

November 19, 2019 05:01 AM GMT

General Motors Company | North America

Corvette: GM's Captive Ferrari Fighter?

Stock Rating
Overweight

Industry View
Cautious

Price Target
\$46.00

We look for today's all new mid-engine supercar to halo a sub-brand that hatches an 100% electric Corvette SUV driving a 5-fold increase in volume to 80k units by the mid 2020s. Base case DCF value of \$7bn, bull case of \$12bn. More than a needle-mover for GM.

It's time to look at the potential of GM's supercar brand. Corvette. A brand that has been synonymous with a single product... a 2 seat sports car, since its first generation (the C1) in 1953. Historically, the thought of GM expanding Corvette into anything beyond its single model status would have been *brand heresy*. But times are changing in global autos. GM, like many of its OEM brethren, are faced with the daunting task of pivoting from an internal combustion hegemony to all-electric propulsion which places strain on technological and financial resources. At the high end of luxury and sports car segment, many brands have expanded their model portfolios far beyond their traditional footprint. Lamborghini, Maserati, and Porsche rely on SUVs for ~30%, ~40%, and ~45% of their global unit sales respectively. Even Ferrari is introducing an SUV, the "Purosangue" in 2022. Ferrari's impressive growth and product expansion success since its carve-out from FCA has taken its valuation to >\$30bn... almost the enterprise value of Ford Motor Company.

Ultimately with the launch of the 2020 Corvette, we're looking at the potential of a hypothetical Corvette brand expansion, into SUV and BEVs, as a way for GM to help fund the transition to electric. This would be analogous to what other supercar brands have done, like Lamborghini and Porsche. *We note the company has not confirmed any such plans.*

Ford Mustang Mach-E unveil stands as a clear precedent with relevance to Corvette. Ford decided to launch its first BEV SUV under the moniker of its single-product sports car brand. The Mach-E extends the Mustang brand into an all-new powertrain, segment and consumer base. Arguably, Ford's most important powertrain statement in a generation... and they use a brand other than the 'blue oval.'

We have constructed a DCF valuation for Corvette on a stand-alone basis, which we value at **\$7bn** in our Base Case. We also compare Corvette to a select group of luxury sports car peers to examine how the introduction of an SUV can change the breadth of revenue.

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General Motors Company (GM.N, GM US)

Autos & Shared Mobility / United States of America

Stock Rating	Overweight
Industry View	Cautious
Price target	\$46.00
Shr price, close (Nov 15, 2019)	\$36.89
Mkt cap, curr (mm)	\$52,679
52-Week Range	\$41.89-31.47

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General Motors Company Risk Reward



Source: Thomson Reuters, Morgan Stanley Research

Price Target **\$46**

Price target of \$46 is the midpoint of our \$35 base case derived from our LBO model and our \$57 discounted SOTP bull case. We are bullish on management's strategy of focusing on high margin pickups in the NA market, skipping hybrids and moving directly to BEVs and monetizing Cruise to share the burden of capex in Auto 2.0. We see a potential China exit in the future, similar to the exit of Europe. We see reasonable scope for GM management to take steps towards more radical structural change in its group to address issues depressing its multiple and to attract the talent, capital and business/technical partners required to be more relevant in Auto 2.0.

Bull **\$57**

Strategic moves to seed separate auto tech portfolio. Fundamental repositioning of Cadillac as a 'captive Tesla.' Remaining businesses generate substantial cash flow that can be used to restructure/exit loss-making passenger car operations. Given the rapid pace of technological change, we believe the catalyst path to unlocking SOTP value could accelerate in 2019. It's a race between management execution and a late-stage global auto cycle.

Base **\$35**

US SAAR declines to ~16.5mm in 2020, enough to generate profit but at substantially lower than record 2017-2018 levels. No significant changes to business structure to preserve tech value. This case assumes GM's North America margins are 8.4% in 2020 (6.8% at company level) while China JV profit declines are more subtle. Rest of world regions near break-even.

Bear **\$15**

US SAAR faces more serious used car and auto credit pressures. US SAAR in grips of cyclical downturn limits GM's ability to sustain high margins and cash flow. Working cap outflow eliminates 100% of net industrial cash. EBITDA falls by more than 50%. Chinese JV dividends worth less than \$4/share as volume growth stalls and margins collapse. Deferred tax assets are worthless.

Investment Thesis

- We have modeled GM heading into a cyclical downturn in the US market.
- Profits and cash flow are highly dependent on N. America and China. Nearly all of our Adjusted EBIT forecast for GM is in NA.
- New entrants compete for capital and precious human resources, especially in tech and software development.
- GM management have a proven track record to allocate capital away from structurally challenged areas towards repositioning the business model.
- Attractive valuation does not discount optionality to hidden franchise value such as Corvette, Cadillac, etc

Investment Risks/Risks to Our PT

- We remain concerned about the value of used vehicle prices in the US market given unprecedented technological change. Risk of impaired consumer credit and a potential buyers strike is high.
- Capacity appears to be growing faster than demand and auto credit balances are at record highs. Rising supply of off-lease vehicles add pressure to the used market – an important store of consumer credit.
- The strategic initiatives implied by our \$46 price target to unlock hidden value may not come to fruition either due to external factors (the cycle) or management execution.

Potential Catalysts

- Potential China government stimulus to counter the slide of auto sales in the market.
- Initiation of GM Financial dividend
- Further nontraditional auto tech partnerships/capital return announcements.

Corvette: Where Are We Today?

Corvette & 2020 Stingray

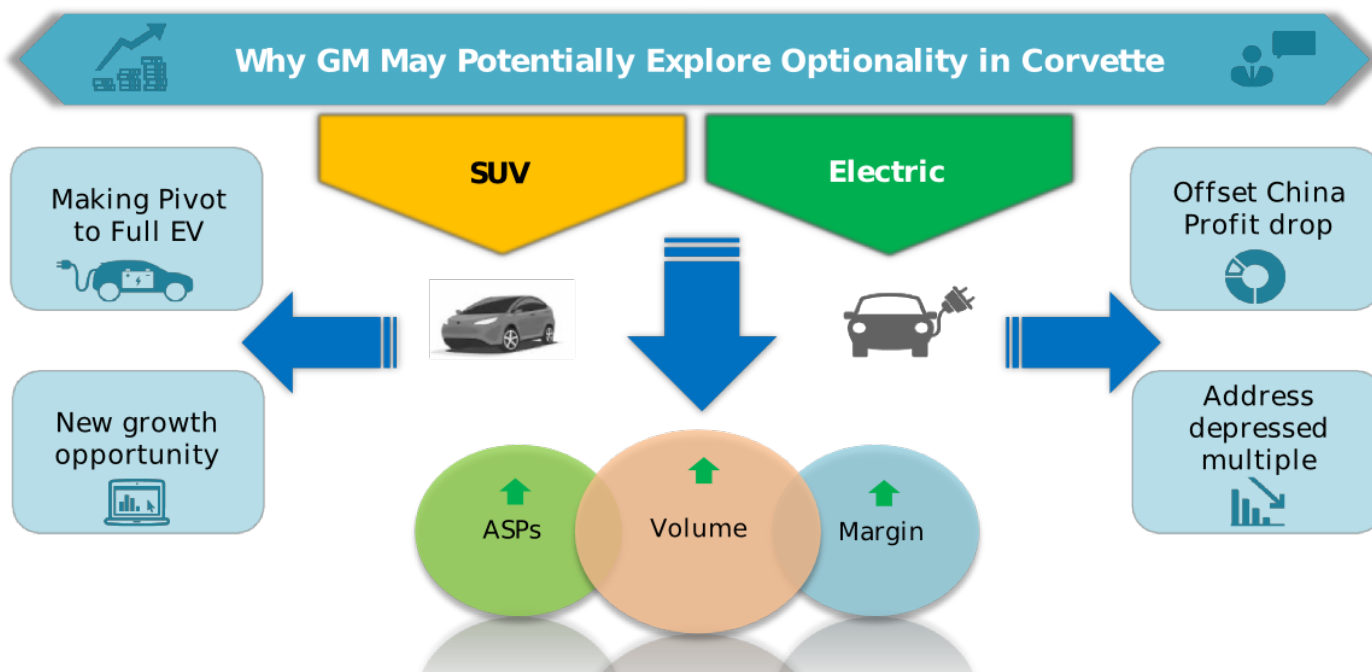
Why are we talking about Corvette? In our discussions with investors, the topic of Corvette rarely comes up. Moreover we are convinced that investors do not think Corvette is a needle-mover for GM stock. We think investors are ascribing, at best a \$2bn valuation to Corvette (our DCF Bear Case), and at worst, 0 value. In essence, we think that the Corvette brand is undervalued and underappreciated by the market. Historically, Corvette has served as a platform for GM to showcase its technology in high performance engine + chassis development. This also lends Corvette to be a platform for showcasing an all-electric vehicle, including an SUV. The commercial strategy filled a uniquely American niche of offering a supercar type driving experience at an affordable price (1/2 to 1/4 the price of other nameplates)...while capitalizing on the brand's heritage and loyalty. We note that GM wouldn't comment on any future plans around Corvette models and going electric, other than to say they look at a variety of things and recognize the strength of the Corvette brand...

We see further opportunity to develop Corvette in terms of:

1. Commercializing a performance-oriented BEV strategy.
2. Expansion of product line into SUVs and Crossovers.
3. Strong top-line growth, margins and free cash flow generation.
4. Recognition of value from shareholders.

For these reasons we explore the potential of Corvette throughout this report to provide a lens into the potential of the brand.

Exhibit 1: Why GM May Potentially Explore Optionality in Corvette



Source: Morgan Stanley Research

Supercars are in season. Supercars have been getting more attention by both OEMs and investors. We expect OEMs will examine new ways to grow profit and address their compressed multiple this late stage in the cycle, potentially pushing the company to explore aspects of hidden value to help fund enormous uses of capital. [Bloomberg](#) recently reported that VW is considering a "review" of Lamborghini that includes a potential IPO. Given VW plans to spend ~€50bn on EVs over the next 5 years, this could potentially push the company to explore veins of hidden value to help fund enormous uses of capital. We note that VW has since come out and [denied](#) that it is looking to carve out the Lamborghini business. We also note that not all supercar businesses have thrived of late. We've seen Aston Martin face some of these challenges, while Ferrari (which we rate Overweight) has defended its brand and maintained a robust growth profile over time.

Ultimately we see 2 ways that Corvette can become a core "sub-brand" of GM to further increase its relevance...**SUVs & Electrification.**

What is Corvette? Corvette is GM's 2 door, sports car model, that sits within the Chevrolet brand. Sales of Corvette are primarily within the US and Canada. Starting production in 1953, the brand has had 8 generations, with refreshes taking place every 5-10 years. The new C8 Corvette, Mid-Engine (mid-engine provides better responsiveness, handling and weight distribution) will begin production in late 2020. GM has always had one model in the Corvette portfolio. Sales usually ramp after a release to ~35k and stabilize at the 15k mark once the model stales. The Corvette Stingray sits at an aspirational, yet somewhat affordable (relative to other sports cars) price point from ~\$60k to ~\$100k.

Exhibit 2: New Corvette (Mid-engine) Stingray 2020

Source: Chevrolet.com

There are 3 trims of the Corvette Stingray: 1LT, 2LT, 3LT

1LT: Coupe starting at \$60.0k, Convertible at \$67.5k

- 1LT is the car for driving purists who want the lightest Stingray possible, but one that's still very well equipped.

2LT: Coupe starting at \$67.3k, Convertible at \$74.3k

- 2LT adds a number of comfort and convenience features in addition to color-matched interior options. Includes everything in 1LT, plus: Front curb view cameras, Bose Performance Series 14-speaker audio system, Heated/vented seats and heated steering wheel, Available GT2 seats in Napa leather.

3LT: Coupe starting at \$71.9k, Convertible at \$78.9k

- 3LT is the utmost in luxury performance, with a leather-wrapped interior. Includes everything in 2LT, plus: 13 interior color options, Custom leather-wrapped instrument panel and door, Sueded-microfiber upper interior trim, Standard GT2 seats in Napa leather.

Performance Specs Summary

- Horsepower: 495
- Torque: 470lb-ft
- Top Speed 194mph
- 0 to 60mph: 2.92 seconds
- Engine: 6.2L V8

Mark Reuss at Corvette Reveal Presentation: "Where else can you get a supercar that goes 0 to 60[mph] in less than 3 seconds, for this amount of money."

Exhibit 3: 2020 Corvette vs. Ferrari GTB

	Corvette 2020 Stingray	Ferrari 488 GTB
Price	~\$80k	~\$280k
0 to 60mph	<3 seconds	3 seconds
Horsepower	495	661
Engine	6.2 L V8	3.9 L V8

Source: Corvette, Ferrari, Morgan Stanley Research.

We visited Corvette's [website](#) to configure variations of the C8 in order to ascertain the true average selling price. We were surprised by how high the ASP can rise after adding some features and configured our car to \$78.5k (exc. tax and fees) for the 3LT Coupe.

Exhibit 4: 2020 Corvette Customization Website

The screenshot shows the Corvette customization website interface. At the top, there are navigation tabs: 1 CONFIGURATION, 2 TRIMS, 3 COLORS, 4 PACKAGES, 5 EXTERIOR, 6 INTERIOR, and 7 SUMMARY. The current configuration is '2020 CORVETTE STINGRAY RWD Coupe 3LT' with a 'Net Price' of '\$78,535'. Below the navigation is a 'Saved' indicator and a large image of the red Corvette. To the right of the car image, there are buttons for 'Locate A Dealer', 'Send', and 'Print'. Below these are several pricing rows: 'Standard Vehicle Price' at \$70,850, 'Selected Colors' at \$0, 'Selected Packages (2)' at \$5,995, and 'Selected Options (7)' at \$595. The 'Total Vehicle and Options' is \$77,440, with a 'Destination Freight Charge' of \$1,095, resulting in a 'Total Vehicle Price' of \$78,535 and a 'Net Price' of \$78,535. Below the pricing is a 'Standard Features' section with buttons for 'Locate A Dealer', 'Request A Quote', 'Value Trade-In', and 'Start Over'. At the bottom, there is a copyright notice for ©2019 General Motors and links for 'Copyright & Trademark', 'Site Map', 'Privacy', and 'AdChoices'.

Source: Corvette.com

Corvette's Assets: Where is Corvette Made?

Tonawanda Engine Plant

- The Tonawanda plant will produce the 6.2L Small Block V-8 engine that will power the 2020 Chevrolet Corvette Stingray.

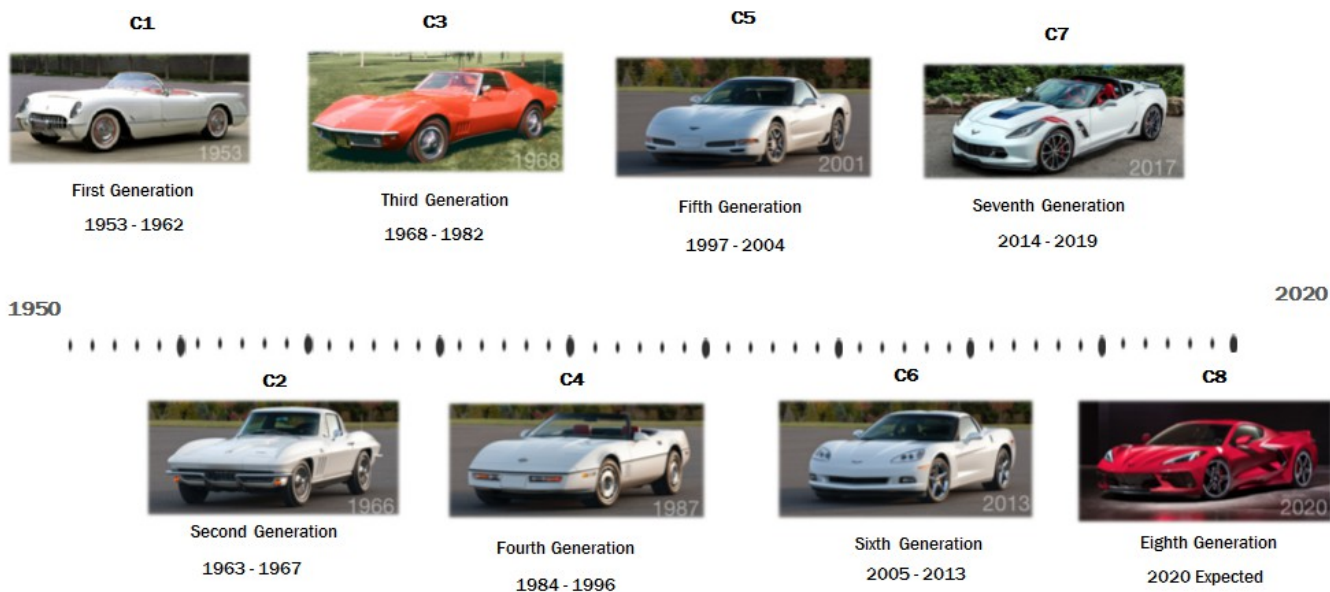
- Location: Buffalo, NY
- Employees: 1,540 total employees (1,356 hourly employees, 184 salaried)

Bowling Green Plant

- Bowling Green Assembly is the only final assembly plant in the world that builds Corvettes
- Location: Bowling Green, KY
- Employees: 1,052 total employees (888 hourly employees, 164 salaried)
- Other Output: 2019 Chevrolet Corvette Stingray/Z06/Grand Sport/ZR1, LT1, LT4 and LT5 6.2L V-8 engines for Corvette

Corvette Timeline - Below is a timeline of Corvette models over time. It highlights 8 models spanning over 7 decades. The brand has stood the test of the time and has maintained its relevance across decades, with one core model solely in its portfolio in each epoch.

Exhibit 5: Generations of Corvette

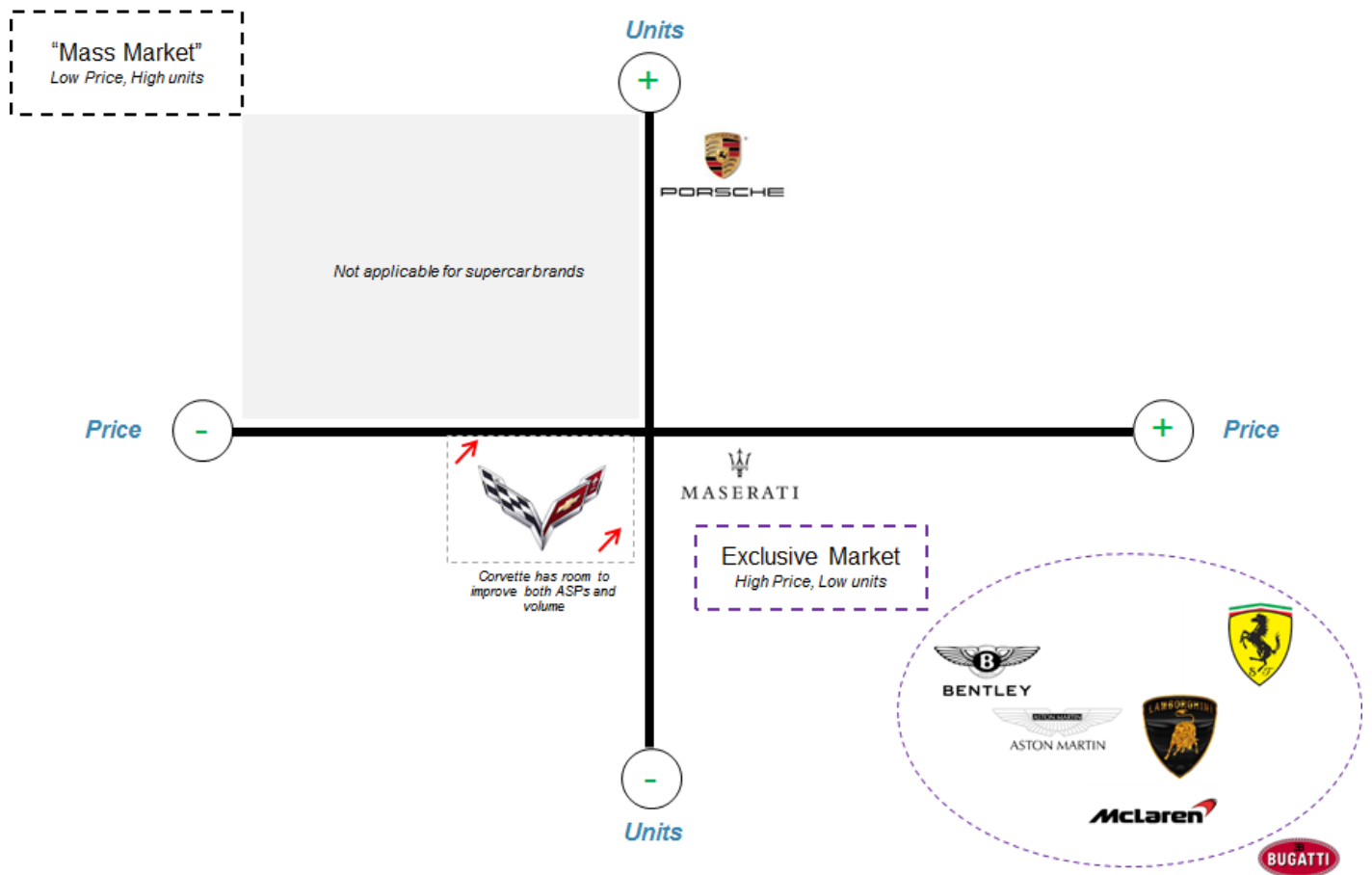


Source: Jalopnik

Corvette Positioning Landscape

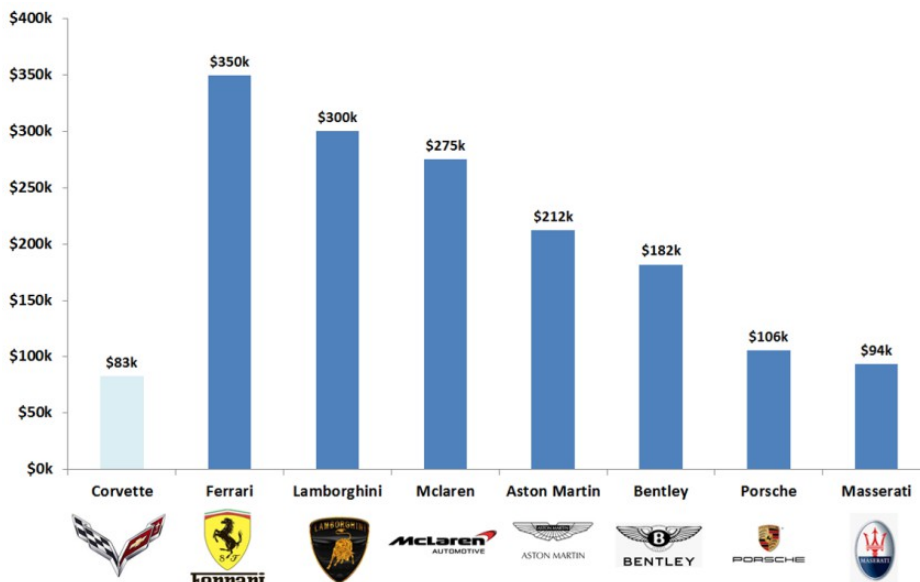
We illustrate the supercar competitive landscape by focusing on 2 key vectors: **price** and **units**. We believe that the Corvette brand currently sits in a somewhat niche market of aspirational yet relatively but low ASP (for a luxury sports car) with low total unit sales, especially over the course of its 5-10 year life span as a brand. We think this can change. We believe the Corvette brand can expand model options to potentially incorporate a range that includes a high ASP (~\$150k) sports car that could resonate with enthusiasts, as well as an SUV, amongst other models. Ultimately what the competitive positioning exhibit illustrates to us is that Corvette has room to improve both price and volume, relative to its current position.

Exhibit 6: Competitive Positioning Landscape



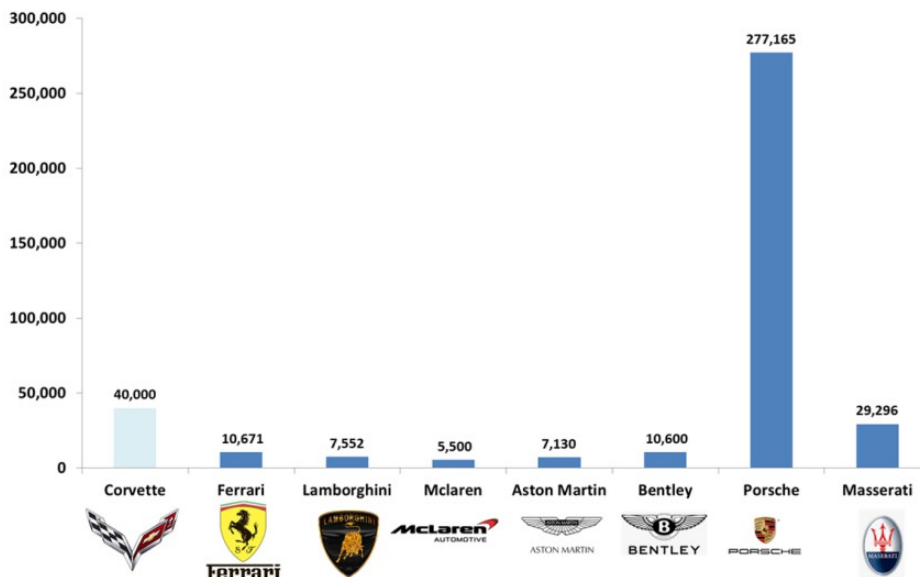
Source: Morgan Stanley Research

Exhibit 7: Corvette ASP vs. Supercar Brands - 2020 MSE



Source: Morgan Stanley Research.

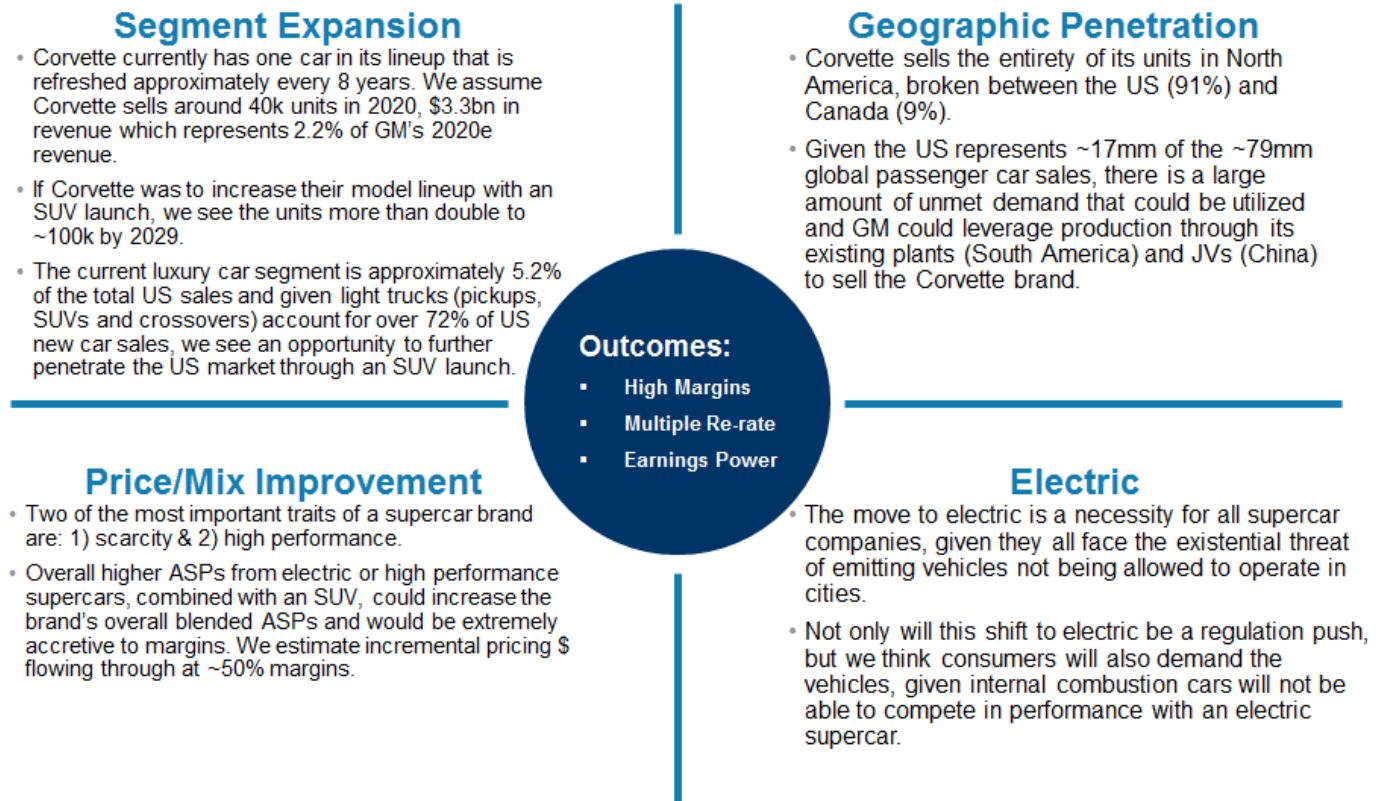
Exhibit 8: Corvette Units vs. Supercar Brands - 2020e



Source: Morgan Stanley Research, IHS

After evaluating the competitive landscape, we believe there are 4 ways that GM can successfully maximize the Corvette brand as a way to increase value to shareholders: **1) segment expansion, 2) geographic penetration, 3) electric propulsion, 4) price/mix improvement.**

Exhibit 9: Potential Supercar Playbook for Corvette



Source: Morgan Stanley Research

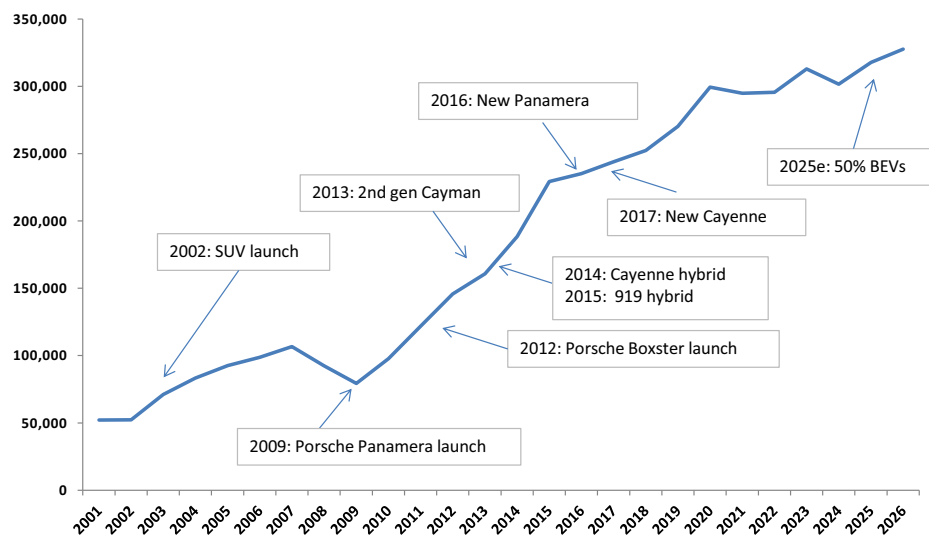
Improvements to Corvette becoming a supercar company... Corvette does not have the F1 heritage or family built tradition associated with other European supercar companies such as Ferrari. However, Corvette does have brand authenticity associated with American-built performance and quality over decades. Resonating with its loyal base while maintaining relevance with new generations and across new segments could increase its brand awareness and hold or increase its brand value in decades to come.

Lessons Learned from Porsche

While acknowledging many differences, we see valuable examples from Porsche. In our view, Porsche has successfully manifested itself into a cash cow by maintaining elevated pricing whilst servicing a variety of segments. While the risks of brand dilution have always existed, Porsche has managed this delicate relationship of scarcity vs volume growth particularly well, which has been reflected in its financials.

Porsche's Turnaround- Porsche faced financial difficulties in the early 1990s which was compounded by its units falling from ~50k to ~14k from 1986 to 1993. Porsche devised a plan to increase scale and its answer was the Porsche Cayenne which was introduced in 2002. This resulted in Porsche units doubling in 6 years. Today Porsche sells across a variety of segments: SUV (Cayenne), Electric (Taycan), Low ASP sportscar (Panamera), High ASP sportscar (911). Our EU Autos analyst, Harald Hendrikse, thinks: **50% of Porsche's sales will be BEV by 2025, and that Porsche currently generates 17-18% EBIT margins.** Could Porsche be a playbook for Corvette to follow..?

Exhibit 10: Porsche Units over time



Source: IHS, Morgan Stanley Research, Porsche

In Summary, we think of Corvette as a free call option within GM. Specifically, Corvette possesses authentic supercar qualities that allows it to function as a unique sub-brand within GM. The brand also has immense optionality and potential through: driving up ASPs, increasing unit sales, expanding into new segments, building out an electrification strategy and if desired, exploring a carve out, from GM

Electric Corvette?

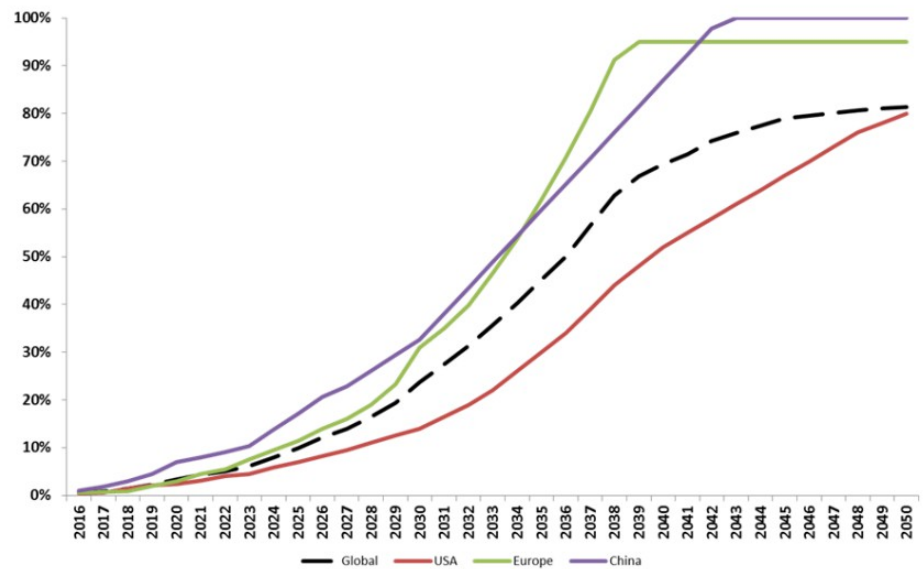
The Case for Rising EV Penetration

Across the auto industry, electric vehicle penetration is driven by: 1) **regulation**, 2) **new OEM players** (Rivian, chinese EVs), 3) **mega-tech** players (Google, Apple, Amazon), 4) shifting **consumer tastes and preferences** and 5) **electric vehicle infrastructure** build-out.

We think this shift will have profound effects for OEMs in terms of: 1) **demand** for diesel cars (and eventually all ICE cars), 2) **ICE residual values** / used car pricing dropping which the distorts value proposition of a new car, 3) **EVs impair previous research and development dollars** spent on ICE, as well as 4) **brand prestige** (EVs are more commoditized) and overall it forces OEMs to offer BEV alternatives which leads to large 5) **increased capex** burdens. Those OEMs that don't shift will incur significant penalties. We also think this will be a region by region nuances in the acceleration of EV penetration, with Europe and China leading the way.

In the US, we forecast ~400k BEV units in 2020, ramping to 2.2 million by 2030. We see BEV Penetration from 2.4% in 2020 in the US up to 14% by 2030.

Exhibit 11: EV Penetration By Sales



Source: Morgan Stanley Research

Exhibit 12: EV Penetration By Sales

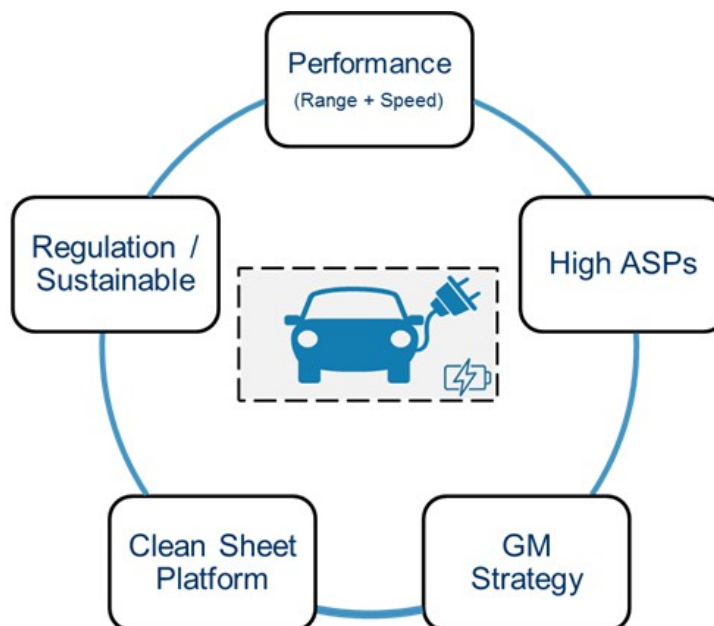
	2020	2025	2030	2035	2040	2045	2050
USA	2.4%	7.0%	14.0%	30.0%	52.0%	67.0%	80.0%
Europe	3.0%	11.5%	31.0%	61.9%	95.0%	95.0%	95.0%
China	6.9%	17.2%	32.6%	59.8%	86.9%	100.0%	100.0%
India	1.0%	5.0%	30.0%	55.0%	85.0%	100.0%	100.0%
Global	3.4%	10.0%	23.7%	45.1%	69.3%	79.0%	81.4%

Source: Morgan Stanley Research

Why Electric Corvette?

Why Corvette? We think an electric Corvette fits within GM's electrification strategy and can complement other areas targeted for electrification including Cadillac. In our opinion, Corvette is a strong candidate to moving to EVs. As GM has eliminated its hybrids and has strategically prioritized 100% electric BEVs, it will need to find a new "model" other than the Chevrolet Bolt to reignite some relevance in the EV market. We also think launching a BEV model with a sports car ensures high performance and captures the attention of media and customers.

Exhibit 13: Why Electric?



Source: Morgan Stanley Research

GM EV Strategy: GM's EV strategy is aimed at an 'all electric future' which emphasizes pure BEVs over hybrids, which are being phased out. GM aims to invest ~\$8bn in EVs and launch 20 new EVs globally by 2023. GM was one of the first to market with a mass market EV in the Chevy Bolt. In January, GM made Cadillac the centerpiece of its EV strategy and the company will double its engineering resources focused on EV and AV programs in the next two years.

Recently as part of the UAW negotiations, [Reuters](#) claimed GM has plans to invest \$3 billion in the Detroit-Hamtramck plant to make electric trucks and vans (BT1 program),

and part of a broader \$7.7 billion investment in GM's U.S. plants over the next four years. Also of note was that "the pickups and SUVs in the BT1 family will use a new dedicated electric vehicle architecture, including a "skateboard" chassis that bundles electric motor and batteries".

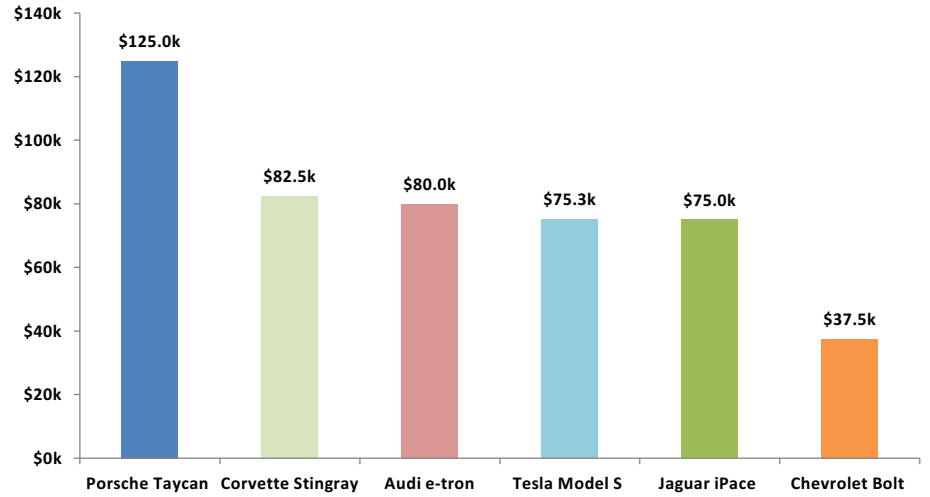
"Hybrids are just countermeasures to an ICE. You can't spend money to force the customer to carry around extra stuff they may not need. Or, you can spend your money on getting the real answer, which is providing the customer a zero emissions, sustainable, affordable solution." - GM President Mark Reuss

As GM has struggled to reinvigorate the Cadillac franchise, GM is investing heavily in Cadillac and it is reported GM has a \$12 billion product pipeline. In 2017, GM stated it planned to introduce a new dedicated flexible EV architecture and an advanced battery system to support the development of at least 20 new models in the US and China, by 2021.

- **We expect GM to allocate ~\$25bn on R&D and Capex over the next 4 years towards EVS.** While we think Cadillac will be a key pillar of the GM EV strategy, we see room for Corvette to be a part of GM's EV strategy and complement the existing gap of models across Cadillac and select Chevrolet models (e.g The Bolt) currently.

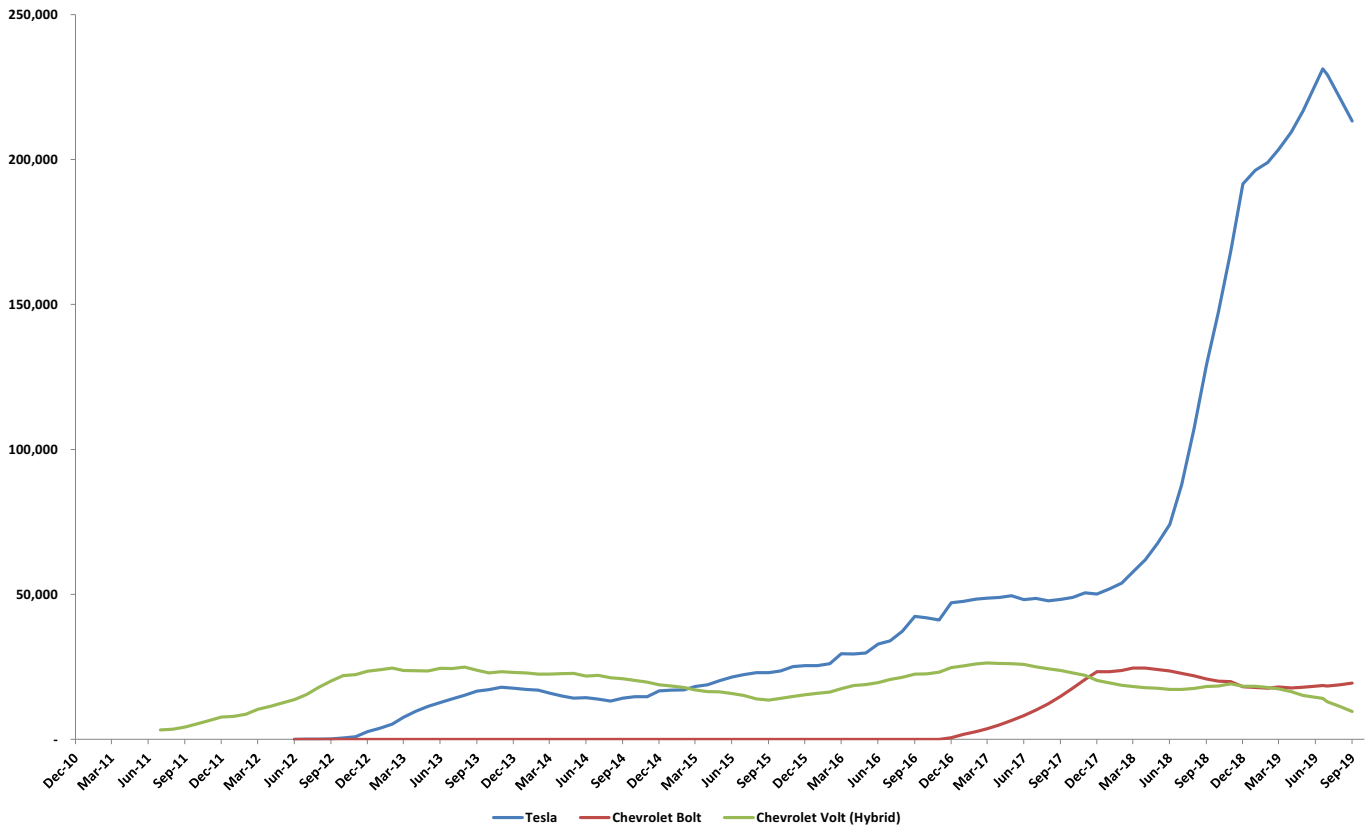
Corvette BEV Strategy: We are seeing many OEM players entering the EV market using the same playbook: release a top of range, high ASP model with best in class performance and full specs to ensure it captures media attention and generate positive customer and industry reviews. Such a move helps to convince customers that EVs are desirable from the point of view of speed, range and performance. We've seen this before with Tesla (through its Roadster) and recently Porsche (Taycan). We also think the mid-engine 2020 model is less likely to be suitable to an ICE or SUV and we see scope for Corvette to launch a dedicated BEV platform for a new 2024 model that takes a clean sheet approach and utilizes a "skateboard" powertrain, similar to new competitors such as Rivian, where the battery sits underneath the axle, adding space and providing better handling and performance.

Exhibit 14: Comparison of Average Selling Prices



Source: Morgan Stanley Research, Company Sources

Exhibit 15: US Chevrolet Bolt vs. Chevrolet Volt vs. Tesla Trailing 12 Months Sales



Source: InsideEVs

Corvette SUV

Why an SUV? The Corvette brand currently only produces one model, in one niche 2 door sports car segment of the market. Given the geographic focus of the Corvette brand in North America and the mix in the US dominated by light trucks (vs cars) at >70% (and rising), the vast majority of the market is underserved by Corvette. We have witnessed other luxury sports car manufacturers such as Lamborghini (Urus) and Porsche (Cayenne) venturing into SUVs as a way of taking advantage of their dominant brand value and increasing units, through releasing high ASP SUVs. We think this is a logical next step for Corvette. While there are many risks, proper execution can increase the relevance of the brand. If the most exclusive car brand in the world, Ferrari, has a strategy to move to SUVs, we think there is scope for Corvette to do the same.

"[If I were still at GM], what I would do is develop a dedicated architecture, super lightweight, super powerful, Porsche Cayenne-like, only much better and a little bigger, medium-volume Corvette SUV. Target worldwide 20,000 to 30,000 units, and price it starting at \$100,000. Gorgeous interior. No V-6 powertrain. No low-end version. It has to be the stellar premium sport-utility made in the United States, and the Corvette brand could pull that off." - Former GM exec Bob Lutz

What would an SUV look like and what will it do to the Corvette brand...?

Exhibit 16: Corvette SUV Rendering: The Future?



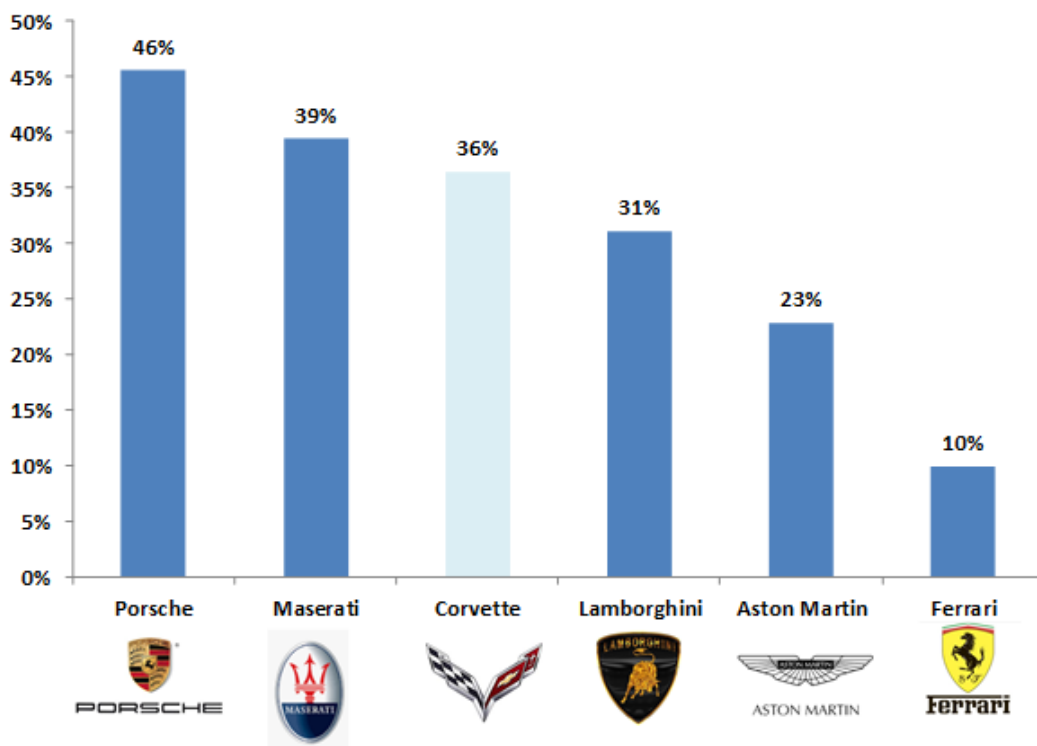
Source: Motor1.com

We did some work on what happens to a luxury OEM when they launch an SUV model...Historical results show that brand sales gets a big boost once an SUV launch occurs. After Porsche launched the Cayenne (~\$70k), the SUV represented 28% of its total unit sales within 2 years and reached over 50% in 2015, which it is still maintaining today. Another proof of concept has been the Lamborghini Urus, who has been able to

successfully launch its SUV with an ASP of ~\$200k and demand has been robust with IHS forecasting it contributes ~35% of total Lamborghini unit sales today. Similarly for Ferrari, IHS estimates ~860 units of the SUV (Purosangue) in 2022 (~6% of units) vs. our estimates of 993 units (8% of units). We assume the Purosangue is €250k at launch. For Aston Martin (DBX) with ASPs of ~£150k, IHS forecasts it will peak at around 29% of total unit sales before normalizing closer to 20% in 2026. For Corvette we assume SUV sales account for the majority of its value by 2025 and continue to expand thereafter.

Below is the SUV as % of unit sales in year 2024 and illustrates the importance of the SUV to the overall Porsche units which is ~50%. We assume Corvette could get to 36% of total units with an SUV launch.

Exhibit 17: SUV as % of Units - 2024e



Source: IHS, Morgan Stanley Research. Note: we estimate RACE until 2022 and for exhibit purposes assume 10% by 2024.

Exhibit 18: SUV Release

OEM	Year Released/Expected
Ferrari	2022
Lamborghini	2018
Maserati	2016
Aston Martin	2020
Porsche	2002
Corvette	2024

Source: IHS, Morgan Stanley Research

Would an electric Corvette cannibalize Cadillac? If Corvette does decide to go with an SUV, we think GM will ensure it does not build an electric SUV before Cadillac builds an electric SUV, given Cadillac is the pillar of GM's electrification strategy and the core SUV brand. Doing so may hurt the Cadillac franchise. Also, given the 2020 Corvette is a mid-engine platform, in order to pivot to an electric SUV, Corvette would need to introduce an entirely new model into its platform as a mid-engine chassis does not lend itself to a BEV powertrain.

Could Corvette Stand Alone?

Following Ferrari's successful spin-off / separation from FCA in 2016, some investors may have considered similar moves by other OEMs in an attempt to highlight value through providing greater independence to specific businesses. We note we have no knowledge of anything related to a crystallization of value for Corvette and we discuss the reasons for and against Corvette standing alone as a hypothetical comparison to what other brands have done in the industry.

Benefits of being stand-alone:

- Liquidation provides a source of cash for GM.
- Dedicated management team and specific Corvette strategy ensures a focus of the Corvette brand.
- Allows value to be unlocked for GM shareholders, which otherwise the market is not giving credit for.
- GM could maintain equity in Corvette NewCo and continue to extract dividends.
- Corvette could still use GM's scale to ensure a cost competitive supply chain.

Benefits of remaining part of GM:

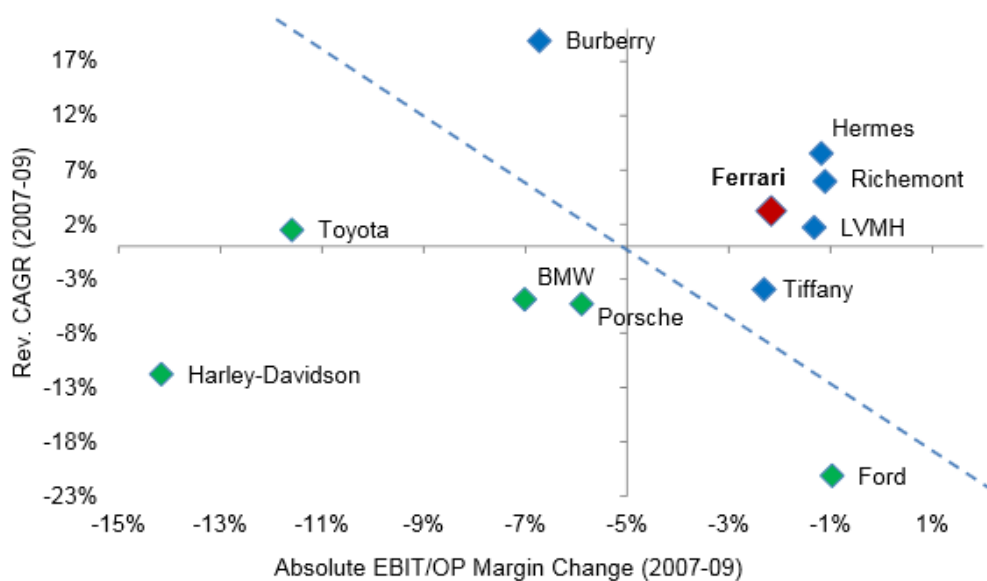
- A stand along Corvette could hurt Cadillac.
- Corvette provides diversification of GM away from light trucks (Silverado and GMC).
- GM could expand the Corvette brand under the existing GM umbrella to leverage its scale and be a more meaningful part of GM.
- Upside potential for a re-rate of GM stock as Corvette becomes a more meaningful portion of GM profitability.
- More scale where it matters (North America) and scale during downturn and EV build out phase.
- Brand enhancing to GM franchise as Corvette is American built that is synonymous with quality, and can appeal to younger generations.
- Corvette is capital light and not a drag on FCF.

A Point on Cyclicity...

- It is not clear how Corvette would fare as a stand alone brand during a downturn. According to IHS, between 2007 to 2009, **Corvette sales dropped from 36.6k in 2007 to 7.3k in 2009 - a drop of 80%**. This could be attributed to its high ASP price point without possessing the inelastic qualities that other supercar brands

such as Ferrari exemplify. By comparison, from the exhibit below, margins for HOG, Toyota, and BMW fell 14%, 12%, and 7%, respectively. We should also note that Toyota, BMW, and Ford all posted negative margins during the crisis. Even Porsche margins fell 6% from 2007-09. Meanwhile, Ferrari saw margins contract just 220bps over that period, very much in line with the minor margin deterioration experienced by luxury players like Tiffany, LVMH, Hermes, and Richemont. Ferrari shipments fell just 4% and revenues declined 7% between 2008-09 (yet captured a positive revenue CAGR of 3.2% from 2007-09). Ultimately we do not have enough history to ascertain how a stand alone Corvette brand could fare during a downturn, which is another potential reason against a stand-alone Corvette.

Exhibit 19: Revenue & Margin Performance During Downturn - Luxury Brands vs. Automotive



Source: Company Reports, Morgan Stanley Research

Bottom line: While there may be potential for value enhancement as a stand-alone entity, we don't view such a move as necessary for Corvette at this time and believe Corvette has substantial room to grow under the greater GM umbrella.

Corvette DCF


We have run a 10 year DCF to determine the valuation of the Corvette brand. The results are as follows:

- **Bear Case:** \$2bn. ~25k units by 2025, EBITDA margin of ~14%
- **Base Case:** \$7bn. ~74k units by 2025, EBITDA margin of ~19%
- **Bull Case:** \$12bn.~85k units by 2025, EBITDA margin of ~21%

DCF Assumptions:

- **EBITDA margins:** Rising to 16.5% in 2020 with the unveil of the 2020 Stingray. Exiting at 18.0% EBITDA margins in 2029 with \$1.6bn of EBITDA.
- **Unlevered FCF:** Slight burn in 2019 but rising over the course of the DCF to \$807mm in 2029
- **Debt free, cash free:** For modeling purpose we assume a clean capital structure with no leverage on Corvette and enterprise value = market cap
- **WACC:** Given we assume the company is unlevered, its cost of capital is equal to its cost of equity. We derived a cost of equity using CAPM from an adjusted beta of 1.25x, equity risk premium of 5.5% and a risk-free rate of 2.0% to get a cost of equity of 8.9%.
- **Terminal Growth Rate:** We assume a 0.50% terminal growth rate. Our implied terminal value EV/EBITDA multiple is 6.1x

Exhibit 20: DCF



Corvette Model and DCF (\$mm)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Units	15,842	40,000	46,354	50,989	45,890	64,246	73,883	81,271	89,399	93,869	98,562
Growth (%)		152.5%	15.9%	10.0%	-10.0%	40.0%	15.0%	10.0%	10.0%	5.0%	5.0%
ATP (\$)	75,000	82,500	80,850	79,637	78,841	81,995	84,454	86,143	87,866	88,745	89,632
Growth (%)		10.0%	-2.0%	-1.5%	-1.0%	4.0%	3.0%	2.0%	2.0%	1.0%	1.0%
Revenues	1,188	3,300	3,748	4,061	3,618	5,268	6,240	7,001	7,855	8,330	8,834
Gross Profit	273	842	974	1,076	977	1,422	1,654	1,820	2,003	2,083	2,209
Gross Margin (%)	23.0%	25.5%	26.0%	26.5%	27.0%	27.0%	26.5%	26.0%	25.5%	25.0%	25.0%
Variable Gross Margin (%)		26.9%	29.7%	32.5%	22.4%	27.0%	23.8%	21.9%	21.4%	16.7%	25.0%
EBITDA	71	545	675	772	669	1,027	1,204	1,330	1,453	1,499	1,590
EBITDA Margin (%)	6.0%	16.5%	18.0%	19.0%	18.5%	19.5%	19.3%	19.0%	18.5%	18.0%	18.0%
SG&A	238	297	300	305	308	395	449	490	550	583	618
SG&A/Sales (%)	20.0%	9.0%	8.0%	7.5%	8.5%	7.5%	7.2%	7.0%	7.0%	7.0%	7.0%
R&D	59	165	187	203	181	263	312	350	393	417	442
R&D/Sales (%)	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Operating Profit	-24	380	487	568	488	764	892	980	1,060	1,083	1,148
OP Margin (%)	-2.0%	11.5%	13.0%	14.0%	13.5%	14.5%	14.3%	14.0%	13.5%	13.0%	13.0%
Income Taxes	-6	95	122	142	122	191	223	245	265	271	287
Tax Rate (%)	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Net Income	-18	285	365	426	366	573	669	735	795	812	861
D&A	95	165	187	203	181	263	312	350	393	417	442
D&A/Sales (%)	8.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Capex	-143	-225	-250	-305	-271	-342	-374	-385	-432	-458	-486
Capex/D&A (%)	150.0%	136.5%	133.5%	150.0%	150.0%	130.0%	120.0%	110.0%	110.0%	110.0%	110.0%
Change in Working Capital	0	-42	-9	-6	9	-33	-19	-15	-17	-10	-10
(% Change in Sales)	NM	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Other	0	0	0	0	0	0	0	0	0	0	0
Free Cash Flow	-65	182	294	319	285	461	587	685	739	761	807

DCF

Unlevered Free Cash Flow	(65)	182	294	319	285	461	587	685	739	761	807
% Y / Y	-	-	61.2%	8.5%	-10.6%	61.9%	27.5%	16.6%	7.9%	3.0%	6.1%
Terminal Value											9,685
NPV of Free Cash Flows	(65)	167	248	247	203	301	353	378	374	354	345
NPV of Terminal Value											4,138

Adjusted Beta	1.25
Equity Risk Premium	5.5%
Risk Free Rate	2.0%
Cost of Equity	8.9%
Cost of Debt	5.0%
Tax Rate	25.0%
After Tax Cost of Debt	3.8%
Debt / Capital	0.0%
Equity / Capital	100.0%
Weighted Average Cost of Capital	8.9%
Terminal Growth	0.50%
2029 Implied EV/EBITDA	6.09x

Enterprise Value	7,042
(-) Debt	0
(+) Cash	0
(+) NOLs	0
(-) Minority Interest	0
(-) Pension	0
Equity Value	7,042
Share Count (000s)	1,442
Multiples based on PT	
2020e EV / EBITDA	12.9x
2020e P / E	24.7x
2020e P / FCF	38.7x
2020e P / Sales	2.1x

Discounted Back to Time Period: 12/31/2019 2019

Source: Morgan Stanley Research

The valuation matrix below illustrates our Bull/Base/Bear cases.

- In our **Base Case**, \$7bn EV implies 10.4x 2021 EV/EBITDA and 6.8x EV/EBITDA in

2024. This equates to 19.2x 2021 PE and 12.2x 2024 PE.

- In our **Bull Case**, \$12bn EV implies Corvette re-rates higher to 17.8x 2021 EBITDA (11.7x 2024 EBITDA) or 32.8x 2021 P/E (20.9x 2024 PE) closer to other premium supercar brands, yet still a discount, and assumed Corvette maintains robust unit growth and margins.
- Our **Bear Case** implies \$2bn value for Corvette, trading closer to GM's current multiple of ~3x fwd EBIDA, a PE of 5.5x in 2021.

Exhibit 21: Valuation Matrix

Market Value (\$)	Enterprise Value (\$)	EV/Sales (x)				EV/EBITDA (x)				P/E (x)			
		2021	2022	2023	2024	2021	2022	2023	2024	2021	2022	2023	2024
2,000	2,000	0.5x	0.5x	0.6x	0.4x	3.0x	2.6x	3.0x	1.9x	5.5x	4.7x	5.5x	3.5x
3,000	3,000	0.8x	0.7x	0.8x	0.6x	4.4x	3.9x	4.5x	2.9x	8.2x	7.0x	8.2x	5.2x
4,000	4,000	1.1x	1.0x	1.1x	0.8x	5.9x	5.2x	6.0x	3.9x	10.9x	9.4x	10.9x	7.0x
5,000	5,000	1.3x	1.2x	1.4x	0.9x	7.4x	6.5x	7.5x	4.9x	13.7x	11.7x	13.6x	8.7x
6,000	6,000	1.6x	1.5x	1.7x	1.1x	8.9x	7.8x	9.0x	5.8x	16.4x	14.1x	16.4x	10.5x
7,000	7,000	1.9x	1.7x	1.9x	1.3x	10.4x	9.1x	10.5x	6.8x	19.2x	16.4x	19.1x	12.2x
8,000	8,000	2.1x	2.0x	2.2x	1.5x	11.9x	10.4x	12.0x	7.8x	21.9x	18.8x	21.8x	14.0x
9,000	9,000	2.4x	2.2x	2.5x	1.7x	13.3x	11.7x	13.4x	8.8x	24.6x	21.1x	24.6x	15.7x
10,000	10,000	2.7x	2.5x	2.8x	1.9x	14.8x	13.0x	14.9x	9.7x	27.4x	23.5x	27.3x	17.5x
11,000	11,000	2.9x	2.7x	3.0x	2.1x	16.3x	14.3x	16.4x	10.7x	30.1x	25.8x	30.0x	19.2x
12,000	12,000	3.2x	3.0x	3.3x	2.3x	17.8x	15.6x	17.9x	11.7x	32.8x	28.1x	32.8x	20.9x
13,000	13,000	3.5x	3.2x	3.6x	2.5x	19.3x	16.8x	19.4x	12.7x	35.6x	30.5x	35.5x	22.7x
14,000	14,000	3.7x	3.4x	3.9x	2.7x	20.8x	18.1x	20.9x	13.6x	38.3x	32.8x	38.2x	24.4x
15,000	15,000	4.0x	3.7x	4.1x	2.8x	22.2x	19.4x	22.4x	14.6x	41.1x	35.2x	40.9x	26.2x
16,000	16,000	4.3x	3.9x	4.4x	3.0x	23.7x	20.7x	23.9x	15.6x	43.8x	37.5x	43.7x	27.9x

Source: Morgan Stanley Research

Exhibit 22: Terminal Growth rate vs. WACC Sensitivity

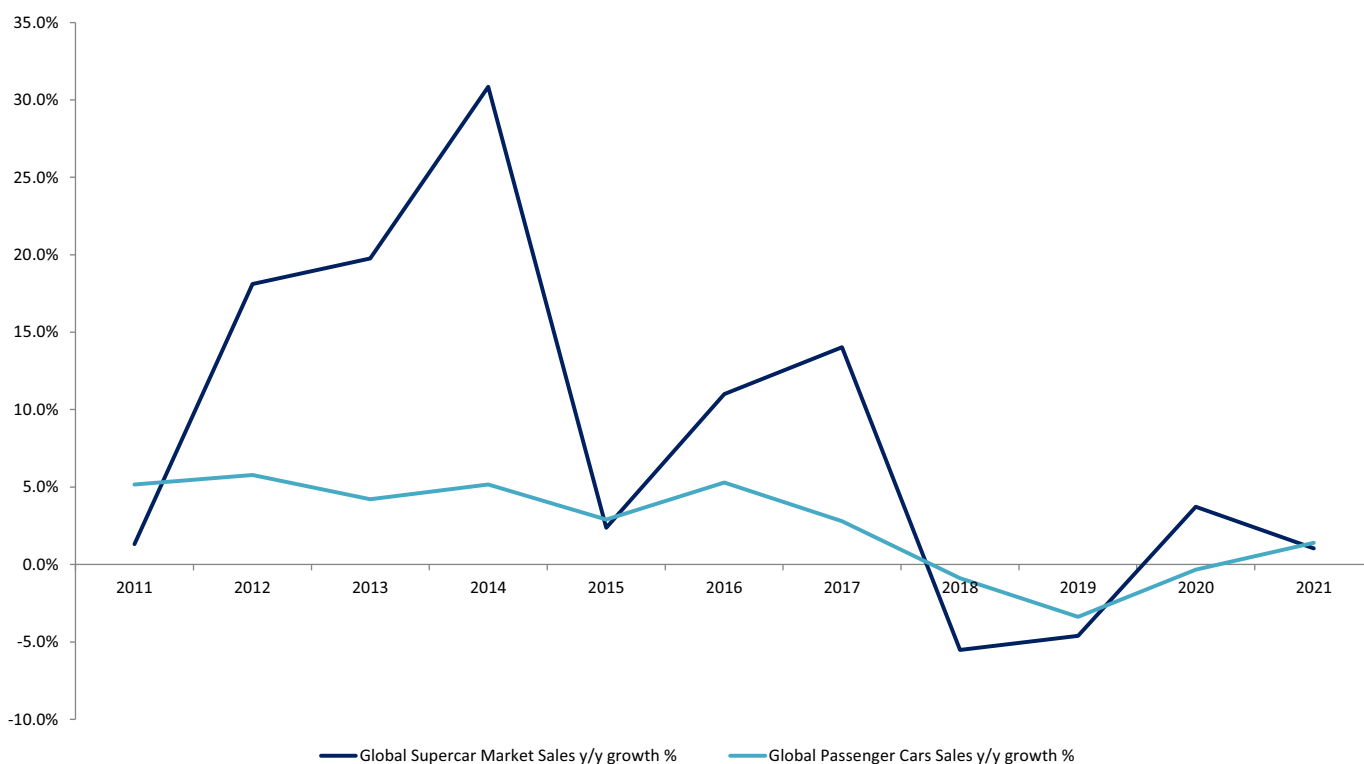
Equity Value ->		Terminal Growth Rate						
		7,042	-0.25%	0.00%	0.25%	0.50%	0.75%	1.00%
WACC	5.4%	12,052	12,469	12,926	13,430	13,989	14,611	15,309
	5.9%	10,893	11,228	11,593	11,992	12,431	12,914	13,449
	6.4%	9,913	10,187	10,483	10,805	11,155	11,537	11,957
	6.9%	9,075	9,302	9,545	9,808	10,092	10,400	10,736
	7.4%	8,351	8,540	8,743	8,960	9,193	9,445	9,718
	7.9%	7,720	7,879	8,049	8,231	8,425	8,633	8,857
	8.4%	7,165	7,300	7,444	7,597	7,760	7,934	8,120
	8.9%	6,674	6,790	6,912	7,042	7,180	7,327	7,483
	9.4%	6,236	6,336	6,441	6,553	6,670	6,795	6,927
	9.9%	5,844	5,931	6,022	6,118	6,219	6,326	6,438
	10.4%	5,492	5,567	5,646	5,729	5,816	5,908	6,005
	10.9%	5,173	5,239	5,308	5,380	5,456	5,535	5,619
	11.4%	4,883	4,941	5,001	5,065	5,131	5,200	5,273
	11.9%	4,619	4,670	4,723	4,779	4,837	4,898	4,961
12.4%	4,378	4,423	4,470	4,519	4,570	4,624	4,679	

Source: Morgan Stanley Research

Supercar Market Analysis

Ultra luxury sports cars have outperformed the broader global car market over the past 10 years. We calculate a CAGR of 8.5% from 2011 to 2021e for luxury sports cars vs global passenger unit CAGR of 2.2%. We expect the growth of supercars to ramp over the next decade, driven by supercar brands venturing into new segments (SUVs), unveil of new models and technologies (Electric vehicles, hybrids) and grow organically their unit base as some become public enterprises and run more as long term profit centers.

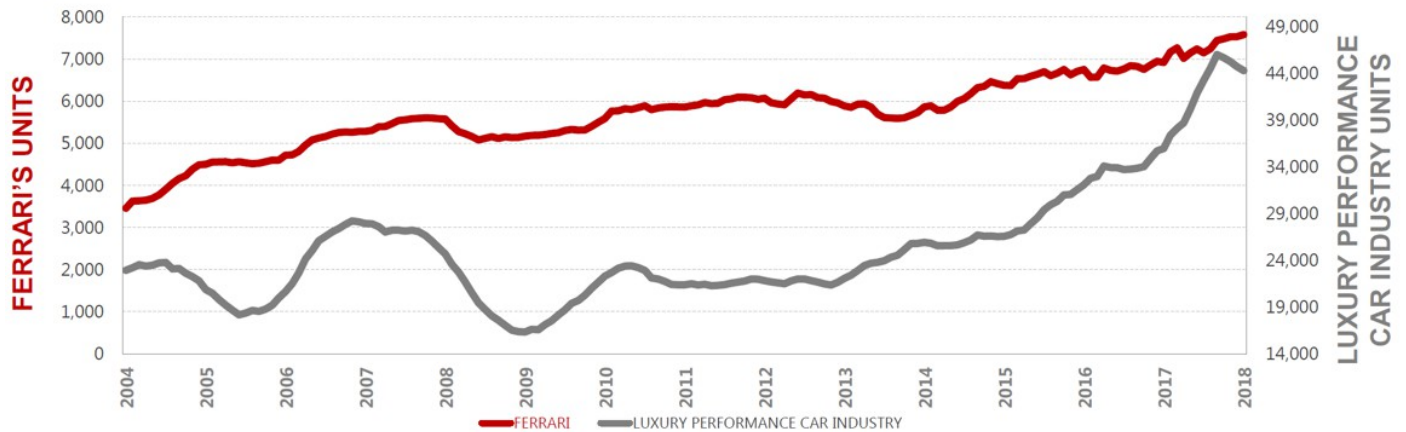
Exhibit 23: Global Supercar Growth vs Market



Source: Morgan Stanley Research (For global passenger cars), IHS (supercar forecast). To calculate the supercar market, we include total units from: Aston Martin, Bentley, Bugatti, Ferrari, Lamborghini, Maserati, McLaren, Porsche 911.

Using Ferrari's more niche definition of high performance luxury supercars, the supercar segment has grown at a CAGR of 24.7% over 14 years. Ferrari defines the high performance luxury segment as all two door GT and sports cars with power above 500hp, and retail price above €150,000. Units in this segment expanded from ~2,000 in 2004 to ~44,000 as of 2018...

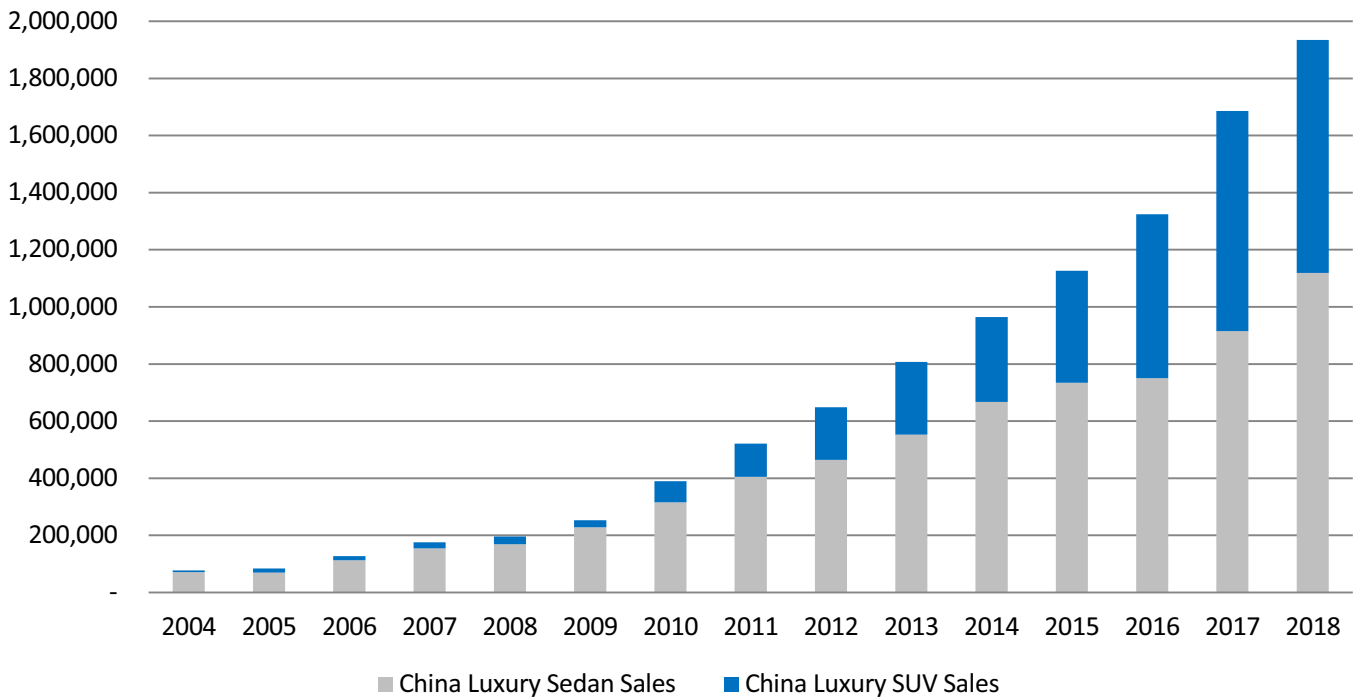
Exhibit 24: Global Ferrari Units vs Luxury High Performance Car Market Units



Source: Ferrari May 22-23, 2019 Investor Presentation.

One of the largest luxury markets in the world, China, is a market that all luxury companies wish to expand into and excel in. Ferrari ships ~10% of cars to China, and will continue to be a source of growth over the next decade. Meanwhile the luxury brand Hermes generates ~54% of revenue in Asia (does not break out China). Corvette on the other hand, sells 0 units in China. The exhibit below illustrates the enormous growth of the Luxury sedan and luxury SUV market in China from 2004 to 2018, which could be a source of growth in the future.

Exhibit 25: China Luxury Sedan/SUV Sales

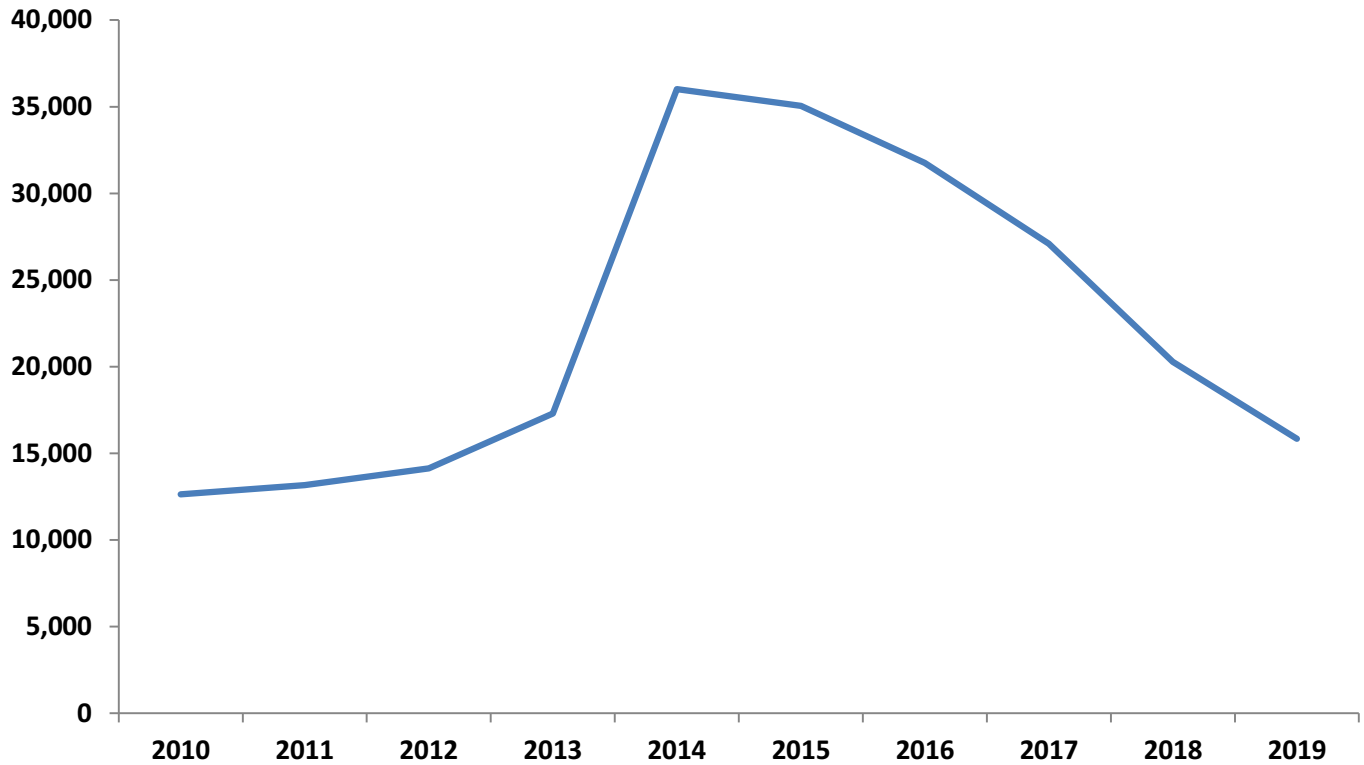


Source: CPCA, Morgan Stanley Research Note: Luxury is defined as cars >300,000 RMB

- **Revenue:** We assume Corvette units at 40k in 2020 vs. our Ferrari shipments at 10.7k and Aston Martin at ~7.8k units (based on Consensus from Visible Alpha). ASPs for Corvette is at \$82.5k, ¼ of Ferrari (\$350k) and ⅓ of Aston Martin (\$223k).

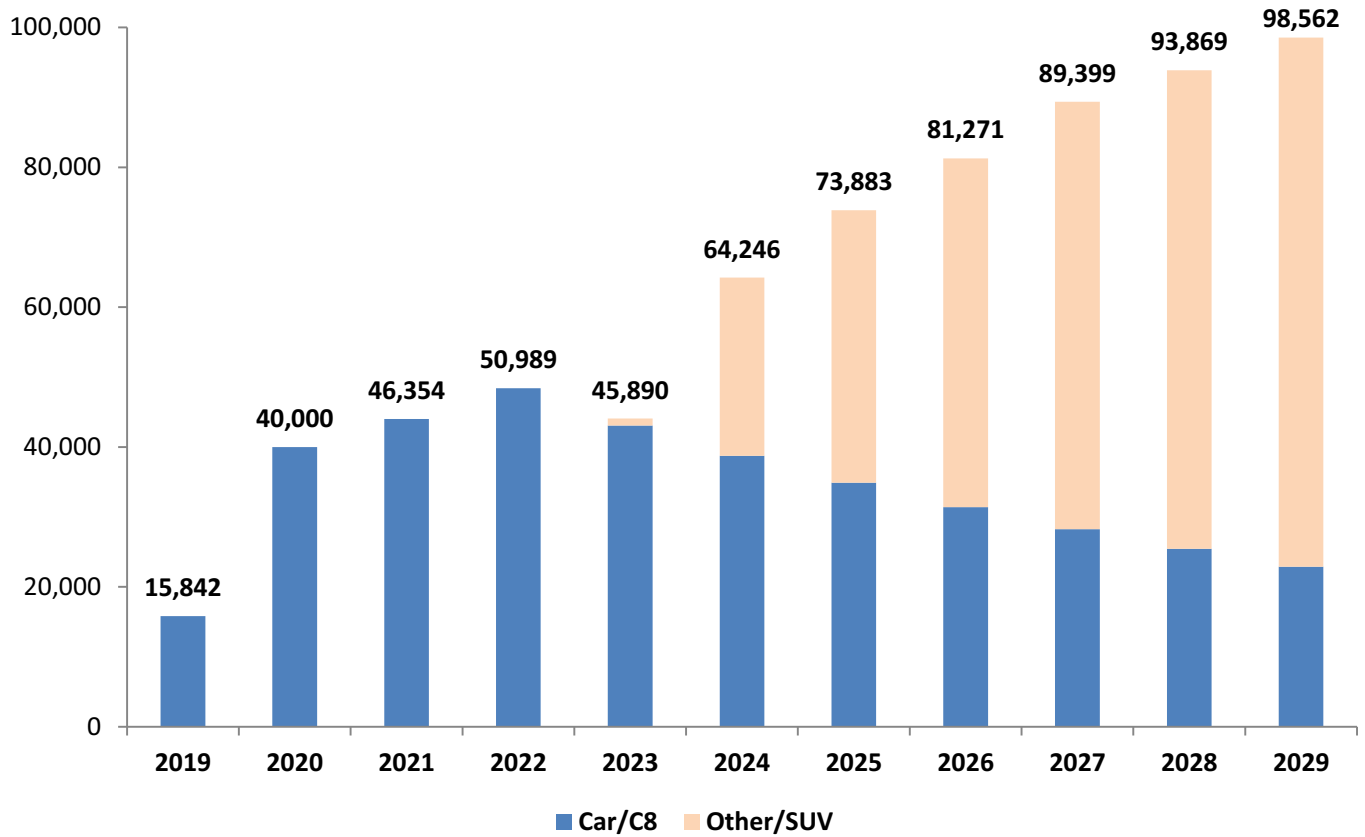
Overall revenues for Corvette are at \$3.3bn, \$4.6bn for Ferrari and \$1.8bn for Aston Martin. Compared to IHS, we are taking a much more constructive view on the Corvette brand and market, especially as we factor the potential of an SUV launch in 2023/2024 and beyond.

Exhibit 26: Corvette Units Over Time



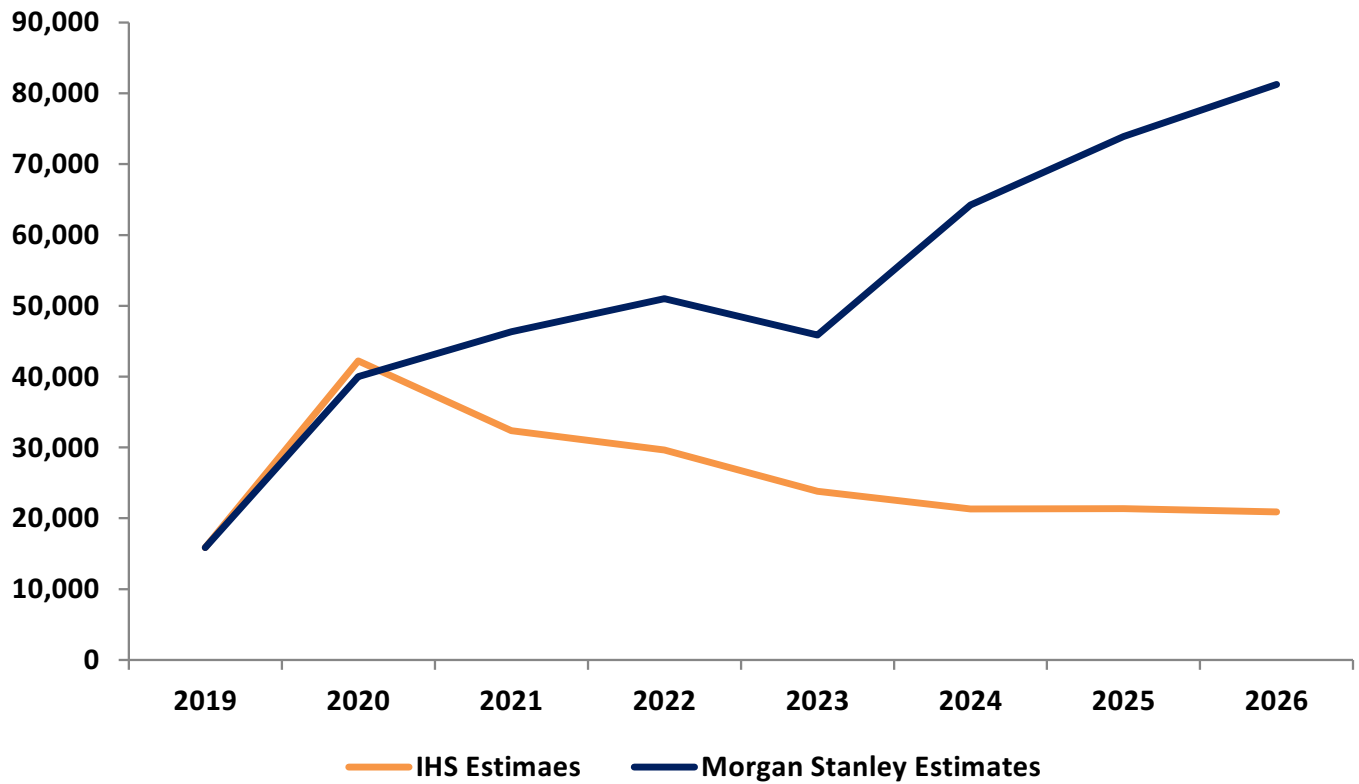
Source: GM Authority, IHS for 2019

Exhibit 27: Estimated Proportion of Unit Sales, Car vs. SUV



Source: Morgan Stanley Research from 2020 onwards, IHS for 2019.

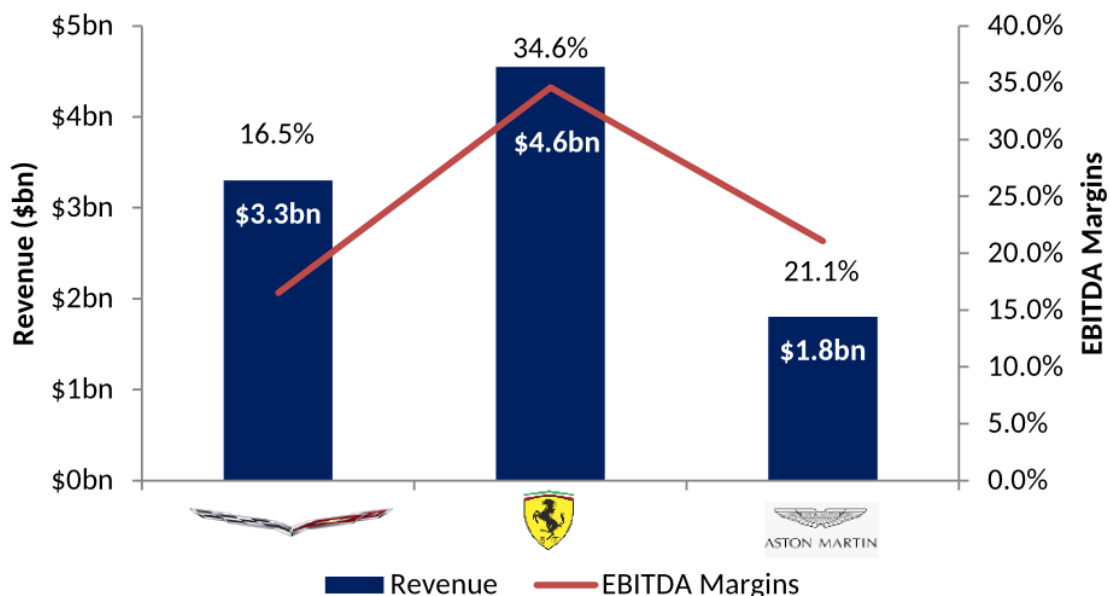
Exhibit 28: Corvette Sales Estimates - MSe vs. IHS Estimates (2019 - 2026)



Source: Morgan Stanley Research, IHS

- **EBITDA margins:** In 2020, we have Corvette EBITDA margins at 16.5%, below Ferrari's of 34.6% and Consensus assumes Aston at ~21.1%.
- **FCF:** In 2020, \$182mmm for Corvette, \$581mm for RACE and Consensus sees \$0mm of FCF for Aston Martin.

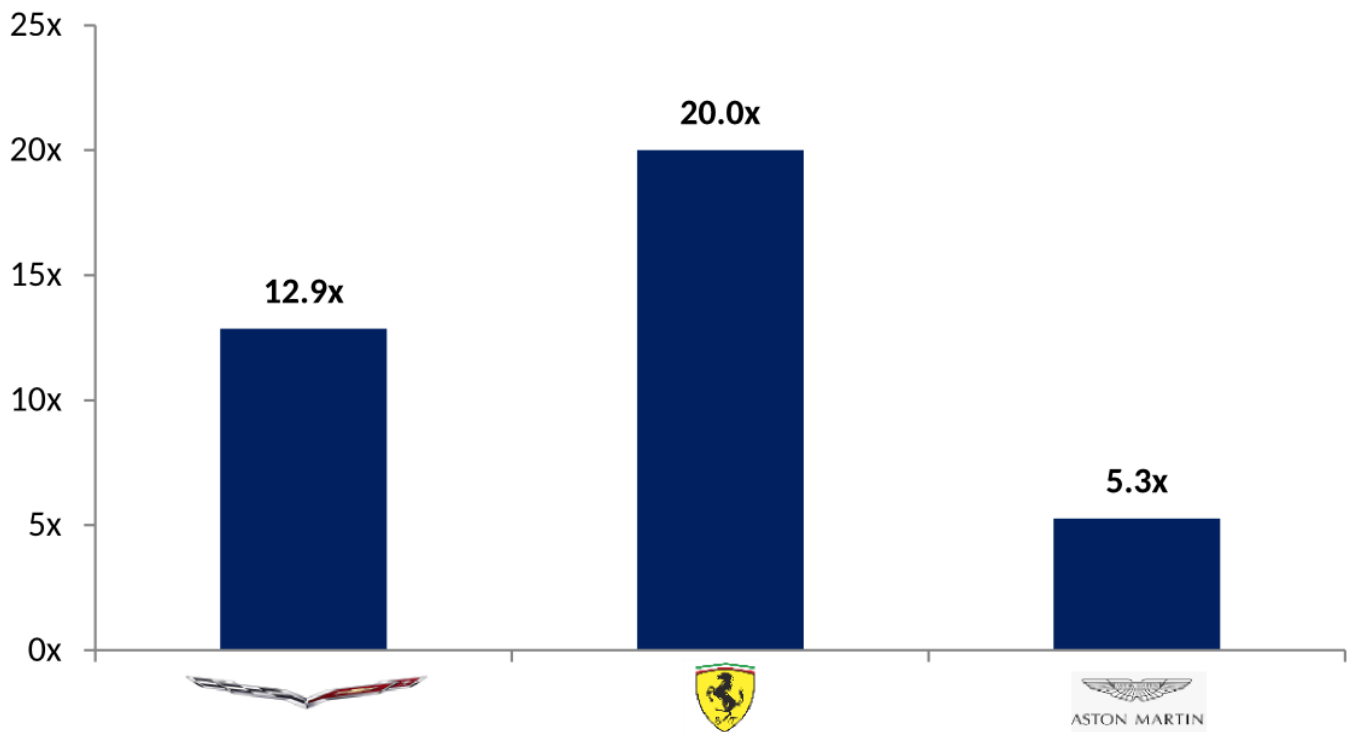
Exhibit 29: MS Estimates of Revenue & EBITDA Margins - 2020e



Source: Morgan Stanley Research for Corvette and Ferrari, Visible Alpha for Aston Martin

- Valuation Multiples:** On our valuation of the Corvette brand, this implies a 2020 EV/EBITDA of 12.9x vs RACE at 20.0x, and Aston at 5.3x. A premium to Aston may be warranted given the strength of Corvette's proposed unlevered balanced sheet, but in our view a heavy discount to Ferrari is also appropriate given the strength of the Ferrari brand, in a league of its own and unmatched in terms of exclusivity, volume backlog, margins compared to any brand of car manufacturer.

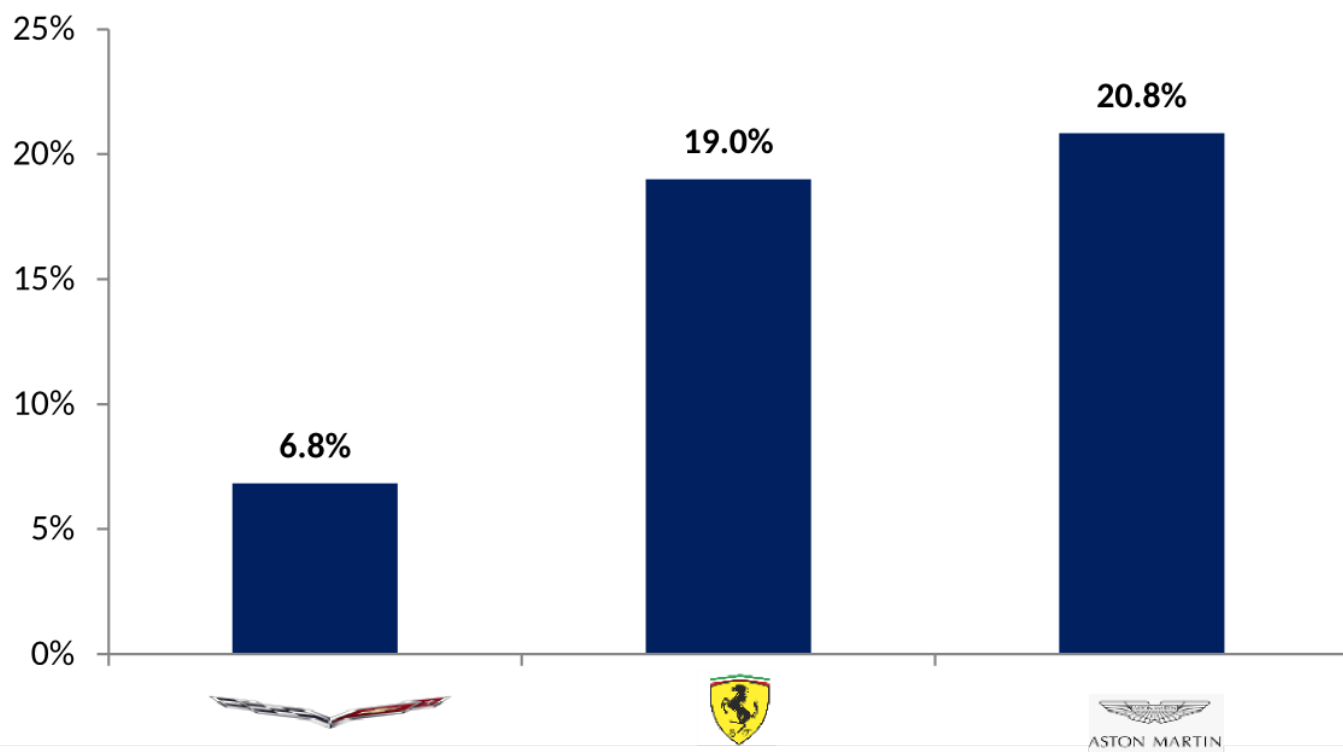
Exhibit 30: 2020e EV/EBITDA multiple



Source: Morgan Stanley Research




- Capital Intensity:** Corvette is the least capital intensive out of the group, partly due to its simple model line up. While we suspect capital expenditure investing with rise in the future, as a stand-alone brand we assume Corvette has 6.8% capex/sales vs. RACE at 19.0% and Aston at 20.8%.

Exhibit 31: Capital Intensity: FY20e Capex/Sales



Source: Morgan Stanley Research for Corvette and Ferrari, Visible Alpha for Aston Martin

Exhibit 32: Financial Comparison: Corvette vs. Ferrari vs. Aston Martin

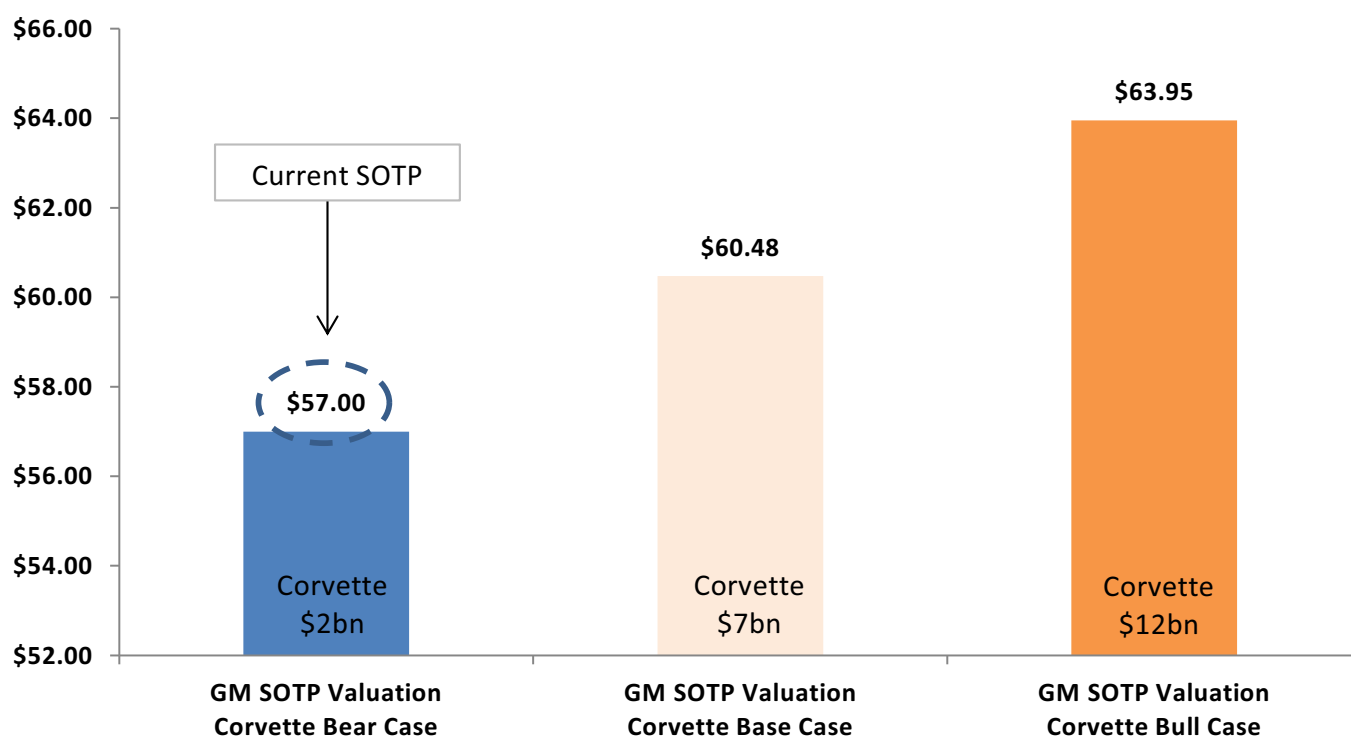
	Corvette	Ferrari	Aston Martin
			
Revenue			
Revenue (2020e)	\$3.3bn	\$4.6bn	\$1.8bn
ASPs (2020e)	\$82.5k	\$350k	\$212k
Shipments (2020e)	40,000	10,671	6,600
Profitability (2020)			
Gross Margin	25.5%	52.8%	37.7%
EBITDA (US\$mm)	545	1,575	379
EBITDA Margins	16.5%	34.6%	21.1%
EBIT (US\$mm)	380	1,106	153
EBIT Margins	11.5%	24.3%	8.5%
Net Income (US\$mm)	285	831	33
FCF (US\$mm)	182	581	0
Valuation			
Enterprise Value (\$bn)	7.0	31.5	2.0
Market Cap (\$bn)	7.0	31.0	1.1
Valuation Multiples			
2020 EV/EBITDA	12.9x	20.0x	5.3x
2020 P/E	NA	37.3x	33.8x
Balance Sheet			
Net Debt/EBITDA (FY19)	0	0.2x	2.9x
Leverage (FY19) - (Debt / Debt + BV Equity)	0%	59%	74%
Capital Intensity			
Capex/Sales (FY19)	6.8%	19.0%	20.8%

Source: Morgan Stanley Research for Corvette and Ferrari, Visible Alpha for Aston Martin

GM SOTP inc. Corvette

In our GM SOTP, which we use to get to our Bull Case on GM, we incorporate a \$2bn valuation of Corvette (\$2bn is our Corvette Bear Case using our DCF derived valuation of Corvette), which leads to a Bull Case of GM of \$57/share. The exhibit below illustrates the effect on our SOTP from a crystallization of value standpoint for Corvette. On our calculation, each \$1bn of value of Corvette is worth around \$0.70 of GM share price value.

Exhibit 33: Corvette's Valuation Bull/Bear/Base on GM SOTP



Source: Morgan Stanley Research

Below we show the effect of cash proceeds from Corvette to GM, assuming a reduction of EBITDA by \$0.8bn. We assume crystallizing value from Corvette would be accretive to GM given it would extract value for an asset trading at ~19x 2021 P/E vs GM at ~8x. All things equal while Enterprise value drops assuming a constant multiple and drop in EBITDA, we believe the market would look to buy GM as this additional cash would further strengthen its balance sheet and there would be optionality for the cash to be used for dividends or buybacks.

Exhibit 34: Pre and Post GM With Corvette Spin Out

2022e (\$bn)	GM	*GM ex Corvette
EV/EBITDA	3.05x	3.05x
EBITDA	17.0	16.2
Enterprise Value	51.9	49.5
Market Cap	55.5	60.1

Source: Morgan Stanley Research, *Assumes \$7bn of cash proceeds added to Market Cap from net cash of \$3.6bn rising by \$7.0bn, using DCF derived Base Case of Corvette.

Exhibit 35: GM SOTP

GM Sum-of-Parts Model

(\$mm except per share items)

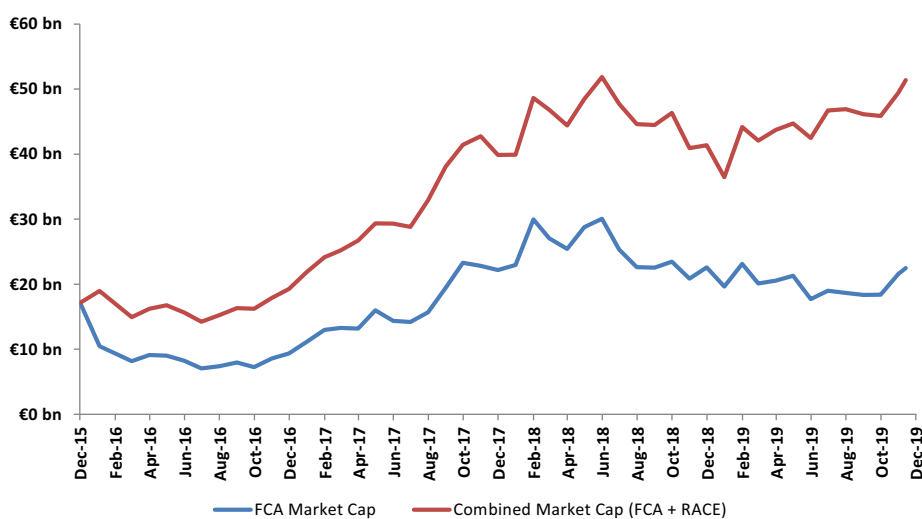
	2018e			Multiple		Value Per Share (\$)		EBITDA Margin (%)
	Units	Sales	EBITDA	Sales (%)	EBITDA (x)			
GM Evolution								
GM China (JVs)	4,030,000					8,156	5.66	
GM Professional (Pick-ups, commercial vans)	1,126,266	42,798	8,560	100%	5.0	42,798	29.68	20.0%
Corvette	30,000	1,950	293	105%	7.0	2,048	1.42	15.0%
Body-on-Frame SUVs (Suburban, Yukon, Tahoe)	283,534	17,012	4,253	100%	4.0	17,012	11.80	25.0%
GMI (ex China)	891,941	19,148	766	16%	4.0	3,064	2.12	4.0%
GM Financial		14,016	1,893			10,294	7.14	
Other (NA pass car, including elim)	1,907,133	39,943	-222	NM	NM	-4,000	-2.77	-0.6%
Total GM Evolution	8,268,874	134,868	15,542			79,371	55.04	
GM Revolution								
Connected Car (OnStar)		1,080	270	250%	10.0	2,700	1.87	25.0%
Shared Mobility (Maven, Lyft stake)		450	0			2,000	1.39	
GM Cruise LLC		50	0			9,000	6.24	
GM Cruise Minority Int Adj (Softbank 19.6% stake)						-2,250	-1.56	
GM Electric (Volt/Bolt, in-house battery)	54,769	1,917	77	100%	25.0	1,917	1.33	4.0%
Cadillac (ex China)	173,691	8,685	1,563	90%	5.0	7,816	5.42	18.0%
Total GM Revolution	228,460	12,181	1,910			21,183	14.69	15.7%
Total Company	8,497,334	147,049	17,452	68%	5.8	100,554	69.73	
						Net Cash	7,964	5.52
						NPV of NOLs	3,000	2.08
						Pension/OPEB	-15,375	-10.66
						SOTP Discount (15%)		-10.0
						Equity Value	93,143	\$ 57
						Current Price		38.50
						Premium (discount) to SOTP		-32.1%

Source: Morgan Stanley Research

FCA & Ferrari Case Study

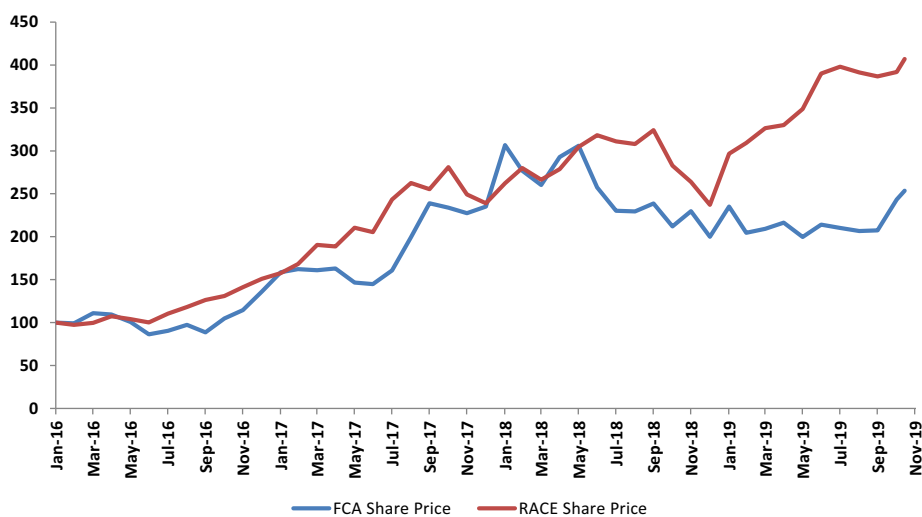
FCA spun off Ferrari on January 3, 2016. RACE's market cap at spin was ~€8.5bn and today is ~235% higher at ~€28.5bn. Meanwhile FCA's market cap in 12/1/2015 was ~€17bn and today sits only 30% higher at ~€22bn. Overall we believe it was a very successful deal as FCA was manage to successfully unlock value for FCA shareholders and subsequently allowed Ferrari to focus on a dedicated strategy that was not hindered by FCA as an enterprise.

Exhibit 36: Market Cap: FCA vs Combined FCA + RACE



Source: Thomson Reuters. Starting point 12/1/15

Exhibit 37: Log Share Price Performance Post Spin - FCA vs. Ferrari



Source: Thomson Reuters. FCA Share Price starting point at 1/4/16, after RACE spin.

GM Financial Statements

Exhibit 38: General Motors Income Statement

Income Statement	FY 2017	FY 2018	1Q19	2Q19	3Q19	4Q19E	FY 2019E	FY 2020E	FY 2021E	FY 2022E
Group Revenue	145,621	147,049	34,878	36,060	35,473	35,699	142,110	147,252	148,556	149,891
<i>Growth</i>	-10.4%	1.0%	-3.4%	-1.9%	-0.9%	-7.0%	-3.4%	3.6%	0.9%	0.9%
Cost of Sales	114,146	115,438	27,565	28,058	27,787	31,208	114,618	116,751	118,354	119,937
Gross Profit	31,475	31,611	7,313	8,002	7,686	4,491	27,492	30,501	30,202	29,954
<i>Gross Margin</i>	21.6%	21.5%	21.0%	22.2%	21.7%	12.6%	19.3%	20.7%	20.3%	20.0%
Selling General & Admin Exp.	9,575	9,650	2,099	2,102	2,008	2,285	8,494	9,277	9,359	9,443
<i>SG&A / Sales</i>	6.6%	6.6%	6.0%	5.8%	5.7%	6.4%	6.0%	6.3%	6.3%	6.3%
Other (Income) Expense	11,128	12,298	3,306	3,144	2,987	2,750	12,187	12,309	12,432	12,556
Operating Income	10,772	9,663	1,908	2,756	2,691	(544)	6,811	8,915	8,411	7,955
<i>Operating Margin</i>	7.4%	6.6%	5.5%	7.6%	7.6%	-1.5%	4.8%	6.1%	5.7%	5.3%
Adjusted EBIT (Non-US GAAP)	12,886	11,783	2,310	3,012	2,966	(223)	8,065	9,974	9,384	8,845
<i>Adjusted EBIT Margin</i>	8.8%	8.0%	6.6%	8.4%	8.4%	-0.6%	5.7%	6.8%	6.3%	5.9%
Interest Expense	572	647	181	195	206	161	743	767	767	767
<i>Interest Rate</i>	5.1%	4.8%	4.8%	5.0%	5.4%	4.2%	5.3%	5.0%	5.0%	5.0%
Interest income and other non-operating income, net	370	335	98	106	129	118	451	442	498	503
<i>Interest Rate</i>	1.9%	1.5%	1.8%	2.2%	2.6%	2.0%	2.0%	2.0%	2.0%	2.0%
Pre-tax Income	10,570	9,351	1,825	2,667	2,614	(587)	6,519	8,590	8,142	7,691
Income Tax	2,555	2,001	169	533	364	(100)	966	1,890	1,791	1,692
<i>Effective Tax Rate</i>	24.2%	21.4%	9.3%	20.0%	13.9%	17.0%	14.8%	22.0%	22.0%	22.0%
Equity income, net of tax	2,132	2,163	414	271	315	327	1,327	1,084	998	915
Net Income	10,147	9,513	2,070	2,405	2,565	(161)	6,879	7,784	7,348	6,914
Net earnings to noncontrolling interest	18	43	12	15	40	6	73	25	25	25
Net Income attributable to stockholders	10,129	9,470	2,058	2,390	2,525	(167)	6,806	7,759	7,323	6,889
Extraordinary Items (Gains)	9,545	1,428	35	(19)	174	2,000	2,190	-	-	-
Reported Net Income	584	8,042	2,023	2,409	2,351	(2,167)	4,616	7,759	7,323	6,889
Dividends on Preferred Stock (Series A and B Convertible)	-	98	38	37	38	-	113	113	113	113
Allocation of Undistributed Earnings to Preferred (Basic)	-	-	-	-	-	-	-	-	-	-
Net income attributable to common stockholders	584	7,944	1,985	2,372	2,313	(2,167)	4,503	7,646	7,210	6,776
Period End Basic Shares O/S	1,416	1,464	1,417	1,420	1,428	1,428	1,428	1,428	1,428	1,428
Wavg Basics Shares O/S	1,471	1,412	1,441	1,420	1,442	1,428	1,433	1,428	1,428	1,428
Wavg Diluted Shares O/S	1,492	1,431	1,436	1,438	1,442	1,442	1,440	1,442	1,442	1,442
Adj. for Dil. Effects of Series B	-	-	-	-	-	-	-	-	-	-
Basic Reported EPS	\$0.40	\$5.63	\$1.38	\$1.67	\$1.60	(\$1.52)	\$3.14	\$5.35	\$5.05	\$4.75
Diluted EPS Reported	\$0.39	\$5.55	\$1.38	\$1.65	\$1.60	(\$1.50)	\$3.13	\$5.30	\$5.00	\$4.70
Diluted EPS (ex Extras)	\$6.79	\$6.55	\$1.41	\$1.64	\$1.72	(\$0.12)	\$4.65	\$5.30	\$5.00	\$4.70

Source: Morgan Stanley Research

Exhibit 39: General Motors Balance Sheet

Balance Sheet	FY 2017	FY 2018	1Q19	2Q19	3Q19	4Q19E	FY 2019E	FY 2020E	FY 2021E	FY 2022E
Automotive										
Cash & Cash Equivalents	11,247	15,961	11,890	13,478	16,833	15,377	15,377	18,151	18,443	18,963
Marketable Securities	8,313	5,966	6,021	7,049	6,725	6,725	6,725	6,725	6,725	6,725
Restricted cash	-	-	-	-	-	-	-	-	-	-
Accounts Receivable	7,358	5,119	10,968	9,285	5,827	6,260	6,260	7,262	7,733	8,213
Inventories	10,663	9,816	11,108	11,447	11,797	10,260	10,260	10,556	11,349	11,501
Assets held for sale	-	-	-	-	-	-	-	-	-	-
Equipment on operating leases, net	1,106	247	-	-	-	-	-	-	-	-
Other current assets and deferred income taxes	1,396	1,381	1,930	3,044	2,755	2,755	2,755	2,755	2,755	2,755
Total Current Assets	40,083	38,490	41,917	44,303	43,937	41,377	41,377	45,448	47,005	48,157
Equity in net assets of nonconsolidated affiliates	7,886	7,860	6,837	6,894	7,115	7,176	7,176	7,199	7,254	7,300
Assets held for sale	-	-	-	-	-	-	-	-	-	-
Property, net	35,994	38,507	38,087	37,949	37,739	38,014	38,014	40,031	41,797	43,353
Goodwill	-	-	-	-	-	-	-	-	-	-
Goodwill and intangible assets, net	4,482	4,223	4,161	4,099	4,055	3,883	3,883	3,223	2,675	2,220
Restricted cash and marketable securities	-	-	-	-	-	-	-	-	-	-
Other Assets	27,229	28,885	31,461	30,379	30,155	29,155	29,155	28,355	27,755	27,255
Total Automotive Assets	115,674	117,965	122,463	123,624	123,001	119,605	119,605	124,255	126,485	128,285
GM Financial										
Finance Receivables	42,535	51,933	53,826	54,189	53,760	56,871	56,871	64,255	71,451	78,447
Cash and Restricted Cash	4,265	4,883	5,286	3,596	3,218	3,218	3,218	3,218	3,218	3,218
Goodwill and intangible assets, net	1,367	1,356	1,357	1,358	1,353	1,353	1,353	1,353	1,353	1,353
Other Assets	48,641	51,202	50,200	50,970	50,197	53,575	53,575	57,102	60,771	64,597
Total GM Financial Assets	96,808	109,374	110,669	110,113	108,528	115,018	115,018	125,928	136,794	147,615
Total Assets	212,482	227,339	233,132	233,737	231,529	234,623	234,623	250,183	263,279	275,900
Automotive										
Accounts Payable	23,295	21,590	23,910	22,060	20,844	19,836	19,836	24,950	24,968	24,973
Short Term Debt	2,515	935	1,999	2,490	2,890	2,890	2,890	2,890	2,890	2,890
Liabilities held for sale	-	-	-	-	-	-	-	-	-	-
Accrued expenses	22,544	24,064	23,670	24,510	24,001	24,967	24,967	22,183	22,487	22,788
Other current liabilities	-	-	-	-	-	-	-	-	-	-
Total Current Liabilities	48,354	46,589	49,579	49,060	47,735	47,693	47,693	50,022	50,345	50,651
Long Term Debt	10,987	13,028	12,954	12,958	12,448	12,448	12,448	12,448	12,448	12,448
Liabilities held for sale	-	-	-	-	-	-	-	-	-	-
Postretirement benefits other than pensions	5,998	5,370	5,363	5,357	5,301	5,301	5,301	5,301	5,301	5,301
Pension Liability	13,743	11,535	11,096	10,788	10,220	9,920	9,920	8,220	6,506	4,778
Other Long-Term Liabilities and deferred income taxes	10,689	10,202	10,722	10,623	11,110	11,110	11,110	11,110	11,110	11,110
Total Automotive Liabilities	89,771	86,724	89,714	88,786	86,814	86,472	86,472	87,101	85,710	84,288
GM Financial										
Debt (Short Term and Long Term)	80,717	90,988	92,781	91,114	89,128	94,220	94,220	97,003	99,786	102,569
Credit Facilities	-	-	-	-	-	(448)	(448)	(875)	(1,311)	(1,755)
Other Liabilities	5,794	6,850	5,999	6,748	6,818	6,415	6,415	5,819	5,223	4,627
Total GM Financial Liabilities	86,511	97,838	98,780	97,862	95,946	100,187	100,187	101,947	103,698	105,441
Total Liabilities	176,282	184,562	188,494	186,648	182,760	186,659	186,659	189,048	189,408	189,729
Series A Perpetual Preferred	-	-	-	-	-	-	-	-	-	-
Mandatory Convertible Preferred	-	-	-	-	-	-	-	-	-	-
Stockholders Equity	35,001	38,860	40,765	42,816	44,553	43,741	43,741	56,888	69,598	81,875
Common stock	14	14	14	14	14	14	14	14	14	14
Capital surplus	25,371	25,563	25,661	25,765	25,927	25,927	25,927	25,927	25,927	25,927
Retained Earnings (Accumulated Deficit)	17,627	22,322	23,939	25,807	27,610	26,798	26,798	39,945	52,655	64,932
Accumulated other comprehensive income	(8,011)	(9,039)	(8,849)	(8,770)	(8,998)	(8,998)	(8,998)	(8,998)	(8,998)	(8,998)
Noncontrolling interests	1,199	3,917	3,873	4,273	4,216	4,222	4,222	4,247	4,272	4,297
Total Liabilities & Shareholders' Equity	212,482	227,339	233,132	233,737	231,529	234,623	234,623	250,183	263,279	275,900
<i>Check</i>	-	-	-	-	-	-	-	-	-	-

Source: Morgan Stanley Research

Exhibit 40: General Motors Cash Flow Statement

Cash Flow	FY 2017	FY 2018	1Q19	2Q19	3Q19	4Q19E	FY 2019E	FY 2020E	FY 2021E	FY 2022E
Cash from Operations										
Automotive										
Net Income (reported)	(833)	6,496	1,872	1,993	1,793	(2,509)	3,149	6,314	5,914	5,515
Depreciation	4,889	5,392	2,038	1,382	1,303	1,510	6,232	6,082	6,405	6,687
Amortization	799	746	179	177	174	172	703	660	548	455
Pension Contributions & OPEB Payments	(1,636)	(2,069)	(291)	(279)	(219)	(200)	(989)	(1,000)	(1,000)	(1,000)
Net Pension & OPEB Expense	(935)	(1,281)	(149)	(157)	(46)	(100)	(452)	(700)	(714)	(728)
Undistributed earnings of nonconsolidated affiliates	41	42	(368)	711	27	(61)	309	(23)	(55)	(47)
Others, Deferred Taxes	12,082	(205)	(238)	139	(163)	1,000	738	800	600	500
Changes in working capital	(571)	(1,237)	(5,267)	(1,039)	1,674	1,062	(3,570)	1,032	(942)	(326)
Net Cash From Operations - Automotive	13,836	7,884	(2,224)	2,927	4,543	874	6,120	13,165	10,756	11,057
GM Financial										
Net Income-GM Financial	1,163	1,579	273	410	518	348	1,549	1,470	1,435	1,399
Adjustments to reconcile income to net cash	5,519	7,595	1,919	1,915	1,946	1,900	7,680	7,680	7,680	7,680
Change in operating assets and liabilities	72	(1,802)	(49)	(176)	(454)	-	(679)	-	-	-
Net Cash from Operations-GM Financial	6,754	7,372	2,143	2,149	2,010	2,248	8,550	9,150	9,115	9,079
Net Cash From Operations-Total	20,590	15,256	(81)	5,076	6,553	3,122	14,670	22,316	19,870	20,135
Cash from Investing										
Automotive										
Expenditures for property	(8,359)	(8,701)	(1,997)	(1,454)	(1,367)	(1,785)	(6,603)	(8,099)	(8,171)	(8,244)
Investments in marketable securities	3,504	2,288	1	(970)	426	-	(543)	-	-	-
Investment in companies, net of cash acquired	(41)	-	-	-	-	-	-	-	-	-
Operating leases, liquidations	-	-	-	-	-	-	-	-	-	-
Change in restricted cash	-	-	-	-	-	-	-	-	-	-
Others	(3,434)	92	(3)	106	48	-	151	-	-	-
Net Cash from Investing - Automotive	(8,330)	(6,321)	(1,999)	(2,318)	(893)	(1,785)	(6,995)	(8,099)	(8,171)	(8,244)
GM Financial										
Cash on Hand at Acquisition	-	-	-	-	-	-	-	-	-	-
Purchase of Receivables	(22,108)	(25,671)	(10,979)	(10,966)	(9,571)	(8,541)	(40,057)	(40,859)	(41,676)	(42,509)
Principal collections and recoveries on receivables	12,854	17,048	9,266	8,886	8,918	5,430	32,500	33,475	34,479	35,514
Other	(12,604)	(5,985)	1	(31)	(5)	-	(35)	-	-	-
Net Cash from Investing-GM Financial	(21,858)	(14,608)	(1,712)	(2,111)	(658)	(3,111)	(7,592)	(7,383)	(7,196)	(6,996)
<i>Reclassification</i>	-	-	-	-	-	-	-	-	-	-
Net Cash from Investing-Total	(30,188)	(20,929)	(3,711)	(4,429)	(1,551)	(4,896)	(14,587)	(15,482)	(15,367)	(15,240)
Cash from Financing										
Automotive										
Net decrease in short-term debt	(35)	62	480	213	36	-	729	-	-	-
Proceeds from funding by EDC	-	-	-	-	-	-	-	-	-	-
Proceeds from issuance of long-term debt	3,824	4,908	683	303	173	-	1,159	-	-	-
Payments on debt owed to UST and EDC	-	-	-	-	-	-	-	-	-	-
Payments on long-term debt	(1,123)	(4,482)	(95)	(127)	(225)	-	(447)	-	-	-
Dividends paid to preferred	-	-	-	-	-	-	-	(113)	(113)	(113)
Dividends paid to common	(2,233)	(1,808)	(580)	(558)	(563)	(545)	(2,246)	(2,180)	(2,180)	(2,180)
Net issuance/repurchase of stock	(4,492)	2,180	-	414	49	-	463	-	-	-
Other	(291)	(494)	(202)	16	111	-	(75)	-	-	-
Net Cash from Financing - Automotive	(4,350)	366	286	261	(419)	(545)	(417)	(2,293)	(2,293)	(2,293)
GM Financial										
Net Change in Credit Facilities	(105)	1,124	479	(479)	29	(448)	(419)	(427)	(436)	(444)
Issuance of Debt	48,363	38,893	11,074	8,451	7,151	10,800	37,476	37,476	37,476	37,476
Payments of Debt	(32,469)	(28,841)	(10,682)	(9,720)	(8,583)	(5,708)	(34,693)	(34,693)	(34,693)	(34,693)
Other	499	(88)	(80)	198	(311)	(403)	(596)	(596)	(596)	(596)
Net Cash from Financing-GM Financial	16,288	11,088	791	(1,550)	(1,714)	4,241	1,768	1,760	1,751	1,743
<i>Reclassification</i>	-	-	-	-	-	-	-	-	-	-
Net Cash from Financing-Total	11,938	11,454	1,077	(1,289)	(2,133)	3,696	1,351	(533)	(541)	(550)
Effect of Exchange Rate on Cash (GM Financial)	81	(68)	8	22	(50)	-	(20)	-	-	-
GM Financial Transactions with Automotive	-	-	-	-	-	-	-	-	-	-
Effect of Exchange Rate on Cash (Automotive)	267	(231)	(8)	28	(108)	-	(88)	-	-	-
Change in Cash - Automotive	1,423	1,698	(3,945)	898	3,123	(1,456)	(1,380)	2,774	292	520
Cash and cash equivalents reclassified as assets held for sale	-	-	-	-	-	-	-	-	-	-
Automotive Transactions with GM Financial	-	-	-	-	-	-	-	-	-	-
GM Financial Change in Cash	1,184	3,852	1,222	(1,512)	(362)	3,378	2,726	3,527	3,669	3,826
<i>Check</i>	-	-	-	-	-	-	-	-	-	-

Source: Morgan Stanley Research

Global OEMs Comps

Exhibit 41: Global OEM Comps

Company	Currency	Price at 13-Nov	MS Price Target	Upside to PT (%)	MS Rating	Market Cap		MS EPS		Consensus EPS		Dividend Yield	P / E		EV / EBITDA ⁹		EV / Sales ¹⁰		P / B		
						LC	US\$	2019e	2020e	2019e	2020e		2019e	2020e	2019e	2020e	2019e	2020e	2019e	2020e	
Europe¹¹																					
Volkswagen	EUR	182.36	170.00	(7%)	EW	91.6	100.8	27.83	26.68	27.98	29.37	2.7%	6.6x	6.8x	2.0x	1.9x	0.3x	0.3x	0.7x	0.7x	
Daimler	EUR	53.80	62.00	15%	OW	57.8	63.6	5.97	5.32	4.47	6.25	6.0%	9.0x	10.1x	3.2x	3.1x	0.3x	0.3x	0.7x	0.7x	
BMW	EUR	74.78	75.00	0%	OW	45.2	49.7	9.26	8.96	8.06	9.41	4.7%	8.1x	8.3x	2.5x	2.5x	0.3x	0.3x	0.9x	0.8x	
Renault	EUR	45.69	62.00	36%	OW	13.5	14.9	8.63	8.30	7.21	9.06	7.8%	5.3x	5.5x	0.5x	0.5x	0.1x	0.0x	0.4x	0.4x	
PSA Peugeot	EUR	24.31		++	NA	++	22.0	24.3	3.79	3.59	3.75	4.0%	3.2x	6.4x	6.8x	1.7x	1.7x	0.2x	0.2x	1.2x	1.1x
Europe Weighted Average													4.3%	7.4x	7.9x	2.3x	2.2x	0.3x	0.3x	0.8x	0.7x
North America																					
General Motors	USD	38.59	46.00	19%	OW	55.1	55.1	4.65	5.30	4.81	6.42	3.9%	8.3x	7.3x	3.0x	2.7x	0.4x	0.3x	1.2x	1.0x	
Ford Motor	USD	9.04	12.00	33%	OW	35.8	35.8	1.25	1.20	1.23	1.29	6.6%	7.2x	7.6x	2.4x	2.2x	0.2x	0.2x	1.0x	1.0x	
FCA	EUR	14.68		++	NA	++	22.8	25.0	2.75	2.77	2.60	2.75	4.4%	5.3x	5.3x	1.7x	1.3x	0.2x	0.1x	0.8x	0.7x
North America Weighted Average													4.9%	7.3x	6.9x	2.5x	2.3x	0.3x	0.3x	1.1x	0.9x
China																					
SAIC Motor	CNY	23.07	30.00	30%	OW	269.4	38.5	3.08	3.22	2.61	2.84	5.5%	7.5x	7.2x	6.9x	6.1x	0.2x	0.2x	1.1x	1.0x	
Geely	HKD	14.62	12.50	(15%)	EW	133.7	17.1	1.01	1.07	1.03	1.20	2.4%	14.5x	13.6x	7.6x	6.6x	1.1x	1.0x	2.3x	2.0x	
Dongfeng	HKD	7.77	11.00	42%	OW	62.0	8.6	1.75	1.77	1.60	1.66	5.0%	4.4x	4.4x	2.2x	1.5x	0.5x	0.3x	0.5x	0.4x	
Brilliance	HKD	8.39	12.00	43%	OW	47.3	5.4	1.32	1.39	1.34	1.51	1.3%	6.4x	6.0x	6.2x	5.8x	11.1x	11.2x	1.0x	0.8x	
BAIC Motor	HKD	4.75	6.50	37%	OW	38.1	4.9	0.44	0.51	0.57	0.64	4.5%	10.8x	9.4x	1.4x	1.2x	0.2x	0.2x	0.7x	0.7x	
Sinotruk	HKD	13.46	10.00	(26%)	EW	37.2	4.7	1.38	1.17	1.54	1.57	4.8%	9.8x	11.5x	3.8x	4.4x	0.4x	0.5x	1.2x	1.1x	
BYD	HKD	38.10	28.00	(27%)	EW	34.9	4.5	0.85	0.77	0.74	0.92	0.6%	45.0x	49.4x	9.9x	11.0x	1.3x	1.2x	1.7x	1.6x	
Weichai Power	HKD	13.40	13.00	(3%)	EW	26.0	3.3	1.18	1.07	1.17	1.21	3.6%	11.3x	12.6x	4.6x	4.4x	0.6x	0.6x	2.1x	1.9x	
Guangzhou	HKD	8.23	10.00	22%	OW	25.5	3.3	1.42	1.56	0.85	0.95	4.5%	5.8x	5.3x	21.8x	16.4x	1.2x	1.1x	0.9x	0.9x	
Great Wall	HKD	6.30	8.00	27%	OW	19.5	2.5	0.55	0.64	0.48	0.54	5.3%	11.4x	9.8x	10.3x	9.8x	1.0x	0.9x	0.9x	0.9x	
Zhengzhou Yutong Bus Co	CNY	14.77	12.50	(15%)	EW	32.7	4.7	0.99	1.01	1.05	1.15	3.4%	14.9x	14.6x	8.7x	8.1x	1.0x	0.9x	1.8x	1.6x	
Anhui Jiahua	CNY	4.85	5.00	3%	EW	9.2	1.3	0.75	1.08	0.08	0.21	0.0%	6.4x	4.5x	1.8x	0.8x	0.1x	0.1x	0.6x	0.6x	
FAW Car Company	CNY	9.30	7.00	(25%)	EW	15.1	2.2	0.15	0.33	0.15	0.33	0.3%	62.8x	28.0x	12.1x	9.0x	0.5x	0.5x	1.8x	1.7x	
Chongqing Changan	HKD	3.45	6.00	74%	OW	3.1	0.4	0.85	0.91	0.05	0.55	0.6%	4.0x	3.8x	2.1x	1.3x	0.2x	0.1x	0.3x	0.3x	
China Weighted Average													4.0%	11.9x	11.1x	6.9x	6.1x	1.1x	1.1x	1.3x	1.2x
Japan																					
Suzuki Motor	JPY	5,072.0	4,700.0	(7%)	OW	2,489.8	22.8	319.61	392.28	346.51	398.72	1.5%	15.9x	12.9x	4.7x	4.1x	0.6x	0.5x	1.6x	1.4x	
Honda Motor	JPY	3,209.0		++	NA	++	5,810.7	53.3	363.63	388.45	362.95	401.05	3.5%	8.8x	8.3x	2.9x	2.7x	0.2x	0.2x	0.6x	0.6x
Mitsubishi Motors	JPY	504.0	410.0	(19%)	EW	750.8	6.9	28.69	37.25	36.67	43.18	4.0%	17.6x	13.5x	4.6x	4.4x	0.2x	0.2x	0.8x	0.8x	
Hino Motors	JPY	1,067.0	810.0	(24%)	EW	612.9	5.6	72.68	89.94	85.77	101.14	2.6%	14.7x	11.9x	6.4x	5.6x	0.4x	0.4x	1.1x	1.0x	
Mazda Motor	JPY	1,000.0	710.0	(29%)	EW	631.6	5.8	66.68	65.51	86.00	100.67	3.5%	15.0x	15.3x	3.5x	3.6x	0.2x	0.2x	0.5x	0.5x	
Nissan Motor	JPY	710.9	570.0	(20%)	EW	3,000.5	27.5	44.58	70.75	33.44	71.79	5.4%	15.9x	10.0x	3.1x	2.1x	0.2x	0.1x	0.5x	0.5x	
Isuzu Motors	JPY	1,338.5	1,160.0	(13%)	EW	1,135.2	10.4	115.15	128.96	134.06	146.33	2.8%	11.6x	10.4x	4.3x	4.0x	0.4x	0.4x	1.0x	0.9x	
Toyota Motor	JPY	7,889.0	5,800.0	(26%)	EW	25,732.3	236.1	742.89	729.21	795.27	830.52	2.8%	10.6x	10.8x	5.8x	5.9x	0.7x	0.7x	1.0x	1.0x	
Subaru Corp	JPY	3,042.0	2,200.0	(28%)	EW	627.3	5.8	275.96	274.03	506.00	538.00	4.7%	11.0x	11.1x	4.6x	4.4x	0.5x	0.5x	1.4x	1.3x	
Japan Weighted Average													3.1%	11.4x	10.7x	5.0x	4.9x	0.5x	0.6x	1.0x	0.9x
South Korea																					
Hyundai Motor	KRW	124,500.00	140,000.00	12%	EW	26,626.4	22.8	16,133.31	16,885.34	12,431.01	16,312.40	3.2%	7.7x	7.4x	2.6x	2.0x	0.2x	0.1x	0.4x	0.4x	
Kia Motors	KRW	42,800.00	45,000.00	5%	EW	17,365.6	14.9	5,069.39	5,078.77	5,050.36	5,643.83	2.1%	8.4x	8.4x	5.6x	5.1x	0.4x	0.4x	0.6x	0.6x	
South Korea Weighted Average													2.8%	8.0x	7.8x	3.8x	3.2x	0.3x	0.2x	0.5x	0.4x
India¹²																					
Maruti Suzuki	INR	7,155.7	8,205.0	15%	OW	2,169.2	30.3	206.0	308.8	207.7	264.5	1.1%	34.7x	23.2x	20.3x	13.8x	2.1x	1.8x	4.3x	3.8x	
Bajaj Auto	INR	3,204.6	3,039.0	(5%)	EW	929.3	13.0	176.6	190.4	167.8	181.1	1.9%	18.2x	16.8x	14.6x	13.3x	2.4x	2.0x	3.9x	3.5x	
Hero MotoCorp	INR	2,588.6	2,143.0	(17%)	EW	518.7	7.2	163.0	166.4	169.2	178.6	3.4%	15.9x	15.6x	10.1x	9.4x	1.4x	1.2x	3.7x	3.3x	
Tata Motors	INR	170.6	155.0	(9%)	EW	494.0	6.9	11.7	16.8	5.4	16.3	NA	31.3x	10.5x	3.4x	2.9x	0.4x	0.4x	0.9x	0.8x	
Ashok Leyland	INR	80.6	111.0	38%	OW	237.2	3.3	4.7	5.3	4.1	4.4	3.8%	17.3x	15.1x	8.3x	7.0x	0.8x	0.7x	2.5x	2.2x	
Mahindra & Mahindra	INR	574.8	672.0	17%	OW	686.6	9.6	45.2	47.9	37.0	37.4	1.5%	12.7x	12.0x	11.8x	10.3x	1.3x	1.1x	2.0x	1.7x	
TVS Motor	INR	459.8	326.0	(29%)	EW	219.2	3.1	15.1	16.6	15.4	17.5	0.8%	30.5x	27.8x	14.9x	13.4x	1.3x	1.1x	5.5x	4.8x	
India Weighted Average													1.7%	25.8x	18.5x	14.8x	11.5x	1.7x	1.5x	3.5x	3.1x
Global Weighted Average													3.5%	11.0x	10.1x	5.0x	4.5x	0.6x	0.6x	1.1x	1.0x

Source: Thomson Reuters, Morgan Stanley Research

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(as of October 31, 2019)

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STOCK RATING CATEGORY	COVERAGE UNIVERSE		INVESTMENT BANKING CLIENTS (IBC)			OTHER MATERIAL INVESTMENT SERVICES CLIENTS (MISC)	
	COUNT	% OF TOTAL	COUNT	% OF TOTAL IBC	% OF RATING CATEGORY	COUNT	% OF TOTAL OTHER MISC
Overweight/Buy	1161	37%	281	42%	24%	530	37%
Equal-weight/Hold	1438	45%	310	46%	22%	679	47%
Not-Rated/Hold	1	0%	0	0%	0%	1	0%
Underweight/Sell	568	18%	77	12%	14%	229	16%
TOTAL	3,168		668			1439	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

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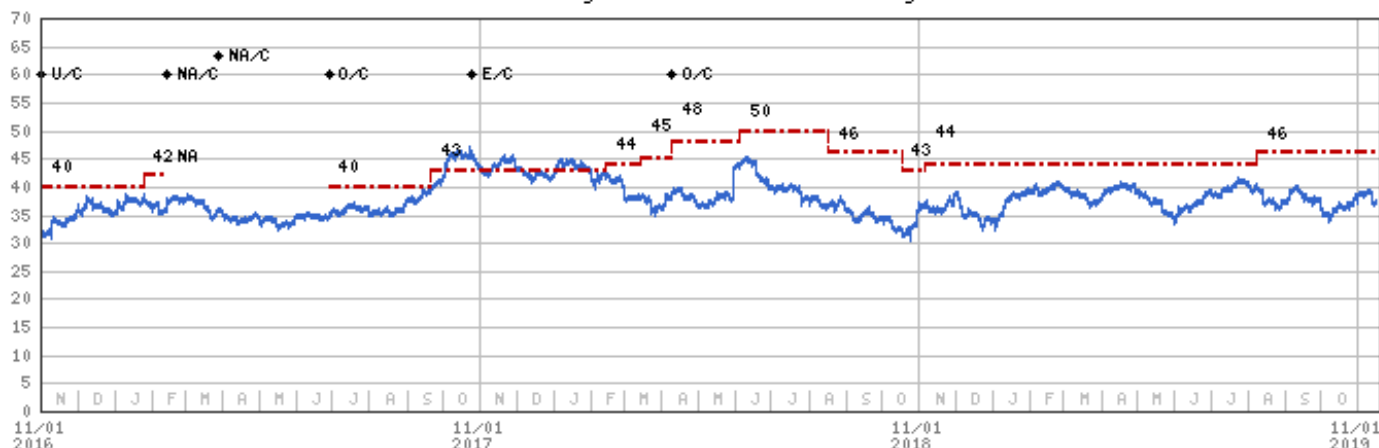
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Stock Price, Price Target and Rating History (See Rating Definitions)

General Motors Company (GM.N) - As of 11/17/19 in USD
Industry : Autos & Shared Mobility



Stock Rating History: 2/10/15 : NA; 3/17/15 : U; 5/28/15 : E; 6/11/15 : NA; 8/24/15 : U; 8/31/15 : NA; 2/24/16 : U; 5/6/16 : E; 9/19/16 : O; 11/1/16 : U; 2/14/17 : NA; 3/28/17 : NA; 6/28/17 : O; 10/25/17 : E; 4/9/18 : O
 Price Target History: 10/7/14 : 27; 1/23/15 : 28; 2/10/15 : NA; 3/17/15 : 28; 6/11/15 : NA; 8/24/15 : 27; 8/31/15 : NA; 2/24/16 : 26; 4/27/16 : 28; 5/6/16 : 29; 9/19/16 : 37; 11/1/16 : 40; 1/25/17 : 42; 2/14/17 : NA; 6/28/17 : 40; 9/21/17 : 43; 2/13/18 : 44; 3/14/18 : 45; 4/9/18 : 48; 6/5/18 : 50; 8/17/18 : 46; 10/17/18 : 43; 11/5/18 : 44; 8/9/19 : 46

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target --- No Price Target Assigned (NA)
 Stock Price (Not Covered by Current Analyst) --- Stock Price (Covered by Current Analyst) ---
 Stock and Industry Ratings (abbreviations below) appear as ♦ Stock Rating/Industry View
 Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
 Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

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INDUSTRY COVERAGE: Autos & Shared Mobility

COMPANY (TICKER)	RATING (AS OF)	PRICE* (11/15/2019)
Adam Jonas, CFA		
Avis Budget Group Inc (CAR.O)	U (06/26/2018)	\$31.59
Ferrari NV (RACE.N)	O (05/09/2019)	\$167.00
Fiat Chrysler Automobiles NV (FCHAM)	++	€14.12
Fiat Chrysler Automobiles NV (FCAU.N)	++	\$16.03
Ford Motor Company (F.N)	O (08/06/2019)	\$8.95
General Motors Company (GMN)	O (04/09/2018)	\$36.89
Harley-Davidson Inc (HOG.N)	O (05/06/2013)	\$37.98
Hertz Global Holdings Inc (HTZ.N)	U (09/14/2017)	\$16.47
Tesla Inc (TSLA.O)	E (05/15/2017)	\$352.17
Armintas Sinkevicius, CFA, CPA		
Adient PLC (ADNT.N)	U (07/31/2018)	\$20.72
American Axle & Manufacturing Holdings Inc (AXL.N)	O (03/22/2018)	\$9.96
Aptiv Plc (APT.V.N)	U (12/05/2017)	\$92.31
Asbury Automotive Group Inc (ABG.N)	E (07/10/2018)	\$110.00
AutoNation Inc. (AN.N)	U (07/10/2018)	\$52.99
BorgWarner Inc. (BWA.N)	O (03/22/2018)	\$44.59
Carmax Inc (KMX.N)	O (07/10/2018)	\$98.00
Carvana Co (CVNA.N)	U (01/14/2019)	\$81.57
Delphi Technologies PLC (DLP.N)	E (10/15/2018)	\$11.72
Garrett Motion Inc (GTX.N)	U (09/09/2019)	\$10.57
Goodyear Tire & Rubber Company (GT.O)	E (08/13/2018)	\$16.05
Group 1 Automotive, Inc (GPI.N)	O (05/06/2019)	\$101.39
Lear Corporation (LEA.N)	O (07/31/2018)	\$121.94
Lithia Motors Inc. (LAD.N)	O (07/10/2018)	\$160.86
Magna International Inc. (MGAN)	U (03/22/2018)	\$55.72
Penske Automotive Group, Inc (PAG.N)	O (07/10/2018)	\$51.76
Sonic Automotive Inc (SAH.N)	E (11/14/2019)	\$34.20
Tenneco Inc. (TEN.N)	E (08/14/2019)	\$12.67
Visteon Corporation (VC.O)	U (03/22/2018)	\$93.03

Stock Ratings are subject to change. Please see latest research for each company.

* Historical prices are not split adjusted.