NUS INVESTMENT SOCIETY

Tenneco

BUY: US$24.54 (+17.3%)

Equity Research Department | **24 April 2019**

Analysts

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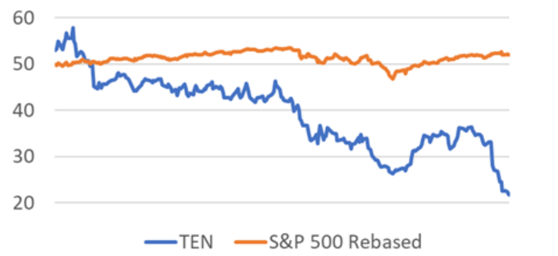
Basic Information

Last Closed Price	US$24.54
12M Target Price	US$31.71
+/- Potential	+44.2%
Bloomberg Ticker	TEN US Equity
GICS Sector	Consumer Discretionary
GICS Sub-Industry	Automotive

1Y Price v Relative Index



Company Description

Tenneco engages in the manufacturing and distribution of powertrain and ride performance products and systems for light vehicle, commercial truck and off-highway applications. It also manufactures and markets automotive aftermarket products. It operates through the following geographical segments: North America, Europe and China.

Key Financials

Market Cap	1.775B
Basic Shares O/S	80.7M
Free Float	98.9%
52-Wk High-Low	US$21.55 - US60.20
Fiscal Year End	31-Dec-18

(US$ M)	FY17A	FY18A	FY19E	FY20E
Revenue	9274	11763	18891	20593
Gr Rate (%)	7.3	21.2	60%	9%
EBITDA	641	651	1256	1327
Margin (%)	6.9	5.5	6.6	6.4
Net Income	207	55	274	299
Margin (%)	2.2	0.5	1.5	1.5
ROA	4.5	0.6	2	2
ROE	32.6	4.5	15.5	16.8

Tenneco's new drive

We are initiating coverage of Tenneco with a Buy rating and a $31.71 12M price target.

4Q18 Earnings Review

- Total revenue up 79% yoy and cost of sales up 83%, driven mainly by completion of Federal-Mogul acquisition
- EBIT decreased by 123% yoy and EBITDA decreased by 31% yoy due to primarily due to restructuring expenses and costs associated with the acquisition and expected spin
- Adjusted EBIT was up by 44% yoy after removing non-recurring costs such as acquisition, synergies cost and purchase accounting adjustments
- Management guide full year 2019 revenues to be US$18.3b, implying an annual growth of +54%, with gross margins to remain flat

Investment Thesis

- Combined powertrain technology division increases efficiency and lowers total system cost from positive synergy, creating one of the largest pure powertrain suppliers with engine to tailpipe solutions that addresses both greenhouse gas and criteria pollutant emissions. Strategic position to meet higher demand of aftermarket products of hybrid electric vehicles due to rising pollutant criteria.
- Outstanding positioning of original equipment and aftermarket powerhouse division after merger to capture Asia Pacific aftermarket growth with a broad range of products, coupled with extensive economies of scale of its broad portfolio of products.
- Increasingly number of older cars coupled with slowdown of US car sales would signify an increase in repair and automotive components replacement, driving Tenneco's sales.

Catalysts

- Strong earnings synergies from acquisition is to be anticipated during Q3 earnings release
- Separation of DRiV from Tenneco to two publicly traded companies in 2H19 would increase publicity of Tenneco and its upcoming earnings and cost synergies

Valuations

- Our 12M price target from date of coverage is $31.71, derived via a blended DCF and forward P/E valuation approach. We also used a slightly more conservative growth rate of 0%.

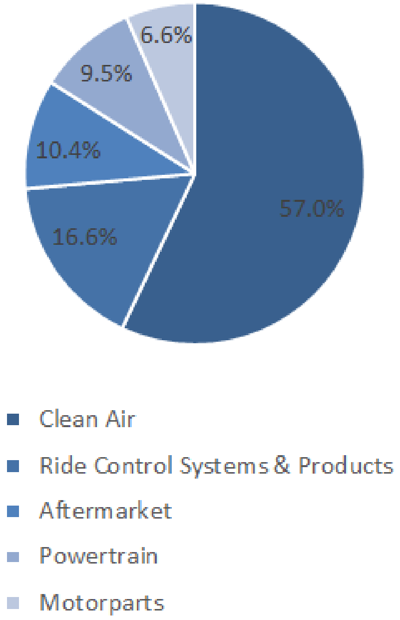
Investment Risks

- Unprecedented rise of electric vehicles would lower demand of Tenneco's hybrid and internal combustion emission-control products
- Fluctuations of commodity and raw material pricing could cause a spike in cost of production
- Slow materialization of synergies hinders Tenneco's leading position in aftermarket and clean air segments

EV/EBITDA	6.5	11.05	5.11	4.83
P/E Ratio	14.9	15.1	6.5	5.9
D/E Ratio	2.1	3.2	3.1	3.1

Key Executives	
Brian J. Kesseler	Co-CEO & Director
Roger J. Wood	Co-CEO & Director
Jason M. Hollar	CFO & Executive VP

Figure 1: Revenue by Products, FY18

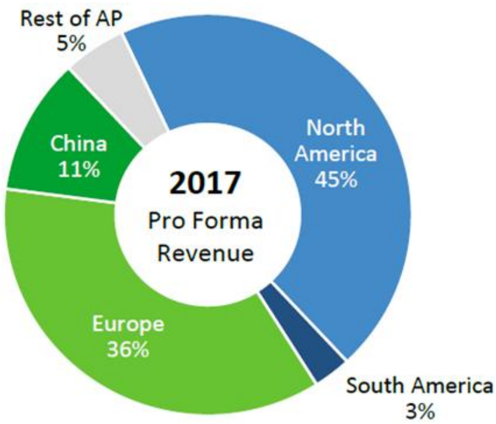


Source: Tenneco Annual Report 2018

Figure 2: Tenneco's acquisition of Federal-Mogul

Source: Tenneco

Figure 3: Pro Forma Revenue by Geography, FY17



Source: Tenneco Quarter 4 2018 Presentation

Figure 5: Combined Tenneco's top customers

Company Overview

Tenneco Inc. ("Tenneco" or "the Company") is one of the world's leading manufacturers of powertrain and ride performance products and systems for light vehicles, commercial trucks and off-highway applications. The company also engineers, manufactures, markets and distributes leading brand name products to a diversified and global aftermarket customer base.

Tenneco has a diversified business profile after acquiring Federal-Mogul in October 2018. It manufactures emission control and ride control products and systems for the automotive components original equipment and the aftermarket. Products range from cylinder to tailpipe, such as catalytic converters, gasoline particulate filters to valves. Also, it has product offerings which are "around the wheel", which includes dampers, brake pads, brake motors. Tenneco distributes its products globally, mainly to North America, Europe and China.

Tenneco has two focused divisions: a powertrain and clean air technology division, and aftermarket and ride performance division. The latter would be spin off in the second half of 2019 into a new company as DRiV, with the former remaining as Tenneco.

4Q18 Earnings Review

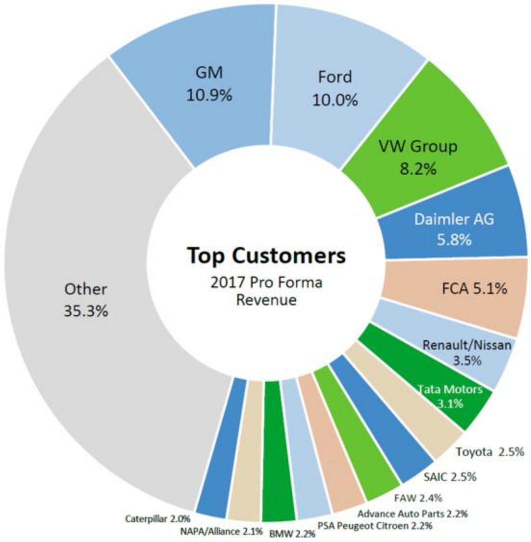
- Total revenue up 79% yoy and cost of sales up 83%, driven mainly by completion of Federal-Mogul acquisition
- Gross profit margins decreased by 180bps, from 15.4% to 13.6%
- SG&A spiked by 189% yoy
- EBIT decreased by 123% yoy from US$135m to US$-31m while EBITDA decreased by 31% yoy from US$134m to US$194m due to primarily due to restructuring expenses and costs associated with the acquisition and expected spin
- Adjusted EBIT was up by 44% yoy after removing non-recurring costs such as acquisition, synergies cost and purchase accounting adjustments
- Management guide full year 2019 revenues to be US$18.3b, implying an annual growth of +54%, with gross margins to remain flat

Industry Outlook

Vehicle Unit Sales Set to Continue to Grow

According to a report by McKinsey, overall global car sales will continue to grow, but the annual growth rate is expected to drop from the 3.6 percent of the last five years to ~2 percent annually by 2030. This drop will be largely driven by macroeconomic factors and the rise of new mobility services such as car sharing and e-hailing.

A detailed analysis suggests that dense areas with a large, established vehicle base are fertile ground for these new mobility services, and many cities and suburbs of Europe and North America fit this profile. New mobility services may result in a decline of private vehicle sales, but this decline is likely to be partially offset by increased sales in shared vehicles that need to be replaced more often due to higher utilization and related wear and tear.

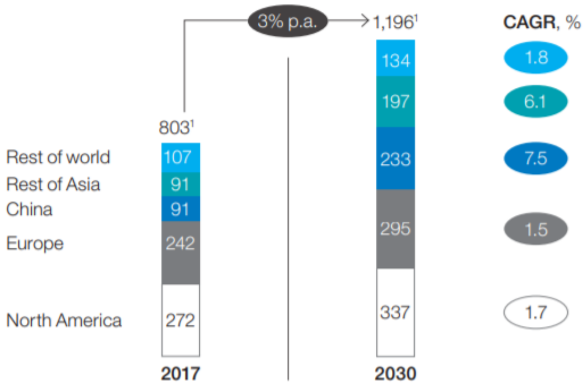


Source: Tenneco Quarter 4 2018 Presentation

Figure 6: Porter's 5 Forces

Source: NUS Investment Society Estimates

Figure 6: Global Aftermarket Value 2017-2030



Source: McKinsey

Figure 7: Growth of Chinese Automotive aftermarket till 2030

The remaining driver of growth in global car sales is the overall positive macroeconomic development, including the rise of the global consumer middle class. As established markets are no longer expanding, growth will continue to rely on emerging economies, particularly China and India.

Tightening Fuel Economy and Criteria Pollutant Regulations
Generally, companies are facing strict environmental and pollutant restrictions. Hence, automobile manufacturers will be inclined to source for auto parts dealers who are able to solve their emissions conundrum as a result of fuel efficiency regulations raising fuel-economy standards. Sourcing for auto parts dealers who can provide them with clean air and ride performance innovation that meet current and future legislative requirements, in addition to components being ready for production anywhere in the world.

Thus, the demand for improved engine performance will mean that auto parts dealers will be tweaking and adding into their product portfolio solutions to meet the auto manufacturers changing preference of products - those that reduce emissions and improve fuel efficiency and vehicle performance.

Distance Travelled to Propel Aftermarket Growth
McKinsey estimates the aftermarket value in 2017 to be approximately EUR 800 billion. Business in North America accounted for approximately 270 billion of global revenue, Europe was second at approximately EUR 240 billion, and business in China generated approximately EUR 90 billion. The overall automotive aftermarket has an expected CAGR of 3% and will reach approximately EUR 1,200 billion by 2030.

In mature markets, growth in the aftermarket was only in the 1 to 2 percent range over the last decade. This modest growth is expected to continue, leading to revenue of approximately EUR 340 billion in North America and approximately EUR 300 billion in Europe in 2030. As the average car age increases in these consolidated markets as well, aftermarket players here will also need to address the needs of the older vehicles.

Emerging markets will see growth rates that exceed those of developed markets. It is the skyrocketing rate of car ownership, as well as the increasing age of the average vehicle, that will increase Asia's share of the global automotive aftermarket to more than a third (EUR 430 billion) as early as 2030.

Garages and service station segment is anticipated to be the largest contributors to the growth. This includes company authorized service stations and workshops which holds a prominent distribution right from companies for distribution of their products. These service stations provide a series of maintenance procedures, which are carried out when a vehicle has travelled a certain distance. The increasing necessity for engine tuning, replacement of air filters, spark plugs, fuel filter, engine oils, car washing, and lubricating & greasing are autoparts that will drive this segment's growth.

Investment Thesis

Combined Powertrain Technology Division Puts Tenneco In A Unique Position
Tenneco's transformational acquisition of Federal-Mogul and restructuring puts its powertrain technology division in a strong position to build out its product portfolio in an ever changing powertrain market. Tenneco is a leading supplier of clean air products and systems while Federal-Mogul is one of the world's leading powertrain component and assembly providers. Through his

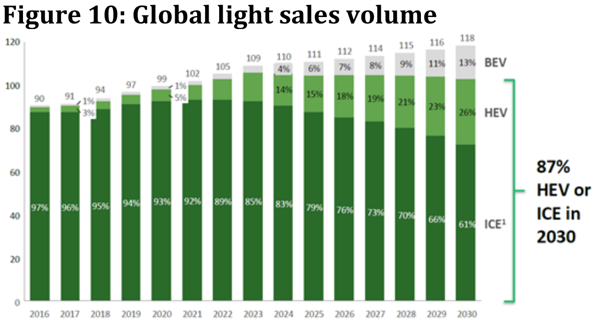
Source: McKinsey

Figure 8: Tenneco's Brands

	Products	Position
MONROE	• Shocks and struts • Suspension systems	#1 Globally
MOOG	• Steering, hubs • Driveline	#1 North America #3 EMEA
WAGNER	• Brake pads, shoes, linings • Rotors and drums	#1 North America
FEL-PRO	• Gaskets • Seals	#1 Globally
CHAMPION	• Underhood service • Ignition	#3 Globally
FERODO JURID	• Brake pads, shoes, linings	#2 EMEA
WALKER	• Emission control products	#1 NA & EMEA
AXIOS Fric-Rot	• Suspension links, bushings, mounts, exhaust isolators • Shocks and struts	#1 South America

Source: Tenneco Investor Presentation

Figure 10: Global light sales volume



Source: BCG estimates, Tenneco

Figure 11: Tenneco's $200m earning synergies

acquisition, Tenneco was able to create one of the largest pure powertrain suppliers with engine to tailpipe solutions, addressing both greenhouse gas and criteria pollutant emissions.

Tenneco's Legacy Clean Air Segment controls criteria pollutant emissions by managing conversion efficiency, thermal management and precious metal loading. On the other hand, Federal-Mogul's Powertrain Segment controls greenhouse gas emissions and fuel efficiency by managing friction, performance, combustion temperature and ignition timing. The combination of both these segments into the Powertrain Technology division provides them with full systems emission control, with system capabilities enable better powertrain efficiency at a lower total system cost, setting them apart from the rest of their competitors.

This puts them in a unique position to capitalise on the shift towards Hybrid Electric Vehicles (HEV) and internal combustion engines (ICE) vehicles that meet current and future legislative requirements. Based on BCG estimates, 87% of light vehicle sales in 2030 are hybrid electric vehicles (HEV) and internal combustion engines (ICE) vehicles, driven by growth of HEV due to tighter emission regulation. In fact, Hybrids and plug-in electric vehicles are expected to contribute to 15% of new-vehicle sales by the mid-2020s.

While electrification has captured the headlines, the reality is that hybridization of the fleet represents a far larger percentage of the electrified vehicles expected to be produced over the next decade than full battery electric vehicles. Compared to ICE, HEV are more complex and require higher content per vehicle in both cylinder and aftertreatment systems.

With strong synergy from both powertrain and clean air technology, Tenneco's new powertrain division is well positioned to capture the growing demand for powertrain products that reduces criteria pollutants. Furthermore, Tenneco's powertrain technology components are able to meet the required complexities of these newer HEV components, allowing them to ride on this wave of HEV growth.

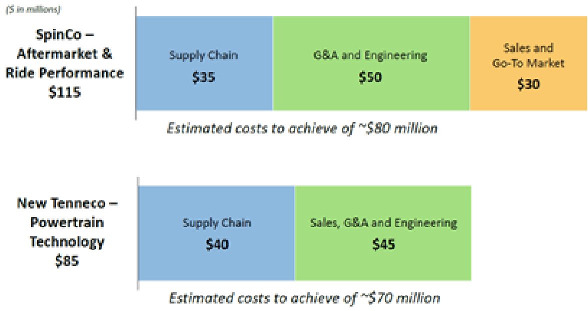
Aftermarket & Ride Performance Powerhouse

The combination of Tenneco's legacy Ride Performance Segment and Federal Mogul's Motorparts Segment creates a global powerhouse best positioned to benefit from the underlying trends in the industry.

Tenneco's new Aftermarket & Ride Performance Segment is one of the largest global multi-line, multi-brand aftermarket and original equipment suppliers, with brands such as Monroe, Fel-Pro, Walker and many more, who are all well established brands in their respective product segment. Tenneco's new Aftermarket Segment would rank amongst the top 5 aftermarket manufacturers suppliers globally, in terms of pro-forma 2017 revenues.

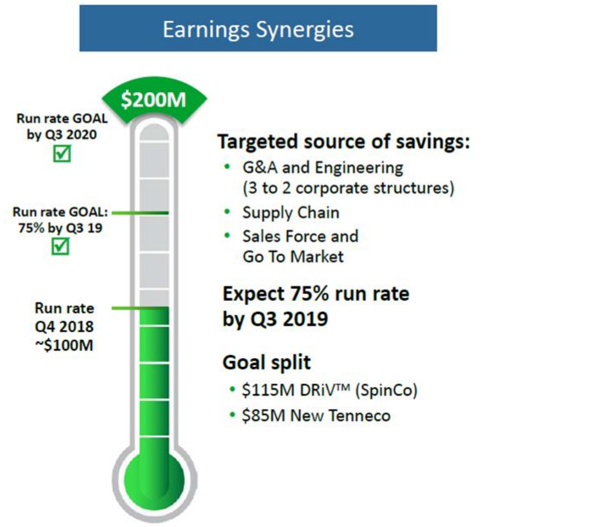
This would provide them with extensive economies of scale. with their broad product portfolio enabling differentiated customer and channel support while rationalising distribution networks for improved service and lower costs. Furthermore, due to the highly complementary nature of the goods manufactured by the companies, the combined company will be able to create cross-category sales incentives with retailers and warehouse distributors, potentially increasing revenue. This combination would also provide them with the scale to support new investments in digital and China, focusing on aftermarket branding and marketing capabilities.

In addition, their broad range of products with superior branding power puts them in an outstanding strategic position to capture the aftermarket growth in all markets, especially in Asia Pacific region. Tenneco's combined strong "house of brands", coupled with



Source: Tenneco Quarterly Presentation

Figure 12: Tenneco's earning synergies run rate



Source: Tenneco Quarterly Presentation

investments in salesforce & distribution and product line & coverage are expected to help the company capture the growth in China.

Slowdown in New Car Sales in US A Boon for Tenneco

Auto-parts manufacturers have some tailwinds that will help sustain top-line growth. The United States has an ageing automobile fleet (aged more than 7 years) that is the oldest and largest in history which is expected to support top line growth of the $287 billion passenger-vehicle aftermarket auto-parts industry as consumers decide whether to repair or replace auto parts. In addition, new-vehicle volume above 17 million every year since 2015 indicates that millions of automobiles will start to come off warranty. Furthermore, sale of new vehicles has already peaked in 2016 and automakers are losing some of the steam that kept consumers focused on new-vehicle deals, with a slowdown expected in 2019. Slowdown in sales volume is expected to be amplified by tariffs which is expected to drive input costs which is expected to lead the slowdown in new sales volume. The increase in average age is in line with the trend shift first seen in 2013, in which the combined fleet of cars and light trucks on the road is older than ever. This is likely to boost the automotive aftermarket, as older vehicles tend to have higher likelihood of their components being repaired or replaced.

Increased necessity for travelling along with improved standard of living (growth in tourism sector) will result in an increased average distance driven per vehicle which will further promulgate the automotive aftermarket expansion due to the rising need for repairs and replacement of auto parts.

With broad range of products with superior branding power, Tenneco is best positioned to reap the benefits of these increasingly favorable car parc demographics, potentially boosting Tenneco's Aftermarket Segment's top line growth.

Catalysts

- Earnings synergies from Federal-Mogul acquisition is targeted to hit US$200m in Q3 2020, with a run rate goal of 75% by Q3 2019. With run rate of 50% in Q4 2018, it is expected for positive earnings synergy results to be released in September 2019 during Q3 earnings release.
- Separation of DRiV aftermarket & performance company to another publicly traded company is expected to occur in 2H of 2019. It would generate more publicity of Tenneco and its earnings and cost synergies.

Financial Analysis

Financial Ratios	Historicals			Forecast Period				
	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E
Profitability								
Net Profit Margin	4.9%	2.9%	0.9%	1.5%	1.5%	1.4%	1.6%	1.7%
Return on Asset	9.8%	5.5%	0.8%	2.0%	2.0%	2.0%	2.3%	2.4%
Return on Equity	23.9%	14.9%	6.3%	15.5%	16.8%	18.1%	22.6%	26.2%
Liquidity								
Current Ratio	1.32	1.21	1.41	1.36	1.26	1.25	1.08	0.88
Cash Ratio	0.18	0.14	0.16	0.23	0.17	0.18	0.13	0.11
Asset Utilization								
Total Asset Turnover	1.98	1.93	0.89	1.35	1.37	1.38	1.39	1.40
Inventory Turnover	9.76	9.53	4.49	6.12	6.11	5.61	5.85	5.85
Receivables Turnover	0.16	0.17	0.13	0.17	0.17	0.16	0.17	0.16
Financial leverage								
LT Debt to Asset	29.8%	28.3%	40.4%	38.0%	35.4%	32.6%	27.4%	16.5%
LT Debt to Equity	72.9%	76.5%	300.9%	300.9%	300.9%	300.9%	272.6%	177.3%
Debt to Asset	31.8%	30.5%	41.5%	38.0%	35.4%	32.6%	27.4%	23.7%
Debt to Equity	78.0%	82.3%	309.5%	300.9%	300.9%	300.9%	272.6%	255.4%
Interest Coverage	5.61	5.67	2.32	2.39	2.57	2.72	3.23	3.84
Debt Service Coverage	0.83	0.06	0.05	2.39	2.57	2.72	1.08	0.46
Market Value								
Price to Earnings	4.19	6.70	15.99	6.47	5.94	5.53	4.42	3.81
EV/EBITDA	8.81	10.11	9.85	5.11	4.83	4.51	4.06	3.75

DuPont Analysis	Historicals			Forecast Period				
	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E
Tax Burden								
Earnings before taxes - US$ M	424	336	174	386	421	452	565	655
Net Income - US$ M	424	265	111	274	299	321	401	465
Tax Burden Ratio	**100%**	**79%**	**64%**	**71%**	**71%**	**71%**	**71%**	**71%**
Interest Burden								
Earnings before taxes	424	336	174	386	421	452	565	655
EBIT	516	408	306	664	689	714	819	885
Interest Burden Ratio	**82%**	**82%**	**57%**	**58%**	**61%**	**63%**	**69%**	**74%**
Profitability								
EBIT	516	408	306	664	689	714	819	885
Revenue	8,209	8,599	9,274	11,763	18,891	20,594	22,634	24,600
Operating Profit Margin	**6.3%**	**4.7%**	**3.3%**	**5.6%**	**3.6%**	**3.5%**	**3.6%**	**3.6%**
Asset Turnovers								
Revenue	8,209	8,599	9,274	11,763	18,891	20,594	22,634	24,600
Total Assets	4,346	4,796	13,232	14,044	15,081	16,377	17,656	19,105
Asset Turnover Ratio	**1.89**	**1.79**	**0.70**	**0.84**	**1.25**	**1.26**	**1.28**	**1.29**
Financial Leverage								
Total Assets	4,346	4,796	13,232	14,044	15,081	16,377	17,656	19,105
Total Equity	3,495	3,091	2,189	2,559	2,559	2,559	2,559	2,559
Asset/Equity Ratio	**1.24**	**1.55**	**6.04**	**5.49**	**5.89**	**6.40**	**6.90**	**7.47**
ROE	**12.1%**	**8.6%**	**5.1%**	**10.7%**	**11.7%**	**12.5%**	**15.7%**	**18.2%**

Overview:
The financial condition chart above indicates our expectations for TEN 5 years forward, which highlights our assumptions (refer to appendix for more details), with specific attention paid to debt repayments and operational efficiencies. With the Federal-Mogul acquisition completed by TEN over the past year, the impact on its balance sheet and income statements are expected to be material and thus included in our projections.

Asset Turnover
Over the past year company completed the acquisition of Federal-Mogul increasing the total assets to more than two-fold while expecting to create synergies to increase efficiency and asset turnover for the upcoming 5 years.

Interest Burden
The long term debt is relatively cheaply priced as the main use of fund were the acquisition of the competitor Federal-Mogul which had a strong asset base leading to a relatively low interest burden compared to amount of leverage company employs.

Tax Burden
Tax burden has been stable and tax rate is expected to be around 30% for next few years.

Leverage
TEN operates in a very capital-intensive industry and it recently acquired a large competitor leading to a high D/E ratio, yet it is not likely that there will be further increases on leverage as the company is likely to cut costs as the integration of the acquired is completed.

Valuations

Valuation Price Target: **$31.71**

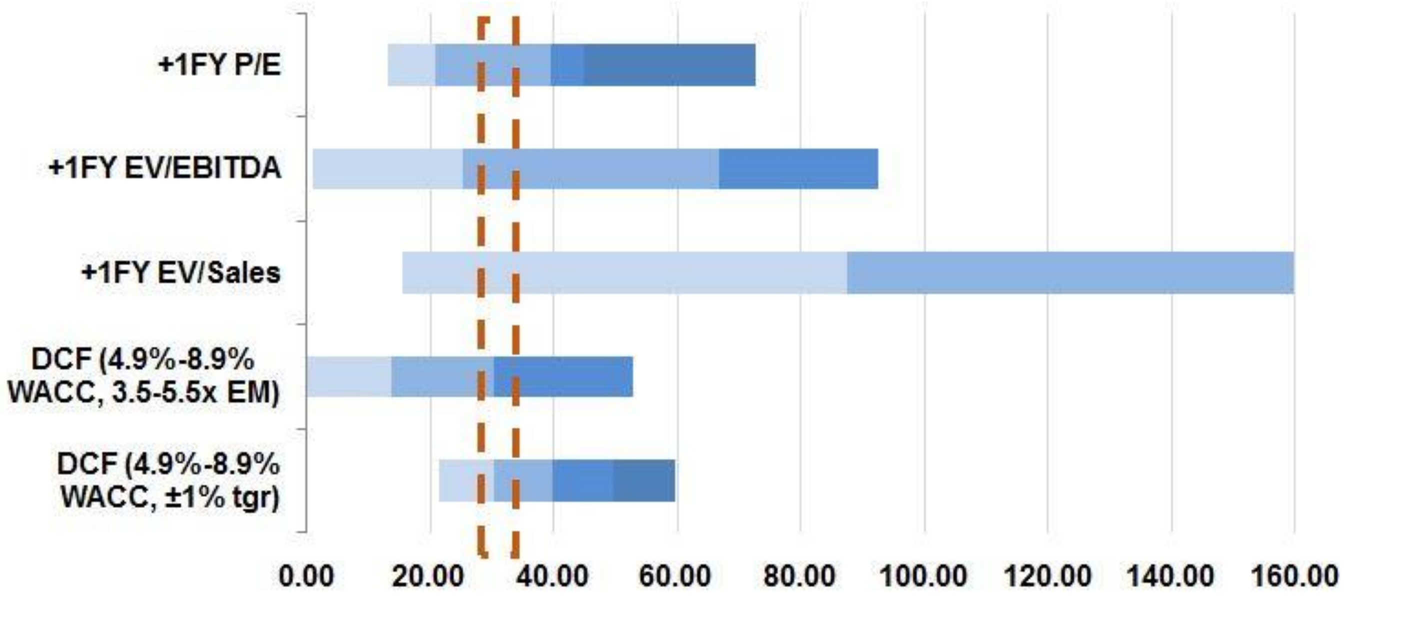


Figure 11. WACC Buildup

Cost of Equity	**9.16%**
Risk-free rate	2.6%
Beta	1.1
Market Risk Premium	6.0%
Cost of Debt	**3.73%**
Pre-tax cost of debt	5.25%
Tax rate	29%
Equity	58.40%
Total Debt	41.60%
WACC	**6.9%**

Source: Bloomberg, Damodaran, NUS Investment Society Estimates

Figure 12. Sensitivity Tables

Terminal Growth Rate	WACC 4.9%	5.9%	6.9%	7.9%	8.9%
-1.0%	50.22	30.95	16.72	5.81	-2.78
-0.5%	60.19	37.86	21.73	9.58	0.13
0.0%	72.21	45.94	**27.47**	13.82	3.37
0.5%	86.95	55.52	34.11	18.64	6.99
1.0%	105.48	67.06	41.87	24.16	11.07

Exit Multiple	WACC 5.9%	6.4%	6.9%	7.4%	7.9%
3.0x	26.58	25.24	23.93	22.65	21.40
3.5x	34.86	33.36	31.89	30.46	29.05
4.0x	43.15	41.48	**39.85**	38.26	36.70
4.5x	51.44	49.60	47.81	46.06	44.35
5.0x	59.72	57.72	55.77	53.87	52.00

Source: NUS Investment Society Estimates

Figure 13. Risk Matrix

Impact				
	3			
	2	S3	E1	
	1		C2	
		1	2	3
		Probability		

Source: NUS Investment Society Estimates

DCF Model

A discounted cash flow analysis was used to estimate intrinsic value of TEN's share price due to concerns with its cash flow generation capabilities. The primary model is forecasted over 5 years. The model is driven by total assets and asset turnover ratio segmented into North America, Europe-SA-India and Asia Pacific regions on the revenue side. On the cost front, working capital, COGS, depreciation of assets and SG&A serve as crucial parameters for projections due to TEN's nature as an expanding auto parts producer. The DCF is most sensitive to the following factors, derivation of which are explained below.

Weighted Average Cost of Capital (WACC)

To calculate Beta, linear regression of TEN's stock price were run against the S&P 500 for time frame of 24 months on a weekly basis and then averaged and adjusted. CAPM was used to estimate Cost of Equity, while the interest rate on recently issued bonds were used as Cost of Debt in a weighted average manner. Tax shield was taken into account as TEN pays income taxes for all operations.

Revenue Growth

Revenue growth for TEN is based primarily on increasing assets in the 4 segments: North America, Europe-India and Asia Pacific regions along with newly integrated Federal-Mogul unit. We estimate a 4 year CAGR of 7.2% after the first full year of consolidated reporting with Federal-Mogul.

Terminal Growth

As the industry becomes increasingly competitive and more markets hitting saturation point, TEN's growth rate will definitely slow down. This rate will reach a terminal growth rate equal to 0%, accounted for in the 5 year DCF model.

Relative Valuation

Using P/E, EV/EBITDA and EV/Sales, TEN is underpriced relative to core peer group consisting of North American Auto part manufacturers. Using comparables as sanity checks, TEN's high growth prospects is significantly undervalued compared to peers.

Relative Valuation was primarily focused on P/E multiple. A blended target price is calculated using equal weightings of P/E and DCF with perpetuity growth rate of 0%.

This analysis leads to an intrinsic value of $31.71 for TEN, a 44.2% premium to the current trading price. We remain confident that this valuation reaffirm our BUY recommendation and validates our view of upcoming 12 month period.

Investment Risks

Rise of Electric Vehicles

E1: Electric vehicles could be dominant sooner than expected, causing a dip in demand of aftermarket products for hybrid electric and internal combustion engine vehicles and therefore depressing sales of Tenneco's emission-related products.

Fluctuations of commodity prices

C2: As a automotive components manufacturer, Tenneco's cost of production is dependant on cost of raw materials. Hence, an unexpected rise in raw materials and commodities could affect Tenneco's profits greatly.

Slow materialization of synergies

S3: As synergy of Tenneco's new businesses would provide a huge cost savings with better capabilities and efficiencies, a possible slow or poor integration could threaten Tenneco's lead against its competitors.

Disclaimer

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Appendix:

Third Party Research Findings

Pro Forma Financial Statements

(USD M unless otherwise stated)	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E
Income Statement								
Net sales	8,599	9,274	11,763	18,891	20,594	22,634	24,600	26,757
Cost of sales, exclusive of depreciation and amortization	7,123	7,812	10,071	15,977	17,453	19,222	20,859	22,694
Gross profit	1,476	1,462	1,692	2,914	3,140	3,412	3,741	4,063
SG&A	589	638	794	1,290	1,404	1,539	1,676	1,822
Depreciation - Amortization	212	226	345	592	637	706	759	823
R&D	154	158	204	329	356	392	427	464
Impairment	-	11	3	-	-	-	-	-
Other operating expense, net	5	21	40	39	53	61	60	69
Operating income	516	408	306	664	689	714	819	885
Interest expense, net	92	72	132	283	293	306	319	313
Income (loss) before taxes	424	336	174	381	396	408	500	572
Income tax expense (benefit)	-	71	63	111	115	118	145	166
Net income	424	265	111	271	281	290	355	406
Less: Net income attributable to noncontrolling interests	68	67	56	56	56	56	56	56
Net income attributable to Tenneco	356	198	55	215	225	234	299	350
Net income per share (USD) attributable to Tenneco:								
Basic	6.36	3.75	0.94	2.66	2.79	2.90	3.70	4.34
Diluted	6.31	3.74	0.94	2.66	2.79	2.90	3.70	4.34
Weighted-average shares outstanding:								
Basic	56	53	59	81	81	81	81	81
Diluted	56	53	59	81	81	81	81	81
EBITDA	728	634	651	1,256	1,327	1,421	1,578	1,708
EBIT	516	408	306	664	689	714	819	885

(USD '000 unless otherwise stated)	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E
Balance Sheet								
Assets:								
Cash and equivalents	349	318	702	-	3,739	4,325	4,590	4,989
Receivables	1,294	1,321	2,572	3,449	2,856	3,429	3,565	3,880
Inventories	730	820	2,245	2,609	825	961	1,011	1,102
Other current assets	229	288	590	746				
Total current assets	**2,602**	**2,747**	**6,109**	**6,804**	**7,420**	**8,714**	**9,166**	**9,970**
Property and equipment, net	1,357	1,691	3,501	3,618	4,039	4,041	4,868	5,513
Other assets	387	358	3,622	3,622	3,622	3,622	3,622	3,622
Total non-current assets	**1,744**	**2,049**	**7,123**	**7,240**	**7,661**	**7,663**	**8,490**	**9,135**
Total assets	**4,346**	**4,796**	**13,232**	**14,044**	**15,081**	**16,377**	**17,656**	**19,105**
Liabilities:								
Short-term borrowings	90	103	153	-	-	-	-	1,385
Accounts payable	1,501	1,582	2,759	3,839	4,176	4,771	5,089	5,534
Accrued compensation & employee benefits	43	141	343	343	343	343	343	343
Accrued income taxes	39	27	64	64	64	64	64	64
Accrued expenses & other liabilities	300	424	1,001	748	1,286	1,803	3,001	3,983
Total current liabilities	**1,973**	**2,277**	**4,320**	**4,994**	**5,869**	**6,981**	**8,498**	**11,309**
Long-term portion of debt	1,294	1,358	5,340	5,340	5,340	5,340	4,838	3,147
Deferred income taxes	7	11	88	88	88	88	88	88
Pension benefits	273	268	1,167	1,167	1,167	1,167	1,167	1,167
Deferred Credits & other liabilities	139	158	263	263	263	263	263	263
Total long-term liabilities	**1,713**	**1,795**	**6,858**	**6,858**	**6,858**	**6,858**	**6,356**	**4,665**
Total Liabilities	**3,686**	**4,072**	**11,178**	**11,852**	**12,727**	**13,839**	**14,854**	**15,974**
Equity:								
Redeemable non-controlling interest	40	42	138	138	138	138	138	138
Tenneco Inc. shareholders' equity	573	636	1,726	1,864	2,026	2,210	2,475	2,803
Total Tenneco Inc. stockholders' equity	**613**	**678**	**1,864**	**2,002**	**2,164**	**2,348**	**2,613**	**2,941**
Noncontrolling interests	47	46	190	190	190	190	190	190
Total stockholders' equity	660	724	2,054	2,192	2,354	2,538	2,803	3,131
Total liabilities and stockholders' equity	**4,346**	**4,796**	**13,232**	**14,044**	**15,081**	**16,377**	**17,656**	**19,105**
Balance Check (A=L+E)	YES	YES	YES	YES	YES	YES	YES	YES

(USD '000 unless otherwise stated)	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E
Cash Flow Statement								
Operating:								
Net income	**424**	**265**	**111**	**274**	**299**	**321**	**401**	**465**
Adjustments:								
Goodwill impairment charge	-	11	3	-	-	-	-	-
Depreciation and amortization of other intangibles	212	226	345	592	637	706	759	823
Deferred income taxes	(80)	(8)	(65)	-	-	-	-	-
Share-based compensation	14	14	14	-	-	-	-	-
Restructuring charges and asset impairments	-	8	49	-	-	-	-	-
Change in pension and postretirement benefit plans	-	(15)	(8)	-	-	-	-	-
Equity in earnings of nonconsolidated affiliates	-	1	(18)	-	-	-	-	-
Cash dividends received from nonconsolidated affiliates	-	-	2	-	-	-	-	-
Loss on sale of assets	4	5	16	-	-	-	-	-
Changes in assets and liabilities:								
Receivables	(215)	(81)	(190)	(877)	(290)	(586)	(265)	(399)
Inventories	(57)	(94)	27	(364)	(247)	(573)	(137)	(315)
Payables and accrued expenses	114	136	291	1,080	337	595	319	445
Accrued interest and income taxes	14	1	(19)	-	-	-	-	-
Other assets and liabilities	54	48	(119)	-	-	-	-	-
Net cash provided by operating activities	**484**	**517**	**439**	**705**	**737**	**463**	**1,077**	**1,019**
Investing:								
Acquisition		-	(2,194)	-	-	-	-	-
Proceeds from sale of assets	6	8	9	-	-	-	-	-
Proceeds from sale of equity interest	-	9	-	-	-	-	-	-
Cash payments for plant, property and equipment	(325)	(419)	(507)	(117)	(422)	(2)	(827)	(645)
Proceeds from deferred purchase price	-	112	174	-	-	-	-	-
Other	(21)	(10)	4	-	-	-	-	-
Net cash used for investing activities	**(340)**	**(300)**	**(2,514)**	**(117)**	**(422)**	**(2)**	**(827)**	**(645)**
Financing:								
Proceeds from term loans and notes	509	160	3,426	-	-	-	-	-
Repayments of term loans and notes	(531)	(36)	(453)	-	-	-	(502)	(1,691)
Borrowings on revolving lines of credit	202	6,664	5,149					
Payments on revolving lines of credit	-	(6,737)	(5,405)					
Issuance (repurchase) of common shares	13	(1)	(1)	-	-	-	-	-
Cash dividends	-	(53)	(59)	(81)	(81)	(81)	(81)	(81)
Debt issuance cost of long-term debt	(9)	(8)	(95)	-	-	-	-	-
Purchase of common stock under the share repurchase pro	(225)	(169)	-	-	-	-	-	-
Net increase (decrease) in bank overdraft	10	(7)	(5)	-	-	-	-	-
Other	-	-	(30)	-	-	-	-	-
Distributions to noncontrolling interest partners	(55)	(64)	(51)	(56)	(56)	(56)	(56)	(56)
Net cash used for financing activities	**(86)**	**(251)**	**2,476**	**(137)**	**(137)**	**(137)**	**(639)**	**(1,828)**
Effect of exchange rates on cash	2	5	(17)	-	-	-	-	-
Net increase (decrease) in cash and equivalents	58	(34)	401	452	178	325	(389)	(1,453)
Cash and equivalents, beginning of period	287	347	318	702	1,154	1,332	1,657	1,268
Cash and equivalents, end of period	**347**	**318**	**702**	**1,154**	**1,332**	**1,657**	**1,268**	**(185)**

Revenue

Sales by Segment:										
Revenue	US$ M	8,209.0	8,599.0	9,274.0	11,763	10,623	11,533	12,539	13,689	15,023
North America	US$ M	4,164.0	4,237.0	4,325.0	4,247.1	4,288.9	4,312.4	4,311.6	4,337.2	4,356.5
% of total	%	51%	49%	47%	43%	40%	37%	34%	32%	29%
% y/y	%		2%	2%	-2%	1%	1%	0%	1%	0%
Clean Air	US$ M	2,851.0	3,003.0	3,101.0	3,061.9	3,143.1	3,194.5	3,226.9	3,284.2	3,332.7
% of total	%	35%	35%	33%	31%	30%	28%	26%	24%	22%
% y/y	%		5%	3%	-1%	3%	2%	1%	2%	1%
Ride Performance	US$ M	1,313.0	1,234.0	1,224.0	1,185.2	1,145.8	1,117.9	1,084.6	1,053.0	1,023.8
% of total	%	16%	14%	13%	12%	11%	10%	9%	8%	7%
% y/y	%		-6%	-1%	-3%	-3%	-2%	-3%	-3%	-3%
Europe, South America, India	US$ M	2,779.0	3,008.0	3,283.0	3,950.8	4,462.7	5,106.7	5,930.9	6,795.6	7,823.7
% of total	%	34%	35%	35%	40%	42%	44%	47%	50%	52%
% y/y	%		8%	9%	20%	13%	14%	16%	15%	15%
Clean Air	US$ M	1,835.0	1,989.0	2,207.0	2,568.0	2,879.9	3,265.5	3,723.3	4,214.5	4,785.2
% of total	%	22%	23%	24%	26%	27%	28%	30%	31%	32%
% y/y	%		8%	11%	16%	12%	13%	14%	13%	14%
Ride Performance	US$ M	944.0	1,019.0	1,076.0	1,382.8	1,582.8	1,841.2	2,207.6	2,581.2	3,038.5
% of total	%	11%	12%	12%	14%	15%	16%	18%	19%	20%
% y/y	%		8%	6%	29%	14%	16%	20%	17%	18%
Asia Pacific	US$ M	1,266.0	1,354.0	1,666.0	1,679.1	1,871.9	2,113.9	2,296.0	2,556.3	2,842.7
% of total	%	15%	16%	18%	17%	18%	18%	18%	19%	19%
% y/y	%		7%	23%	1%	11%	13%	9%	11%	11%
Clean Air	US$ M	1,037.0	1,077.0	1,209.0	1,284.0	1,389.0	1,522.3	1,646.9	1,789.8	1,948.0
% of total	%	13%	13%	13%	13%	13%	13%	13%	13%	13%
% y/y	%		4%	12%	6%	8%	10%	8%	9%	9%
Ride Performance	US$ M	229.0	277.0	457.0	395.1	482.9	591.7	649.2	766.6	894.7
% of total	%	3%	3%	5%	4%	5%	5%	5%	6%	6%
% y/y	%		21%	65%	-14%	22%	23%	10%	18%	17%
Federal-Mogul	US$ M	7,419.0	7,434.0	7,300.0	1,886.0	8,267.2	9,060.5	10,095.6	10,910.8	11,734.5
% of rest of Tenneco	%	90%	86%	79%	76%	78%	79%	81%	80%	78%
% y/y	%		0%	-2%	3%	10%	10%	11%	8%	8%
Total net sales	US$ M	8,209.0	8,599.0	9,274.0	11,763.0	18,890.7	20,593.6	22,634.1	24,599.9	26,757.4
Assets by Segment:										
Assets except FM	US$ M	3,967.0	4,342.0	4,842.0	5,028.0	5,399	5,883	6,329	6,904	7,542
North America	US$ M	1,901.0	2,079.0	2,097.0	2,177.6	2,280.4	2,352.4	2,444.4	2,540.5	2,633.6
% of total	%	48%	48%	43%	43%	42%	40%	39%	37%	35%
% y/y	%		9%	1%	4%	5%	3%	4%	4%	4%
Clean Air	US$ M	1,209.0	1,356.0	1,344.0	1,395.6	1,465.9	1,505.0	1,562.9	1,623.1	1,679.2
% of total	%	30%	31%	28%	28%	27%	26%	25%	24%	22%
% y/y	%		12%	-1%	4%	5.0%	2.7%	3.8%	3.9%	3.5%
Ride Performance	US$ M	692.0	723.0	753.0	781.9	814.4	847.4	881.4	917.3	954.5
% of total	%	17%	17%	16%	16%	15%	14%	14%	13%	13%
% y/y	%		4%	4%	4%	4.2%	4.0%	4.0%	4.1%	4.0%
Europe, South America, India	US$ M	1,212.0	1,304.0	1,440.0	1,495.3	1,605.4	1,721.7	1,827.6	1,954.1	2,086.5
% of total	%	31%	30%	30%	30%	30%	29%	29%	28%	28%
% y/y	%		8%	10%	4%	7%	7%	6%	7%	7%
Clean Air	US$ M	713.0	734.0	834.0	866.0	925.0	999.8	1,062.2	1,137.1	1,218.1
% of total	%	18%	17%	17%	17%	17%	17%	17%	16%	16%
% y/y	%		3%	14%	4%	6.8%	8.1%	6.2%	7.0%	7.1%
Ride Performance	US$ M	499.0	570.0	606.0	629.3	680.4	721.9	765.4	817.0	868.4
% of total	%	13%	13%	13%	13%	13%	12%	12%	12%	12%
% y/y	%		14%	6%	4%	8.1%	6.1%	6.0%	6.7%	6.3%
Asia Pacific	US$ M	822.0	912.0	1,242.0	1,289.7	1,513.3	1,808.4	2,056.9	2,409.8	2,821.4
% of total	%	21%	21%	26%	26%	28%	31%	33%	35%	37%
% y/y	%		11%	36%	4%	17%	20%	14%	17%	17%
Clean Air	US$ M	596.0	647.0	843.0	875.4	1,000.0	1,161.2	1,293.5	1,473.5	1,677.1
% of total	%	15%	15%	17%	17%	19%	20%	20%	21%	22%
% y/y	%		9%	30%	4%	14.2%	16.1%	11.4%	13.9%	13.8%
Ride Performance	US$ M	226.0	265.0	399.0	414.3	513.3	647.3	763.4	936.3	1,144.4
% of total	%	6%	6%	8%	8%	10%	11%	12%	14%	15%
% y/y	%		17%	51%	4%	23.9%	26.1%	17.9%	22.6%	22.2%
Federal-Mogul	US$ M	7,067.0	7,228.0	7,076.0	8,204.0	8,644.7	9,198.3	10,048.1	10,752.0	11,563.7
% of rest of Tenneco	%	178%	166%	146%	163%	160%	156%	159%	156%	153%
% y/y	%		2%	-2%	16%	5.4%	6.4%	9.2%	7.0%	7.5%
Total net assets	US$ M	3,967.0	4,342.0	4,842.0	13,232.0	14,043.8	15,080.8	16,377.0	17,656.3	19,105.2
Asset Turnover Ratio										
Overall except FM		2.1	2.0	1.9	2.3	2.0	2.0	2.0	2.0	2.0
North America		2.2	2.0	2.1	2.0	1.9	1.8	1.8	1.7	1.7
% y/y	%		-7%	1%	-5%	-4%	-3%	-4%	-3%	-3%
Clean Air		2.4	2.2	2.3	2.2	2.1	2.1	2.1	2.0	2.0
% y/y	%		-6%	4%	-5%	-2.3%	-1.0%	-2.7%	-2.0%	-1.9%
Ride Performance		1.9	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.1
% y/y	%		-10%	-5%	-7%	-7.2%	-6.2%	-6.7%	-6.7%	-6.6%
Europe, South America, India		2.3	2.3	2.3	2.6	2.8	3.0	3.2	3.5	3.7
% y/y	%		1%	-1%	16%	5%	7%	9%	7%	8%
Clean Air		2.6	2.7	2.6	3.0	3.1	3.3	3.5	3.7	3.9
% y/y	%		5%	-2%	12%	5.0%	4.9%	7.3%	5.7%	6.0%
Ride Performance		1.9	1.8	1.8	2.2	2.3	2.6	2.9	3.2	3.5
% y/y	%		-6%	-1%	24%	5.9%	9.6%	13.1%	9.5%	10.8%
Asia Pacific		1.5	1.5	1.3	1.3	1.2	1.2	1.1	1.1	1.0
% y/y	%		-4%	-10%	-3%	-5%	-6%	-5%	-5%	-5%
Clean Air		1.7	1.7	1.4	1.5	1.4	1.3	1.3	1.2	1.2
% y/y	%		-4%	-14%	2%	-5.3%	-5.6%	-2.9%	-4.6%	-4.4%
Ride Performance		1.0	1.0	1.1	1.0	0.9	0.9	0.9	0.8	0.8
% y/y	%		3%	10%	-17%	-1.3%	-2.8%	-7.0%	-3.7%	-4.5%
Federal-Mogul		1.0	1.0	1.0	0.9	1.0	1.0	1.0	1.0	1.0
% y/y	%		-2%	0%	-11%	4.0%	3.0%	2.0%	1.0%	0.0%
Overall	US$ M	2.1	2.0	1.9	1.7	1.3	1.4	1.4	1.4	1.4

Expenses

Expenses										
Net Sales Tenneco	US$ M	8,209	8,599	9,274	11,763	18,891	20,594	22,634	24,600	26,757
Net Sales Federal-Mogul	US$ M	7,419	7,434	7,300						
Cost of goods sold Tenneco	US$ M		7,123	7,812	10,071	15,977	17,453	19,222	20,859	22,694
% of revenue	%		*83%*	*84%*	*86%*	85%	85%	85%	85%	85%
SG&A	US$ M		589	638	794	1,290	1,404	1,539	1,676	1,822
% of revenue	%		*7%*	*7%*	*7%*	7%	7%	7%	7%	7%
Depreciation - Amortization	US$ M		212	226	345	592	637	706	759	823
R&D	US$ M		154	158	204	329	356	392	427	464
% of revenue	%		*1.8%*	*1.7%*	*1.7%*	2%	2%	2%	2%	2%
Other operating expense, net	US$ M		5	21	40	39	53	61	60	69
% of revenue	%		*0%*	*0%*	*0%*	0%	0%	0%	0%	0%
Cost of goods sold Federal-Mogul	US$ M	6,345	6,301	6,200						
% of revenue	%	*86%*	*85%*	*85%*						
SG&A	US$ M	794	815	812						
% of revenue	%	*11%*	*11%*	*11%*						
Depreciation - Amortization	US$ M	59	58	60						
% of revenue	%	*1%*	*1%*	*1%*						
R&D	US$ M	-	-	-						
% of revenue	%		*0.0%*	*0.0%*						
Other operating expense, net	US$ M	5	(21)	(12)						
% of revenue	%	*0%*	*0%*	*0%*						

NWC

Working Capital									
Net Sales	US$ M	**8,599**	**9,274**	**11,763**	**18,891**	**20,594**	**22,634**	**24,600**	**26,757**
COGS	US$ M	7,123	7,812	10,071	15,977	17,453	19,222	20,859	22,694
Accounts Receivable	US$ M	1,294	1,321	2,572	3,449	3,739	4,325	4,590	4,989
Inventories	US$ M	730	820	2,245	2,609	2,856	3,429	3,565	3,880
Other Current Assets	US$ M	229	288	590	746	825	961	1,011	1,102
Accounts payable	US$ M	1,501	1,582	2,759	3,839	4,176	4,771	5,089	5,534
Accrued expenses	US$ M	300	424	1,001	748	1,286	1,803	3,001	3,983
Assumptions									
Accounts Receivable as % of revenue	%	15.05%	14.24%	21.87%	18%	18%	19%	19%	19%
Inventories as % of COGS	%	10.2%	10.5%	22.3%	16%	16%	18%	17%	17%
Other Current Assets as % of revenue	%	2.66%	3.11%	5.02%	4%	4%	4%	4%	4%
Accounts payable as % of COGS	%	21.1%	20.3%	27.4%	24%	24%	25%	24%	24%
Accrued expenses as % of COGS	%	4.2%	5.4%	9.9%	7%	8%	8%	8%	8%
Days sales outstanding	#		51.5	60.4	58.2	63.7	65.0	66.1	65.3
Days sales in inventory	#		36.2	55.5	55.5	57.1	59.7	61.2	59.9
Days payable outstanding	#		72.0	78.7	75.4	83.8	84.9	86.3	85.4
Cash conversion cycle	#		**15.6**	**37.3**	**38.2**	**37.0**	**39.7**	**41.1**	**39.8**

Fixed Assets:

Fixed Assets									
Depreciation									
Depreciation - % of revenue method									
Annual Depreciation	US$ M	212	226	345	509	554	623	669	728
% of revenue	%	2.5%	2.4%	2.9%	2.7%	2.7%	2.8%	2.7%	2.7%
Depreciation - % of assets									
Annual Depreciation	US$ M	212	226	345	675	721	790	848	918
% of assets	%	4.9%	4.7%	4.9%	4.8%	4.8%	4.8%	4.8%	4.8%
Average	US$ M				592	637	706	759	823

Retained Earnings:

Retained Earnings & Dividends

Retained Earnings									
Beginning balance	US$ M				1,726	1,864	2,026	2,210	2,475
(+) Net income	US$ M				218	243	265	345	409
(-) Dividends paid	US$ M				(81)	(81)	(81)	(81)	(81)
Ending balance	US$ M				1,864	2,026	2,210	2,475	2,803
Dividends									
Cash dividend per share	US$	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Basic shares outstanding	M	56	53	59	81	81	81	81	81
Cash dividends paid	US$ M	56	53	59	81	81	81	81	81

Ratios:

Financial Ratios	Historicals			Forecast Period				
	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E
Profitability								
Net Profit Margin	4.9%	2.9%	0.9%	1.5%	1.5%	1.4%	1.6%	1.7%
Return on Asset	9.8%	5.5%	0.8%	2.0%	2.0%	2.0%	2.3%	2.4%
Return on Equity	23.9%	14.9%	6.3%	15.5%	16.8%	18.1%	22.6%	26.2%
Liquidity								
Current Ratio	1.32	1.21	1.41	1.36	1.26	1.25	1.08	0.88
Cash Ratio	0.18	0.14	0.16	0.23	0.17	0.18	0.13	0.11
Asset Utilization								
Total Asset Turnover	1.98	1.93	0.89	1.35	1.37	1.38	1.39	1.40
Inventory Turnover	9.76	9.53	4.49	6.12	6.11	5.61	5.85	5.85
Receivables Turnover	0.16	0.17	0.13	0.17	0.17	0.16	0.17	0.16
Financial leverage								
LT Debt to Asset	29.8%	28.3%	40.4%	38.0%	35.4%	32.6%	27.4%	16.5%
LT Debt to Equity	72.9%	76.5%	300.9%	300.9%	300.9%	300.9%	272.6%	177.3%
Debt to Asset	31.8%	30.5%	41.5%	38.0%	35.4%	32.6%	27.4%	23.7%
Debt to Equity	78.0%	82.3%	309.5%	300.9%	300.9%	300.9%	272.6%	255.4%
Interest Coverage	5.61	5.67	2.32	2.39	2.57	2.72	3.23	3.84
Debt Service Coverage	0.83	0.06	0.05	2.39	2.57	2.72	1.08	0.46
Market Value								
Price to Earnings	4.19	6.70	15.99	6.47	5.94	5.53	4.42	3.81
EV/EBITDA	8.81	10.11	9.85	5.11	4.83	4.51	4.06	3.75

Extended Du Pont Analysis:

DuPont Analysis	Historicals			Forecast Period				
	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E
Tax Burden								
Earnings before taxes - US$ M	424	336	174	386	421	452	565	655
Net Income - US$ M	424	265	111	274	299	321	401	465
Tax Burden Ratio	**100%**	**79%**	**64%**	**71%**	**71%**	**71%**	**71%**	**71%**
Interest Burden								
Earnings before taxes	424	336	174	386	421	452	565	655
EBIT	516	408	306	664	689	714	819	885
Interest Burden Ratio	**82%**	**82%**	**57%**	**58%**	**61%**	**63%**	**69%**	**74%**
Profitability								
EBIT	516	408	306	664	689	714	819	885
Revenue	8,209	8,599	9,274	11,763	18,891	20,594	22,634	24,600
Operating Profit Margin	**6.3%**	**4.7%**	**3.3%**	**5.6%**	**3.6%**	**3.5%**	**3.6%**	**3.6%**
Asset Turnovers								
Revenue	8,209	8,599	9,274	11,763	18,891	20,594	22,634	24,600
Total Assets	4,346	4,796	13,232	14,044	15,081	16,377	17,656	19,105
Asset Turnover Ratio	**1.89**	**1.79**	**0.70**	**0.84**	**1.25**	**1.26**	**1.28**	**1.29**
Financial Leverage								
Total Assets	4,346	4,796	13,232	14,044	15,081	16,377	17,656	19,105
Total Equity	3,495	3,091	2,189	2,559	2,559	2,559	2,559	2,559
Asset/Equity Ratio	**1.24**	**1.55**	**6.04**	**5.49**	**5.89**	**6.40**	**6.90**	**7.47**
ROE	**12.1%**	**8.6%**	**5.1%**	**10.7%**	**11.7%**	**12.5%**	**15.7%**	**18.2%**