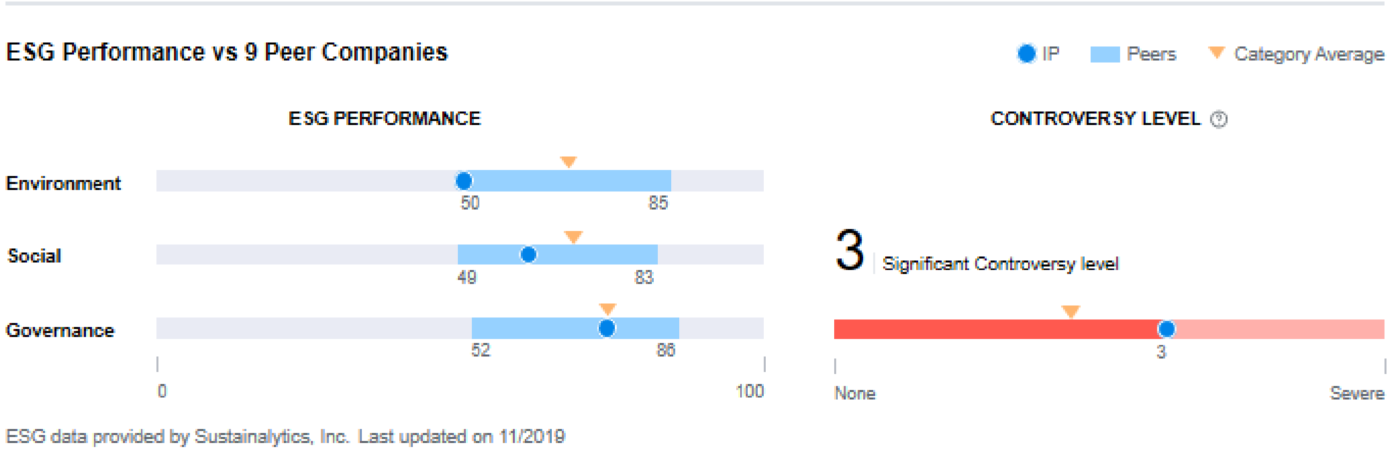
Operational Risk | Revenue Driver



In the figure above, it shows the items that contribute to the change of operating profit from quarter to quarter. Major drivers include price mix, volume, raw material & freight, and mill outage cost. Things that make these drivers to change are Macro-economy indicators; For example, non-durable industrial goods production, demand for processed foods, poultry, meat and agricultural products, consumer spending, commercial printing as well as price of wood and paper.

Environmental, Social and Corporate Governance

Environmental:



IP has been underperforming its peers in term of Environmental assessment accommodate with an low overall ESG score compare to companies within the industry. Major reason is that the company has operations across the world and is the leader in containerboard and uncoated paper industry in the US. Thus the large amount of production could generate relatively more waste. On the other hand, if we could somehow normalize this number to industry average size. I believe IP can do much better. The company has long-term projects that benefits stakeholder. For example, IP helps the local farms to plant trees and distribute dividends to the residents. Other initiatives include 15% waste reduction (solid waste), and 46% emission reduction in 2020.

Social:

IP is such a mature company with steady dividend and cash flow, they companies another focus besides keep up the growth is social responsibility. Energy, real estate, material companies are discussed the most when it comes the ESG investing, and I think IP has the awareness of being the "greenest" company in the industry. IP has sustainabibilty collobration with World Wildlife Fund (WWF), The National Fish and Wildlife Foundation (NFWF), Carolinas Working Forest Conservation Collaborative, Corporate Eco Forum, Mercer/ORC Occupational Safety and Health Group, The World Business Council for Sustainable Development (WBCSD), and World Environment Center (WEC). International Paper's entire business depends on the sustainability of the forest. Because this foundation involves harvesting trees, ensuring forest survival is smart business and environmentally responsible. International Paper strongly believes that continued progress is a collaborative effort. Relationships with other organizations help us broaden our sustainability efforts so that together, we have a greater impact.

Corporate Governance:

International Paper is a world leader in renewable fiber-based packaging, pulp and paper products, has been recognized by the Ethisphere Institute, a global leader in defining and advancing the standards of ethical business practices, as one of the 2019 World's Most Ethical Companies. International Paper has been recognized for thirteen consecutive years and is one of only two honorees in the forestry, paper and packaging industry, underscoring their commitment to leading with integrity and prioritizing ethical business practices.

APPENDIX 1: FINANCIAL RATIOS

	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	**FY 2017**	FY 2018	Average
Margins											
Gross Margin	34.86	26.6	27.17	26.03	30.66	31.18	30.77	27.89	**31.92**	33.26	30.034
EBITDA Margin	14.29	11.46	12.79	11.43	14.42	12.25	14.42	13.04	**15.51**	17.76	13.737
Returns											
Return on Common Equit	13.01	10.75	19.62	12.26	19.36	8.4	20.85	21.98	**39.47**	28.98	19.468
Return on Assets	2.53	2.71	5.05	2.68	4.38	1.84	3.17	2.84	**6.4**	5.96	3.756
Dvd Payout Ratio	21.72	25.62	33.54	65.02	32.52	109.18	80.25	91.37	**36.43**	47.24	54.289

APPENDIX 2: INCOME STATEMENT

Measures	2014A	2015A	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Adj. Total Sale	#########	###	**$ 19,495.00**	**$ 21,743.00**	**$ 23,306.00**	**$ 22,045.53**	**$ 22,145.09**	**$ 22,455.12**	**$ 22,769.49**	**$ 23,088.27**	**$ 23,411.50**	**$ 23,739.26**
Cost of Good Sold			$ 13,419.00	$ 14,802.00	$ 15,555.00	$ 15,469.33	$ 15,222.62	$ 15,435.73	$ 15,651.83	$ 15,870.96	$ 16,093.15	$ 16,318.46
Margin Profit			**$ 6,076.00**	**$ 6,941.00**	**$ 7,751.00**	**$ 6,576.19**	**$ 6,922.47**	**$ 7,019.39**	**$ 7,117.66**	**$ 7,217.31**	**$ 7,318.35**	**$ 7,420.81**
Gross Margin			*31.17%*	*31.92%*	*33.26%*	*31.26%*	*31.26%*	*31.26%*	*31.26%*	*31.26%*	*31.26%*	*31.26%*
SG & A			$ 1,458.00	$ 1,621.00	$ 1,723.00	~~$ 1,648.00~~	$ 1,646.31	$ 1,669.36	$ 1,692.73	$ 1,716.43	$ 1,740.46	$ 1,764.82
SG & A as % of Total revenue			*7.48%*	*7.46%*	*7.39%*	~~*7.48%*~~	*7.43%*	7.43%	7.43%	7.43%	7.43%	7.43%
D & A			$ 1,124.00	$ 1,343.00	$ 1,328.00	~~$ 1,310.00~~	$ 1,310.00	$ 1,310.00	$ 1,310.00	$ 1,310.00	$ 1,310.00	$ 1,310.00
D & A as % of PP&E				*10.12%*	*10.16%*	~~*10.20%*~~	*10.20%*	10.20%	10.20%	10.20%	10.20%	10.20%
Distribution expense			$ 1,237.00	$ 1,434.00	$ 1,567.00	~~$ 1,567.00~~	$ 1,574.08	$ 1,596.11	$ 1,618.46	$ 1,641.12	$ 1,664.09	$ 1,687.39
Distribution expense as % of Revenue			*6.35%*	*6.60%*	*6.72%*	~~*7.11%*~~	*7.11%*	7.11%	7.11%	7.11%	7.11%	7.11%
Taxes other than payroll and income taxes			$ 154.00	$ 169.00	$ 171.00	~~$ 204.00~~	$ 187.50	$ 187.50	$ 187.50	$ 187.50	$ 187.50	$ 187.50
Restructuring and other charges, net			$ 54.00	$ 67.00	$ 29.00	~~$ 21.00~~	$ 21.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00	$ 21.00
Net (gains) losses on sales and impairments of businesses			$ 70.00	$ 9.00	$ 122.00	~~$ 153.00~~	$ 122.00	$ 153.00	$ 122.00	$ 153.00	$ 122.00	$ 153.00
Ligitgation settlement				$ 354.00		~~$ 32.00~~						
Less: Operating Cost			**$ 4,097.00**	**$ 4,643.00**	**$ 4,940.00**	**$ 4,903.00**	**$ 4,860.89**	**$ 4,936.97**	**$ 4,951.69**	**$ 5,029.04**	**$ 5,045.05**	**$ 5,123.71**
Operating Income			**$ 1,979.00**	**$ 1,944.00**	**$ 2,811.00**	**$ 2,344.10**	**$ 2,061.59**	**$ 2,082.42**	**$ 2,165.97**	**$ 2,188.26**	**$ 2,273.30**	**$ 2,297.09**
Tax			$ 193.00	$ (1,085.00)	$ 445.00	$ 586.02	$ 515.40	$ 520.60	$ 541.49	$ 547.07	$ 568.32	$ 574.27
EBIT(1-T)			**$ 1,786.00**	**$ 3,029.00**	**$ 2,366.00**	**$ 1,758.07**	**$ 1,546.19**	**$ 1,561.81**	**$ 1,624.48**	**$ 1,641.20**	**$ 1,704.97**	**$ 1,722.82**

APPENDIX 3: INTRINSIC VALUATION

Measures	2014A	2015A	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Operating Income			**$ 1,979.00**	**$ 1,944.00**	**$ 2,811.00**	**$ 2,344.10**	**$ 2,061.59**	**$ 2,082.42**	**$ 2,165.97**	**$ 2,188.26**	**$ 2,273.30**	**$ 2,297.09**
Tax			$ 193.00	$ (1,085.00)	$ 445.00	$ 586.02	$ 515.40	$ 520.60	$ 541.49	$ 547.07	$ 568.32	$ 574.27
EBIT(1-T)			**$ 1,786.00**	**$ 3,029.00**	**$ 2,366.00**	**$ 1,758.07**	**$ 1,546.19**	**$ 1,561.81**	**$ 1,624.48**	**$ 1,641.20**	**$ 1,704.97**	**$ 1,722.82**
CapEx			$ 1,241.00	$ 1,280.00	$ 1,572.00	$ 1,300.00	$ 1,300.00	$ 1,300.00	$ 1,300.00	$ 1,300.00	$ 1,300.00	$ 1,300.00
Depr.			$ 1,124.00	$ 1,343.00	$ 1,328.00	$ 1,310.00	$ 1,310.00	$ 1,310.00	$ 1,310.00	$ 1,310.00	$ 1,310.00	$ 1,310.00
Change in Working Capital			$ (61.79)	$ (51.93)	$ 207.00	$ (218.23)	$ 14.58	$ 44.03	$ 44.65	$ 45.28	$ 45.91	$ 46.55
FCFF			$ 1,730.79	$ 3,143.93	$ 1,915.00	$ 1,986.30	$ 1,541.61	$ 1,527.78	$ 1,589.83	$ 1,605.92	$ 1,669.06	$ 1,686.27
Terminal Value												$ 29,745.52
FCFF + TV							**$ 1,541.61**	**$ 1,527.78**	**$ 1,589.83**	**$ 1,605.92**	**$ 1,669.06**	**$ 31,431.79**

WACC	7.78%
EV @ 12/31/2019	$28,258.25
Total Debt	$10,787
Cash	697
Shares Outstanding	395
Equity Value/share @ 12/31/2019	45.9955692
EV @ Today	28082.3754
Equity Value/share@today	45.5503175

APPENDIX 4: COMPARABLE VALUATION

Industry average EV/EBITDA		7.985
EBITDA in FY21	$	3,392.42
EV	$	27,088.44
Add Cash		697
Less Debt		$10,787
SharesOutstanding		395
Price		**43.03403779**

IP historical EBITDA(LTM)		7.62
EBITDA in FY21	$	3,392.42
EV	$	25,850.21
Add Cash		697
Less Debt		10787
SharesOutstanding		395
Price		**39.89927327**

IP historical P/S(LTM)	1.2
Sales in FY21	22391.47
EV	26869.764
Add Cash	697
Less Debt	10787
SharesOutstanding	395
Price	**42.48041519**

Price/Sales		42.48041519
historical average EBITDA mutiple		39.89927327
industry average EBITDA mutiple		43.03403779
Average	**$**	**41.80**

APPENDIX 5: RELATIVE VALUATION

	Price	Weight
Price Target by Comps	$ 41.80	50%
Price Target by FCFF	$ 45.55	50%
Price/Share		$ 43.68