

# POLITECNICO DI TORINO

Master's degree in Automotive Engineering



Master's degree Thesis

## **Market Analysis and Commercialization Strategy in Middle East for New Ram Heavy Duty Lineup**

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# Introduction

Across all automotive industry, light commercial vehicles segment is the most linked one with a country economic activity. In particular LCV industry is health indicator for productive and commercial sectors. The economic globalization, in the last years, has opened to the development of new markets that are quickly growing for international importance. In Middle East the GCC (Gulf cooperation Council) countries are the most developed in the region. They grow in the last twenty years thanks to crude oil production and refinery. Now GCC countries are working to reduce dependence from oil's exports and reaching a higher level of stability with internal economy expansion.

The recent terrorist attack to Saudi ARAMCO refineries underlines the fragile link that subsist between the local oil production and the rich economy of the country. Despite Instability borders, GCC countries create a peace oasis in an important commercial hub that is Middle East.

In this scenario a global company as FCA need to be present in Middle East Market. It represents one of the largest Pick Up industry in the world and an open door on new developing markets.

Ram with its tens-year history in the Pick Up segment is the best interpreter of a diversification strategy that points to expand FCA Group in Middle East on Pick Up and light commercial vehicles segments.

The aim of this thesis is to understand what the market's opportunities are and how to develop the right marketing mix to be successful in the launch of a new product in the line.

# Ram

## History

The proven capacity, durability and reliability have made the "Dodge Ram" one of the best-know pickups in the world. The name "Ram" was first used in 1981 during the launch of the redesigned Dodge's light truck line, with the label Ram and Power Ram. It a Recall of Ram hood ornament first used on Dodge trucks and rugged vehicles made by Dodge from 1932 to 1954. So the decision in 1981 to resurrect the ram could actually be considered a vintage throw back.



Fig1 Ram logo evolution

Taking a step back, Dodge born as Dodge brothers (John and Horace) got their start making parts for Oldsmobile, Ford, and others; then they struck out on their own, with the first Dodge Brothers automobile in 1914 instantly earning a strong reputation and good sales. They did not build a truck until World War I, and that was a panel-van, not a pickup; with a half-ton capacity and a 35 horsepower engine. The underlying chassis was likely almost unchanged from their cars. And in 1921, Graham Brothers started selling one-and-a-half ton pickups through Dodge dealers, using their own bodies on Dodge chassis. In 1928, Chrysler acquired Dodge Brothers and in 1929 launch a new half ton pickup The first trucks had four wheel hydraulic brakes, a unique safety feature among pick-ups. Then Dodge quickly expanded its line with ¾ T and 1T Trucks. In 1940, engineering started on a military four wheel drive truck, leading to the first stock light-duty four wheel drive pickup in 1946; these were made in a massive new truck plant. After World War II Dodge worked quickly to adapt their military trucks to civilian versions and from a ¾ T army chassis developed the Power Wagon. The earliest reference to the Power Wagon was a wartime ad in *Collier's*, referring to Dodge's "Battle Wagon;" it looked similar to the Power Wagon, but had some major differences. A much closer relative of the Power Wagon was in a Chrysler factory photo dated July 3, 1945; there were no nameplates on the

prototype, so the name may not have been selected yet. However, it is the Power Wagon, without any doubt. Dodge finally in 1946, with the sales floors being swamped by customers seeking the rugged wartime Dodge, the name had been finalized as Power Wagon. It used the 1939-style commercial cab with a 126-inch chassis and it is powered by The 94 hp, 230-cu.in. flathead-6, proven for its long last reliability, sturdiness and cheap maintenance. Used also the same drive line of military version with 4-speed manual transmission and with the low range gearing changed from 1.5 to 1.96. Differently from the Power Wagon the rest of the Dodge Trucks quickly evolved to meet customer tastes with new design truck studio. In 1954 was introduced new engine, the Hemi V8 that will gain the crown as Dodge truck engine for its performances and toughness.

**Its development ranges from  
the battlefield to the fields of peace!**

During World War II, the army needed an entirely new kind of truck . . . a truck that would have tremendous pulling power and stamina . . . a truck that would take water, sand and hub-deep mud in its stride . . . a truck that could winch itself out of the most difficult terrain.

Dodge designed and built such a truck. It was proved . . . first in tough army tests . . . then on battle fronts all over the world.

This was the truck that GI's wrote home about . . . the truck that just wouldn't quit!

When the war was over, Dodge redesigned its famed army truck for peacetime use. The result was the Dodge Power-Wagon—a rugged, "go-anywhere" powerhouse on wheels.

Today thousands of Dodge Power-Wagons are providing economical, dependable power on hundreds of different jobs.

Study this folder carefully. It may show you how you can do a difficult job more easily, more effectively and more profitably . . . with a sturdy Dodge Power-Wagon!

**1950 Dodge brochure**



Fig2 Dodge advertising



Fig3 first power wagon series



Fig4 Dodge WC 50

In 1981 The introduction of first-generation Dodge Ram Trucks were named as payload rating: 150 (1/2 ton), 250 (3/4 ton), and 350 (1 ton). The Ram powerful engines had been on other Dodge models for years and was: the 95-horsepower 3.7-liter slant-6, the 140-horsepower 5.2-liter V8, or the 170-horsepower 5.9-liter V8; depending on the designation of the Ram: 150, 250, or 350. Dodge Ram used "D"

for two-wheel-drive models and "W" for four-wheel-drive ones; the designations did not change to 1500, 2500, and 3500 until 1994. Dodge Ram introduced new engines and electronic fuel injection in 1988 and 1989. The 5.2-liter V8 saw electronic fuel injection in 1988, with the other models following the next year. This improved overall performance. 1989 also saw a new 125-horsepower 3.9-liter V6 to replace the 3.7, and the 5.9-liter V8 got more power, 190 horses. The Cummins turbodiesel that makes headlines today also arrived in 1989 as a 160-horsepower, 542 Nm of torque, 5.9-liter inline-6. In 1994 is introduced The second-generation Ram. It was an all new Dodge RAM named Truck of the Year by Motor Trend. With its powerful engine, rugged appearance and car-like drive, it became an immediate hit. Changes in labeling took place: 150 (half ton) now became 1500, 250 became 2500 and likewise the 350 became 3500. Even though it's a small change, that extra zero does a lot to not only change a number but a perception that this now is stronger and sturdier. It was a smart change for RAM. The trim levels were also changed up. Including a basic Work Special, there was also an LT, ST and the luxurious Laramie SLT. Using the same setup as with all trims, the work special trim was bare bones; perfect for a fleet of trucks. The LT and ST came with some extra goodies, but it was the Laramie SLT that was now stacked with extra luxuries. Moving ahead with the times, the center console/arm rest was now large enough that it could store your laptop. The engines became more powerful, as well. V6's and V8's powered these beasts, offering turbocharged as well as HEMI's. There was, even, V10 that became available belting out 300 horsepower and 450 lb/ft of torque. Leading the pack in safety features, the RAM became the first full size pickup to have driver side airbags as well as offer four wheel ABS in the 1500 and 2500 models. Even Chuck Norris thought it was great. Let's not forget that television gold was made when in 1995 Chuck Norris drove a Dodge RAM 1500 in his popular series "Walker Texas Ranger". There are few things that speak to how awesome this pickup is if even Chuck Norris is driving it.

The third generation was unveiled in 2001 at Chicago Autoshow and debuts for Model Year 2002. This was a major update including an all new frame, suspension, powertrains, interiors, and sheet metal. The crew cab models for this generation were actually Quad Cab trucks that had conventional-opening rear doors. The four-wheel-drive light trucks (1500 series) lost their live axles in favor of an independent front suspension, but the 2500 and 3500 series retained the live axles for maximum longevity and durability. This body style drew heavily from the previous generation. The redesigned trucks bolstered sales, with 400,000 sold during 2001-2002 and nearly 450,000 sold during 2002-2003, a new high point for the Ram name. The Dodge Ram was updated for the 2006 model year. One notable addition was the

"Mega Cab", featuring a 6.25-foot (2 m) cargo box and 22 inches (559 mm) of extra cab space, allowing seating for six with rear recliners, a full screen mapping in-dash navigation system became an option, and the headlamps were redesigned to a more modern design. With 2007 Chassis Cab line was introduced with industry standard rear frame width. First on 3500 than on 4500 and 5500 offering a product for wide range of usage.

In 2009 Ram became a stand alone brand following Chrysler's acquisition by Italian automaker Fiat. With a complete new full line of Trucks.

Ram since 2009 is stand-alone brand of FCA group and it is a big player in Pick-Up and light trucks segment. Ram have a complete Pick-Up Line-Up from mid-size to heavy duty chassis cab, joined with Ram Promaster van and Promaster city.



*Fig5 first generation Dodge Ram truck*



*Fig6 2019 Ram 1500*

## Brand Core Business

Since its launch as a stand-alone division in 2009, the Ram brand has emerged as a key player in the industry with the award-winning all-new Ram 1500, the longest lasting line of heavy-duty trucks and a full range of light commercial vans, all Built to Serve. Separating the brand from Dodge and creating a distinct identity has allowed the Ram brand to focus on its core business, markets, and customers. By investing substantially in innovation and new products, Ram has proven to be capable, efficient and durable, continuing to beat the competition in capturing the most sought-after titles.

- Proven to last: over the past 30 years, Ram has the highest percentage of vehicles still on the road;
- Most Luxurious Truck in the Segment (2019 Ram 1500);
- Highest 5th wheel towing capacity (30,000 lbs. with Ram 3500 Cummins Turbo Diesel);
- Best ride and handling with exclusive link coil rear and auto-level air suspensions – Class Exclusive;
- Highest snow plow rating (Ram 2500 and 3500);
- Most interior space (Ram Mega Cab);
- Most capable full-size off-road pickup (Ram Power Wagon).

Ram is built up on four-brand values:

- INTEGRITY Demonstrate honesty, humility, and trustworthiness
- COURAGE Stand for what's right and never be afraid to take risks for a worthy cause
- LEADERSHIP Always strive to raise the bar and never settle for simply "good enough"
- HARD WORK Take pride in your craft. Have respect for the blood, sweat, and determination that are required to achieve greatness

These four pillars embody two souls of the Brand:

- Work Hard
- Play Hard

Souls reflected by customers' needs that want a multi-purpose vehicle, doing everything they want with their trucks from hardest work place in: Agriculture, Service and Deliveries, Construction and Trades; to maximum freedom in personal and family leisure, playing sports and outdoor. Always taking advantages from form quality, reliability, comfort, convenience and dependability of the Truck.

Ram has worldwide distribution with regionally focused portfolios:

#### NAFTA

- 1500 classic
- New 1500 DT
- 2500
- 3500
- Heavy Duty Chassis Cab
- Promaster
- Promaster city
- 1000
- 700

#### EMEA

- 1200
- 1500 classic
- New 1500 DT
- 2500
- 3500
- Heavy Duty Chassis Cab(3500, 4500, 5500)

#### LATAM

- 700
- 1000
- 1500 classic
- 2500

Ram's portfolio comprise the American full size (light and Heavy duty) trucks, that constitute the core product of the brand, and a series of "rebadged" product to guarantee full product coverage on covered market. To create strong identity for commercial strategy.

## Ram line-up



*Fig7 NAFTA Ram lineup 2018*

### Ram 1500 classic

Ram 1500 classic (DS) is the the first Truck produced as ram stand alone Brand. It recall the previous generation and retains its ruggedly handsome appearance with all-new interior and exterior design aesthetics, improved aerodynamics and all-new, segment-leading technology – and every Ram 1500 truck benefits from new content specifically designed to match each model’s unique style.

Ram Truck brand designers started with the Ram grille making it not only larger – with the same overall width, but approximately one inch taller – “saddled” within the new upper fascia panel for a more integrated appearance. The classic Ram crosshair horizontal and vertical grille bars are now flush at the top and bottom of the grille surround.

The new front bumper design supports the “saddled” Ram grille theme with new vertically oriented fog lamps for improved light spread, distance and more lumens. Larger openings around the front tow hooks (four-wheel drive models) allow for easy access to the hooks.

The Ram 1500 quad headlamp design has improved light spread, pattern consistency, distance and 30 percent more lumens. An all-new premium headlamp lighting system is a bi-functional halogen projector design with 15 amber LEDs for park/turn/position lamp and three amber LEDs for the side marker. The new, polished stainless steel running boards have a sturdy box cross-section design. Also, the new wheel-to-wheel exclusive running board design offers aerodynamic improvements over the current version and provides customer’s improved access to the forward portion of the truck bed. Exclusive RamBox availability, a new storage system that allows secure storage inside the truck’s bed walls. A new 6-foot-4-inch bed option is available on Crew Cab models giving customers the ability to combine Ram 1500’s largest available cab with the largest

four-door/bed combination. All-new premium tail lamps are standard and consist of 15 red LEDs with three red LEDs for the side marker. Extensive wind tunnel testing honed the Ram 1500 exterior shape, resulting in continued best-in-class aerodynamics. Also, the cooperative application of active aerodynamics and modern styling led to a six percent aerodynamic improvement on the new truck. The 2013 Ram 1500 Regular Cab 4x2 coefficient of drag (Cd) is .360 – compared with a Cd of .386 for a previous Ram 1500 Regular Cab 4x2.

The Ram 1500 uses a newly designed frame with improved, low torsion (stiffness) attributes that increase stability and handling precision while decreasing noise, vibration and harshness (NVH) up to 30 percent, depending on drive cycle. Front rails feature 20 percent increased yield strength from the use of high-strength steel. Among other features, the new frame design incorporates a new powertrain, new air suspension and new body-mounting technology. Portions of the frame are hydro formed for dimensional accuracy (hydroforming reduces the amount of welding that leads to distortion), and side rails are fully boxed. The front frame section incorporates advanced, high-strength steel that maintains overall strength and durability while saving approximately 30 pounds. To further improve NVH, new larger body mounts are located on the front frame rails and at the C-pillar.

New standard front independent suspension combines redesigned upper control arms, aluminum lower control arms and retuned geometry with coil springs for improved responsiveness and handling. New, more robust ball joints on the front suspension yield greater durability and are engineered with improved sealing methods.



*Fig8 Ram 1500 Classic*

Best-in-class ride and handling gets even better with an all-new air suspension system featuring five height settings for optimum ride and aerodynamic performance. The feature operates automatically, or may be controlled manually via console or key fob controls:

- Normal Ride Height (NRH): 8.7 inches of clearance (measured from the base of the door sill) is the default, load-leveled ride height
- Aero Mode: Lowers the vehicle .6 inches from NRH. Aero Mode improves fuel efficiency by up to one percent and is activated by vehicle speed, adjusting for optimal performance and fuel economy
- Off-road 1: Lifts the truck 1.2 inches from NRH for added height in clearing obstacles
- Off-road 2: Delivers more off-road capability, increasing ground clearance by 2 inches over NRH
- Park Mode: Lowers the vehicle two inches from NRH for easy entry/exit and cargo loading

The new air suspension system adds up to four inches of lift span, offering best-in-class step-in height of 21 inches, best-in-class ground clearance of 10.7 inches, best-

in-class departure angle of 27.8 degrees, and best-in-class break over angle of 24.2 degrees supported by four-corner air springs that provide a cushioned, premium ride.

Another benefit to the new air suspension is load-leveling capability, which automatically detects load on the suspension from a trailer or payload. The air pressure increases until the vehicle reaches normal ride height, leveling the truck and improving the loaded ride.

Additionally, a separate button on the key fob gives the operator the ability to manually lower the truck, allowing for ease of passenger entry and reduced tailgate lift-over height.

Regarding the powertrain the 3.6-liter Pentastar V-6 engine (Ward's 10 Best Engines Award two years in a row) with variable-valve timing (VVT) offers best-in-class standard 305 horsepower, 269 lb.-ft. of torque and best-in-class fuel economy for V-6 trucks. New V-6 features 42 percent more horsepower, 13 percent more torque and at least 20 percent better fuel economy when compared to the previous 3.7-liter V-6 powertrain. Also, the standard V-6 delivers best-in-class towing – 6,500 pounds.

The legendary 5.7-liter HEMI® V-8 with fuel-saving cylinder shut-off and VVT provides 395 horsepower, 407 lb.-ft. of torque and best-in-class fuel economy for V-8 trucks.

The class-exclusive eight-speed automatic transmission (TorqueFlite 8), standard equipment with 3.6-liter V-6 Pentastar, doubles the amount of gears compared to previously available four-speed automatic transmission, which improves drivability and enhances fuel efficiency. The new eight-speed also is available with the 5.7-liter HEMI V-8– the Company's first application with a V-8 (TorqueFlite 8 with V-8 is late availability).

Owners will appreciate an innovative rotary e-shift dial for trucks equipped with the new TorqueFlite 8-speed transmission that replaces both column and floor shifters. The exclusive rotary e-shift dial enables intuitive operation with a direct and confident feel, even with gloves on. The convenient, dash-mounted, easy-to-understand and operate system provides total control of the sophisticated eight-speed transmission and is Ram Truck's innovative approach to electronic shifters, already used in Class 6-8 trucks. This new design allows quick blind-shift transitions from "Reverse" to "Drive" when towing or navigating out of mud, snow or busy parking lots and crowded worksites. The new rotary e-shift dial also yields space for more functional and usable storage in the console.

Another segment exclusive with the eight-speed transmission is a thermal management system that is designed to quickly raise engine and transmission fluid temperatures. By raising fluid temperatures, parasitic losses resulting from high-viscosity engine oil and transmission fluid can be reduced, improving fuel efficiency by 1.7 percent. As the engine temperature increases to pre-determined levels, warm engine coolant is circulated through a thermal exchange unit, which also contains dedicated pathways for transmission fluid. As the thermal exchange unit heats up, it also heats up the transmission fluid. This action dramatically reduces warm up time for the transmission, improving fuel economy, drivability and shift quality. In most powertrain configurations, the transmission heats up independently of the engine, delaying warm-up time and reducing efficiency. Adding to industry firsts in a pickup truck is the application of stop-start, another fuel saving feature available on Ram 1500 models. This system improves fuel economy by up to 3.3 percent, an increase of about one mile-per-gallon to the truck's city drive cycle.

Stop-start increases fuel efficiency by shutting the engine off when the truck comes to a complete stop. Amenities (radio, gauges, heating or air conditioning, etc.) continue to operate, making the operation transparent to the driver. The engine restarts automatically when the driver releases the brake, allowing seamless acceleration. Enabling components have been upgraded for heavy-duty operation on models equipped with the stop-start feature.



*Fig9 Ram 1500 Classic interiors*

For 1500 classic, new features and technologies create opportunity for a redesigned interior with material upgrades, improved fit and finish, all-new interior themes with different colors and materials, all-new HVAC controls and new multimedia systems. Rear occupants can enjoy the same quality, fit and finish as the driver. With points of contact a priority, new premium materials, colors and designs are now on all four doors. Soft-touch materials enhance armrests and upper bolsters with expanded use of premium surfaces.

The Ram 1500 features the new generation 8.4-inch Uconnect system with background screens tailor-made to specific Ram models and themes. To make room for the new big screen, the center stack is upgraded with matching materials found throughout the interior. To complement the range of Ram 1500 models, the interior design team created new, individualized themes with different colors and materials. For the Laramie Longhorn, the Ram design team sought out a very rare Walnut grain with a unique burl that was unintentionally created by ranchers using trees as fence posts for barbed wire. Eventually, the trees grow over the rusting metal wire, creating a swirl coloring pattern and tone that is not found anywhere else. The all-new HVAC controls take lessons learned from other Chrysler Group Uconnect applications and feature simple, improved function, meeting the highest human machine interface (HMI) standards. The HVAC system includes a redundant

architecture allowing the operator to use either the 8.4-inch touchscreen or manual controls to alter the truck's environment. Below the upgraded HVAC arrangement is a new switch bank with relocated, easy-to-use controls for a number of features depending on vehicle models and options. All buttons in the comfort bank also are redundant on the Uconnect system. Contiguous to the switch bank is a prominently placed, adjustable integrated trailer brake control allowing the driver to add or reduce trailer brake function on the fly.

The Ram 1500's new, exclusive eight-speed transmission created the need for an innovative rotary e-shift dial in the cockpit to replace the center console gate shifter – a first for pickups. The new shifter works in a multitude of seating configurations and will replace floor and column shifters for use in the eight-speed transmission. Realizing this is a dramatic change in the way trucks have historically shifted gears, the interior design team accepted the challenge with a new shift knob, naturally and prominently placed to the driver's right, at the lower left-hand side of the center stack, in place of the previous transfer case shift knob. The rotary dial enables intuitive blind-shift transitions between "Drive" and "Reverse" with a direct and confident feel. The transfer case retains full capability with push buttons located directly under the e-shift dial.

On the safety and security front, the Ram 1500 offers more than 45 active and passive safety and security features, including standard front airbags, front and rear side-curtain air bags and seat-mounted side pelvic-thorax air bags with Enhanced Accident Response System, knee bolsters, seat-belt pretensions, BeltAlert system; and available adjustable pedals, ParkSense rear park assist and ParkView rear back-up camera. Ram 1500 also includes standard electronic stability control (ESC), hosting a number of technologies including all-speed traction control, trailer-sway control, Hill-start Assist and anti-lock brake system (ABS).

The Ram 1500 features available Keyless Enter 'n Go technology, which allows the doors to be unlocked and the vehicle ignition to be started without having to touch the key fob. Also, remote central locking includes the RamBox cargo management system and tailgate power locks, creating a convenient solution for locking down the truck with the push of a button. An available remote start feature allows a driver to start their vehicle from up to 300 feet away. Door controls, illuminated entry, engine immobilizer and panic alert are standard features with the Keyless Enter 'n Go system.

## All new 2019 Ram 1500



*Fig10 2019 Ram 1500, Rebel trim on the left Limited trim on the right*

The all-new 2019 Ram 1500 delivers a no-compromise approach to the full-size truck segment with strength, durability, technology and efficiency,” said Mike Manley, Head of Ram Brand (now CEO) . “The Ram 1500 offers truck buyers leading-edge innovation with 225 pounds of weight reduction, 12,750 pounds of towing capability, a stunning Uconnect 12-inch touchscreen display and active systems that improve fuel efficiency and assist drivers. The Ram 1500 stands out as the benchmark in a very competitive segment.

### Engineering

The new Ram 1500 uses the longest, lightest and most efficient frame in the half-ton truck segment. The chassis has reduced weight by 120 pounds – 100 pounds from the frame alone delivering a maximum payload of 2,300 pounds and maximum trailer tow capacity of 12,750 pounds. The strongest Ram 1500 frame ever produced includes the same impact countermeasures across all configurations, and is made from 98 percent high-strength steel. Exclusive front splayed frame rail technology (patent pending) creates a highly efficient energy absorbing structure for all impact modes, including front-offset with frame integration forward of front tire. Also, frame-mounted high-strength steel tire blockers are placed behind the front tires to force wheels outward in the event of impact. Additionally, side rails are taller and fully boxed. To further improve NVH, new electronically controlled side-frame-mounted active tuned-mass modules (ATMM) work in harmony with an interior active noise cancellation (ANC) system on 5.7-liter HEMI V-8 equipped models to

reduce ambient sounds down to a low 67.1 db – the quietest Ram 1500 ever. Rear cross members are double sheer welded to the inside and outside of the frame for improved durability and roll stiffness.

Helping to create the most spacious cab in the segment, three new, longer frame lengths are offered: a 144.5-inch wheelbase on Crew Cab short beds and a 153.5-inch wheelbase on Crew Cab long beds – both four inches longer than their predecessors. The Quad Cab long bed has a wheelbase of 140.5 inches. Ram’s newest pickup offers a turning radius of just 46.2 feet, curb to curb. New independent front suspension components combine lightweight composite upper control arms, aluminum lower control arms and retuned geometry for improved responsiveness and handling. The front stabilizer bar is relocated behind the front tires, further improving roll stiffness by 20 percent. A new front coil-over shock design is standard equipment on all Ram 1500s regardless of configuration. The third generation, exclusive rear five-link coil suspension design provides better articulation over obstacles than a leaf spring system, and the new progressive coil springs are more than up to the task of handling a payload of 2,300 pounds and towing capability of 12,750 pounds.

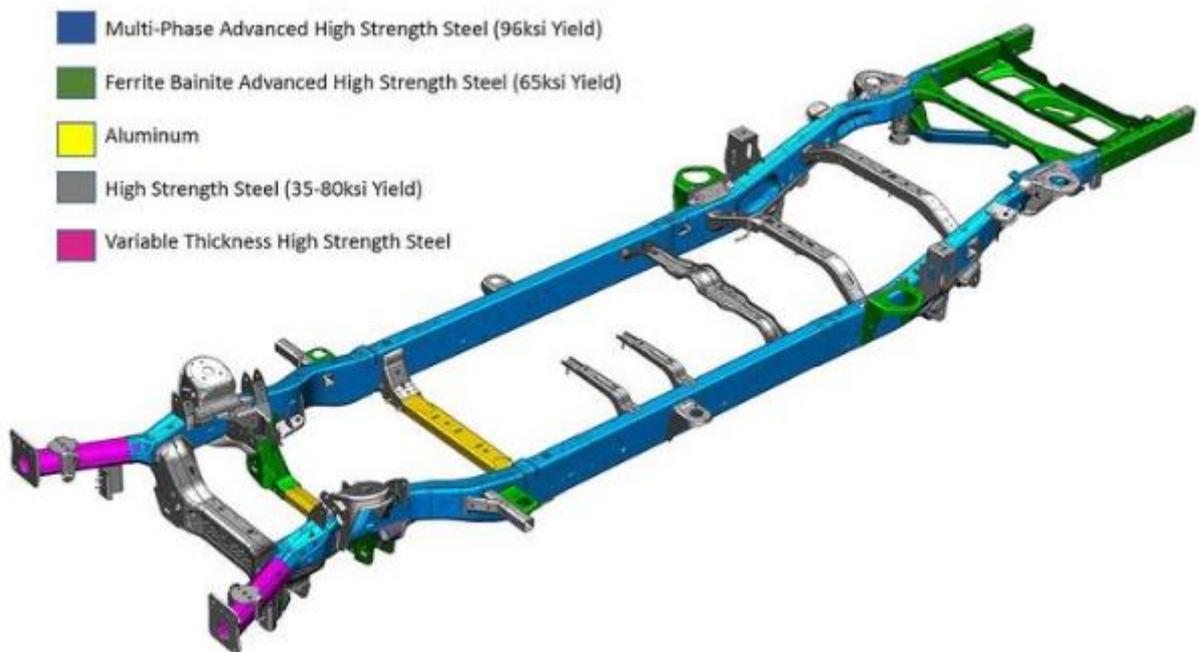


Fig11 2019 Ram 1500 chassis

## Frequency Response Damping (FRD) shocks

Frequency Response Damping (FRD) technology has found its way into the 2019 Ram 1500 shocks on all four corners. When the Ram 1500 experiences a slower input, common during cornering and heavy braking, the bypass valve is closed for more aggressive damping, which provides additional stability and poise. When driving normally or exposed to faster shock inputs – which is common on rough roads or at higher speeds – the valve will open to soften the damping, giving the driver more comfort, confidence and control.

## Tailgate and Lightweight materials

The new aluminum tailgate not only features damping during opening, it also integrates a lift assist measure. Unlike most competitors, Ram uses a nitrogen- and oil-charged strut, which gives consistent assist in even the coldest or warmest climates and consistent assist through the entire tailgate swing. The latch-and-lock mechanism is now electronic, reducing the amount of moving parts and allowing owners to drop the tailgate with the interior switch, remotely with the key fob or unlock/open with passive entry. Customers with arms full will appreciate the ability to easily access the bed on approach. Reducing the weight of components on the new Ram 1500 improves fuel economy and allows for more content while raising payload and towing capability. By using effective high-strength steels, composites and aluminum, the 2019 Ram 1500 has dropped nearly 120 pounds from the chassis (100 pounds from frame alone) and nearly 225 pounds overall when compared to the previous generation. Additional weight reductions balance out added content to provide new comfort and fuel-saving content.

The all-new Ram 1500 also takes advantage of lightweight aluminum for selective components, not just where possible but where practical. Although the Ram 1500 hood and select chassis components pioneered aluminum in 2009, the following chassis elements on the Ram 1500 made a notable reduction in weight by moving to aluminum in the all-new model:

- Tailgate
- Engine mounts
- Front axle center section
- Front suspension crossmember
- Transmission crossmember
- Steering system gear

Lightweighting also involves substituting composites for metal – which offer high-tensile strength at very low weight while improving durability. The upper front suspension control arms (integrated with a steel structure), and the air dam structure are made from, or combined with, composite materials. The weight reductions allow for more convenience, comfort and entertainment features but also innovative fuel-saving technology, such as thermal management, eTorque and active aerodynamics.

### Aerodynamics

Further demonstrating efficiency through engineering, extensive wind-tunnel testing honed the 2019 Ram 1500 exterior shape, resulting in continued, class-leading aerodynamics. Also, the cooperative application of active aerodynamics and modern styling led to a nine percent aerodynamic improvement on the new truck. The 2019 Ram 1500 Quad Cab 4x2 coefficient of drag is .357. As the 2019 Ram 1500 approaches 35 miles per hour (mph), a standard active front air dam automatically extends downward 2.5 inches (non-air suspension and Rebel trucks). The optional air suspension system lowers the truck 0.6 inches improving overall aerodynamics and efficiency. The new Ram 1500 also employs an active grille shutter system, which automatically closes the airflow through the huge grille when cooling is least needed.

The body of the new Ram 1500 is the product of design and engineering cooperation at its best. The new Ram 1500's elevated hood better directs air away from the wiper area – improving overall aerodynamics and reducing wind noise. A new venturi roof design directs air back to the rear spoiler – making it the most effective pickup roof treatment to date. Significant time was dedicated to designing the truck bed itself to increase usability and aerodynamics. Bed rails are raised by 1.5 inches to reduce drag as does a new spoiler on the new aluminum tailgate. The bed-to-cab execution is sub-flush to reduce disturbance alongside the body. A wheel-to-wheel tubular side-step design offers aerodynamic improvements by allowing air to pass around the truck more smoothly. A segment-exclusive lockable tri-fold tonneau cover serves a dual purpose by improving fuel economy by 0.8 percent and adding security and weather protection for bed storage.

### Air suspension

The segment's best ride and handling gets even better with the addition of FRD shocks with air suspension. The 2019 Ram 1500 is the only full-size pickup available

with a four-corner air suspension system for optimal ride and aerodynamic performance. Another benefit of the new air suspension is the load-leveling capability, which automatically detects load on the suspension from a trailer or payload. The gas pressure increases until the vehicle reaches normal ride height, leveling the truck and improving the loaded ride. Additionally, a separate button on the key fob gives the operator the ability to manually lower the truck, allowing for ease of passenger entry and bed loading.



*Fig12 2019 Ram 1500 Air suspension*

#### Off-road

Ram now adds a robust 4x4 Off-road Package for the Ram 1500 on nearly every trim. The offering includes a one-inch suspension lift, with or without the available four-corner air suspension. An electronic-locking rear differential and 32-inch on/off-road tires on 18- or available 20-inch wheels provide additional grip. Hill-descent Control, an off-road-biased rear suspension geometry (Rebel and 4x4 Off-road Package) and unique off-road-calibrated shocks bolster trail capability. The package also includes robust skid plate protection (transfer case, steering, engine and gas tank) and tow hooks. Rear-fender decals denote trucks equipped with the 4x4 Off-road Package.

Also new for 2019, the Ram 1500 Rebel is even more capable, now available in Quad Cab configurations and featuring new 18-inch wheels with 33-inch Goodyear Wrangler DuraTrac tires driven by an electronic-locking rear differential. The Rebel predecessor came standard with Ram's Active-level four-corner air suspension and a one-inch suspension lift. While air suspension is still available, the new Rebel comes standard with coil spring suspension and a one-inch factory lift. Newly designed Bilstein shocks feature remote reservoirs to keep the shocks cool and work with unique rear suspension geometry (Rebel and 4x4 Off-road Package) to keep

the tires in traction. Rebel also includes Hill-descent Control for more off-road prowess. Hefty tow hooks feature wide bumper openings to ease use and the underbody protection features skid plates on the transfer case, steering system, oil pan and gas tank.



*Fig13 2019 Ram 1500 Rebel trim*

#### Brake system

With 18 percent more pad area, the 2019 Ram 1500 features the largest front brake rotors in segment at 14.9-inches. A new electric parking brake eliminates 20 pounds from the previous system and works jointly with the truck to identify automatic engagement events.

#### Electric power steering

The next generation system reduces weight by six pounds and is tuned for lighter and quicker steering. By using an electric motor to power the truck's rack-and-pinion steering system, the engine is relieved from the task of constantly turning a hydraulic pump, improving fuel efficiency up to 1.8 percent and adding 5 horsepower.

#### Powertrain

The addition of the eTorque mild hybrid system is one of several changes made to the powertrains for the 2019 Ram 1500. The goal: Improve performance, fuel economy, payload, towing capabilities and drivability. Other changes include upgraded TorqueFlite eight-speed automatic transmissions, strategic weight reductions and innovations, such as quickly heating lubricants to reduce viscosity-related efficiency losses.

The eTorque mild hybrid system replaces the traditional alternator on the engine with a belt-driven motor generator unit that performs several functions. The motor generator unit works with a 48-volt battery pack to enable quick and seamless

start/stop function, short-duration torque addition to the engine crankshaft in certain driving situations and brake energy regeneration, which improves responsiveness and efficiency.

With the engine running, eTorque's motor generator unit feeds 48-volt current to a 430 watt-hour lithium-ion Nickel Manganese Cobalt (NMC)-Graphite battery. The small-suitcase-sized, air-cooled battery pack mounts to the rear wall inside the Ram 1500's cabin.

In addition to spinning the engine for restarts, the eTorque unit also recaptures energy during deceleration and braking to feed charge to the battery pack. The upgraded eTorque version of the Pentastar V-6 is the standard engine in most trim levels of the 2019 Ram 1500, specifically tuned for truck duty and rated at 305 horsepower and 269 lb.-ft. of torque.

The newest Pentastar V-6's advanced technologies, such as wide-range variable valve timing and two-step variable valve lift, deliver the optimal blend of power and fuel economy, based on the driver's demand.

The brawny 5.7-liter HEMI V-8 combines the muscle of 395 horsepower and 410 lb.-ft. of torque – in a smooth, broad power band that avoids the hesitation and peakiness of turbocharged engines – with performance-enhancing and fuel-saving technologies that include variable valve timing and cylinder deactivation. With Fuel Saver Technology (cylinder deactivation), the engine control computer turns off fuel and spark, and closes the intake and exhaust valves on four of the engine's eight cylinders during light load operation, such as highway cruising when full power is not needed.

Variable camshaft timing helps maximize fuel economy by reducing the engine's pumping work via a delayed closing of the intake valve, which increases the expansion process of the combustion event.

The HEMI V-8 in the 2019 Ram 1500 benefits from a new 850-watt electric cooling fan using Pulse Width Modulation to tailor the fan's energy draw to the cooling demand. Eliminating the traditional fan blade mounted to the front of the engine helps improve fuel economy by reducing parasitic losses and fan noise.



*Fig14 2019 Ram 1500 powertrain scheme*



*Fig15 Active noise reduction system*

Every 2019 Ram 1500 is equipped with a fully electronic TorqueFlite eight-speed automatic transmission with a wide spread of gear ratios that keeps engine rpm in the right range for the task – whether putting in a full day of off-road work or highway cruising. Trucks equipped with the 3.6-liter Pentastar V-6 use an FCA-produced TorqueFlite 850RE transmission. The 5.7-liter HEMI V-8 uses an upgraded TorqueFlite 8HP75 transmission. Both transmissions use a new generation of computer controllers that process data faster and coordinate transmission operation with the eTorque mild hybrid system. There are more than 40 individual shift maps to optimize shift changes and points for fuel economy, performance and drivability.

#### Thermal management

Today's Ram 1500 employs a thermal management system that taps into heated engine coolant to speed up the warmup of automatic transmission fluid and engine oil to maximize the fuel saving benefits of those fluids. The system also serves a cooling function under high load/high ambient temperature conditions to ensure the transmission fluid temperature is controlled.

#### Transfer cases get upgrades

The BorgWarner 48-12 for part-time 4WD operation with Hi and Low ranges; and the BorgWarner 48-11 for on-demand 4WD are available in the 2019 Ram 1500. Both transfer cases engage via a push-button control center-mounted underneath the rotary gear selector on the instrument panel.

The transfer cases are upgraded internally for more robust performance in conjunction with the increased payload and towing capabilities of the new truck.

## Axles

Powertrain engineers reworked the rear axle for the 2019 Ram 1500 with the aim of increasing performance, durability and efficiency.

Front and rear wheels and hubs adopt a 6-lug bolt pattern. The new Ram 1500 is also fitted with a new electronic parking brake.

Three final drive ratios are available on 2WD and 4WD models – 3.21, 3.55 and 3.92. Each combination is available with a traditional open or limited-slip differential, which automatically divides torque among the rear wheels to maximize traction available at each wheel.

New for 2019 is an electronic locking differential, available on 4WD trucks with the 3.21 and 3.55 final drive ratio and lifted suspension, and 2WD and 4WD trucks with the 3.92 ratio with the base or lifted suspension (Rebel and 4x4 Off-road Package). The electronic system gives the driver the ability to lock or unlock the differential on demand, providing maximum traction to the vehicle when needed. Also new for 2019 is a Max Tow Package, an option with the 3.92 final drive ratio offering up to 12,750 pounds of towing capability. The Max Tow Package is based around a Dana Super 60 center section and open differential with a 256-millimeter gear set, and uses 35-spline axle shafts. It is available on 2WD trucks powered by the 5.7-liter HEMI V-8 with eTorque.

## Fuel saving

The V-6 and V-8 powertrains in the 2019 Ram 1500 also reduce fuel consumption with an Interactive Deceleration Fuel Shut Off (iDFSO) feature that pauses fuel flow to the engine cylinders when the vehicle is decelerating. For the 2019 model year, the iDFSO feature is improved to be active in third gear and higher.

The exhaust system has been re-engineered to reduce weight. Changes such as optimizing the thickness of the exhaust pipes and using aluminum for the hanger brackets cut more than nine pounds from the system. Extensive tuning of system components enables the 2019 Ram 1500 to maintain its trademark throaty roar from the dual exhaust tips.

A new, forward-facing air intake mounted behind the grille of the 2019 Ram 1500 feeds cooler air to the intake of the system of the Pentastar V-6 and HEMI V-8 engines for improved performance. The intake system for both powertrains includes a hydrocarbon adsorption filter to reduce evaporative emissions. The filter is good for the life of the vehicle and does not need regular maintenance.

## Exterior Design

The all-new Ram 1500 is lighter, longer and wider. Ram 1500's wheelbase and cab are up to four inches longer – giving the truck improved proportions and better aerodynamics. Width is increased by .5 inches. Bed height is raised by 1.5 inches.

The 2019 Ram 1500 retains shapely body lines with a much larger and more aggressive, forward-leaning, front grille opening. The all-new frame with splayed rail ends connects repositioned tow-hooks that are more outward and down when compared to the previous generation.

An interlocking theme reveals itself in the grille, headlamps and hood. Catering to a variety of buyers, the most elaborate grille designs in the auto industry are available in six different styles.

Three headlamp variations are available: Halogen, full LED and full LED with Adaptive Front-lighting System (AFS). Above the lamps resides a new raised aluminum hood that builds on the Ram's big-rig stance. The elevated hood also better directs air away from the wiper area – improving overall aerodynamics and reducing wind noise. A new badge finds itself interlocked with the stamping of the side hood pocket.

Seamless surfacing flows with trademark Ram front and rear fender blisters artfully blended into the body. A drawn body-side character line stretches from front to rear with a styled creased line serving as the two-tone paint border. A new shark fin antenna – making the new 2019 Ram 1500 the first full-size truck without a mast antenna, handles all navigation, Wi-Fi, radio and SiriusXM tasks. A new 33.3-inch by 43.4-inch panoramic sunroof also is available, giving passengers a spectacular 10 square feet of sky view and additional natural light. The roof also receives aero treatments to flow air over the bed to the tailgate. Bed rails are raised by 1.5 inches, and are now aligned with the beltline of the body to create a stronger, consistent horizontal profile with aero benefits. Additional drag is reduced with a new spoiler on the aluminum tailgate.



*Fig16 2019 Ram 1500 22" Aluminum Wheels*



*Fig17 RamBox cargo management system*



*Fig17 2019 ram 1500 Premium LED headlamps*



*Fig18 2019 ram 1500 Dual Panel panoramic Sunroof*

The all-new Ram 1500 continues to offer the best lockable bed storage in the segment with RamBox, now featuring a 115-volt outlet and relocated overhead lighting in the box lids to improve illumination. The industry-first RamBox cargo management system includes versatile, weatherproof, lockable, illuminated and drainable storage bins built into the bed rails.

All-new tail lamps come in three different configurations: Halogen, LED and LED with Blind-spot Monitoring.

A segment-exclusive full-width chrome stamped-steel rear bumper underlines the rear of the truck. The improved design integrates a larger stepping pad on the corners and creates a lower step-in height on the center of the bumper for easy access to the bed.

New wheel designs align with an increased lug pattern —from five to six —and are available from 18-inches to an impressive 22-inches in diameter. Also, first for Ram the use of Tri-coat paint, in 4 new products.

#### Interior Design

Surrounding the largest cab in the segment, the interior design team brought unique colors and premium materials to each trim level of the 2019 Ram 1500. Modular design allows for more personification and customization. Each model makes its own unique “hero” statement.

The 2019 Ram 1500 features the first application of Uconnect 4C NAV on a 12-inch fully configurable touchscreen, tailor-made for various Ram models. The touchscreen can house one application, such as the navigation map, across the whole 12-inch screen, or can be divided in half, operating two different applications at once. An all-new toggle switch bank lies below the touchscreen giving physical control of specific features. An active noise cancellation system on 5.7-liter HEMI V-8 equipped models and acoustic glass reduce ambient sounds down to a low 67.1 db – the quietest Ram 1500 ever.

New features gave designers the opportunity to reinvent the Human Machine Interface. Across all trim levels, the 2019 Ram 1500 features push-button start, an

electronic parking brake and a redesigned rotary e-shifter dial. The new shifter area also intelligently groups new feature buttons, including engine stop-start from eTorque, Hill-decent Control, axle lock and transfer case controls, when equipped. The center stack has been raised and brought closer to the driver to accommodate the 12-inch Uconnect touchscreen and improve overall reachability of system controls.

The new HVAC system features nearly 25 percent more air flow at lower noise levels, including larger front defroster vents for better performance. Improved vents give rear passengers 50 percent more airflow when compared to the previous generation.

With 151 liters of interior storage volume, the 2019 Ram 1500 includes nearly 100 percent more storage capacity versus closest the competitor. The reimagined center console is a useable, complex piece of art with more than 12 different storage combinations. Center stage, a wider docking area with optional wireless charging can hold a small tablet or smartphone. A three-position sliding cup holder tray can be stowed under the center armrest to reveal a deep storage tub designed to hold a 15-inch laptop. Lifting the lid of the center armrest also reveals an additional lined storage compartment sized to fit a tablet and/or hang a full-size file. At the rear of the console, there are two additional cup holders, which include a tablet holder for rear passengers.

To keep devices charged, five USB ports reside in the center console – three up front and two in back. Three of the USB ports, including one in the rear seating area, are fully functioning and communicate with the Uconnect interface. Two three-pronged 115-volt household plugs can be found in the first and second rows (one in the center stack and one at the rear of the center console). An additional 115-volt plug can be found in the RamBox, when equipped, tripling the number of outlets on the previous model, and now handling up to 400 watts.

The redesigned upper glove box acts as an open shelf for smaller items. On higher trims, the upper glove box is covered by a wood and metal accent that can slide upwards, hidden in the dash. The Laramie Longhorn takes advantage of this space with an actual burned-in branded “Longhorn.”

The 2019 Ram 1500’s cab length has increased a total of four inches inside. B- and C-pillars moved an inch rearward, and the rear of the cab is pushed an additional two inches. Thus, front and rear doors are now one inch larger on Crew Cab configurations, while the rear door is one inch shorter on Quad Cab models compared to the previous model.

Along with the largest cab in the segment, the second-row features eight degrees of slide-recline with best-in-class leg room of 45.1 inches, passenger comfort and

an exclusive SmartFold center armrest that creates a captain's chair experience. A true flat-load floor provides increased rear passenger comfort and usability. Folding up the rear bench seat reveals 20 liters of additional contained storage space with under-seat compartments. With the clever fold out feature, contained storage doubles to 40 liters.

Bookending the flat-load floor are two RamBins. Now 5.5 inches longer than the previous model, these covered in-floor storage bins can hold larger items, including up to a four-inch drop hitch – keeping cargo out of sight and the interior clean. On top of each Ram Bin are two tie downs to keep cargo secure. The all-new Ram 1500 key fobs also feature new design treatment and functions, including power release tailgate. The fob also features branding for higher trim levels and a battery life improvement of up to six years.



Fig19 2019 Ram 1500 12" display; on the right: 360° Surround View Camera

## Uconnect

Designed to be the most technologically advanced pickup ever, the company's all-new Ram 1500 is loaded with an array of innovative and state-of-the-art technology combined with the award-winning fourth-generation Uconnect system that offers new features and connected services. The 2019 Ram 1500's high-tech features include a new class-exclusive and easy-to-use 12-inch fully configurable touchscreen display; the first-time debut of the all-new SiriusXM with 360L; the most powerful audio system ever available in a pickup – 900-watt Harman Kardon with 19 speakers; personal device integration and in-vehicle connectivity. The bonded flush 12-inch reconfigurable touchscreen with tailor-made graphics for various Ram models makes personalization easy with the new split-screen, operating two different applications for desired configuration, such as Apple CarPlay and HVAC controls, or one application, such as navigation across the entire

12-inch touchscreen. Available for the first time on the all-new Ram 1500 is a 360-degree Surround View Camera system providing a birds-eye view via four cameras positioned around the vehicle to create a fully stitched image. Customers who prefer not to use the touchscreen for HVAC will find redundant controls located on both sides of the display for convenience. Uconnect systems with the class-exclusive 12-inch display also feature the next level of audio entertainment with the first-time debut of the all-new SiriusXM with 360L. The new Ram 1500 also offers Uconnect 4 with or without navigation on an 8.4-inch display and Uconnect 3 with 5-inch display.

#### All-new SiriusXM with 360L

SiriusXM is transforming the next generation of in-car audio entertainment with the debut of the all-new SiriusXM with 360L, delivering a personalized listening experience with more variety, smart content recommendations and thousands of hours of on-demand streaming audio.

The 2019 Ram 1500 is the first vehicle to have access to the new SiriusXM listening experience, which showcases the features and functionality of SiriusXM's next-generation platform. SiriusXM's new and enhanced experience for drivers and their passengers delivers SiriusXM content via both satellite and on-demand streaming to Ram truck models equipped the new fully configurable 12-inch touchscreen. Owners will receive a one-year SiriusXM All Access subscription with the purchase of a properly equipped 2019 Ram 1500.

SiriusXM with 360L enables Ram truck drivers and passengers to discover more of what SiriusXM offers based on their listening preferences, including exclusive SiriusXM on-demand programming not previously available in the vehicle. Most powerful audio system in a pickup

The all-new 2019 Ram 1500 offers four audiophile-quality audio systems to immerse passengers in the ultimate sound experience, including Alpine and a class-exclusive premium Harman Kardon audio system with 19 speakers and 10-inch subwoofer – the finest and most powerful audio system available in a pickup:

- Three 3.5-inch and one-inch coaxial speakers located in the instrument panel
- Two 3.5-inch and one-inch coaxial speakers located in the front doors
- Two 6x9-inch speakers located in the front doors
- Two 6x9-inch speakers located in the rear doors
- Two 3.5-inch and one-inch coaxial speakers located in the headliner
- One 10-inch enclosed subwoofer behind the rear seat (passenger side)
- One 12-channel boosted Class-D amplifier
- Four ANC microphones

### Compatible device connectivity

To ensure that passengers remain conveniently connected, 2019 Ram 1500 owners can manage their personal device connectivity with a plethora of electronic charging options. Located in the reimagined center console, a wider docking area offers an all-new optional integrated wireless charging pad that can hug a small tablet or multiple smartphones. To keep devices charged, there are five USB ports (three are in front of the center console and two are in the back). Three of the USB ports are fully functioning and communicate with the Uconnect interface while the other two USB ports are charge only. Four of the five USB ports are new type C/A ports that allow devices to be charged up to four times faster than standard USB outlets. The remaining USB is type A.

### Safety and Security

With more than 100 available safety and security features, the 2019 Ram 1500 is available with the latest in advanced technology. As part of FCA US's ongoing and continuous efforts to proliferate the most advanced materials engineering, the Ram 1500 frame and body structures feature 98 and 54 percent high-strength steel respectively.

The new Ram 1500 features the most advanced frame in the segment with equal impact countermeasures on all configurations. Exclusive splayed and tapered frame rail technology creates a highly efficient energy absorbing front frame rail structure for all impact modes. Frame-mounted high-strength steel tire blockers are placed at front cab location to redirect the tire outbound in a front-offset impact. Some of newest features among more than 100 standard and available safety and security features in the all-new 2019 Ram 1500:

- Adaptive Cruise Control (ACC) with Stop, Go and Hold: Helps maintain a driver-adjustable distance between the vehicle and the one in front of it, and can bring the vehicle to a controlled stop and hold it there. This system works by decreasing the vehicle's pre-set cruise-control speed when closing in on another vehicle in the same lane, or when another vehicle moves into the same lane. ACC will accelerate the vehicle back to the pre-set rate once the vehicle in front speeds up or moves into another lane, including full stop
- Adaptive Front-lighting System (AFS): Points headlamps in the planned direction the vehicle is traveling using steering wheel input to point light around turns, driveways and parking lots

- Advance Brake Assist: If inadequate force is applied to brakes in response to signal from Full-speed Forward Collision Warning-Plus, Advance Brake Assist increases brake force automatically
- Blind-spot Monitoring (BSM): Uses dual ultra-wideband radar sensors to aid the driver when changing lanes or if being passed by or passing unseen vehicles. The system notifies the driver of vehicle(s) in their blind spot via illuminated icons on the side-view mirror. BSM also includes easy-to-use trailer coverage
- Brake assist: In an emergency brake situation, the system applies maximum braking power, minimizing the stopping distance
- Brake-throttle override: Allows driver to stop the vehicle when throttle and brake inputs occur simultaneously; electronic throttle control reduces engine-power output until vehicle stops or pedal inputs cease
- Electric parking brake (EPB): Utilizes parking brake switch mounted in the instrument panel, a motor on caliper (MOC) at each rear wheel and an electronic control module. Four modes of operation: static apply and release, dynamic apply, drive away release and safe hold
- Electronic brake-force distribution: Assists the driver to optimize stopping distances and control under all vehicle loading conditions by regulating braking pressure front-to-rear
- Forward Collision Warning-Plus: Utilizes radar and video sensors to detect whether the Ram 1500 is approaching another vehicle or large obstacle in its path too rapidly, and warns or assists the driver in avoiding/mitigating the incident
- Frequency Response Damping: New shock design features a two-valve system to properly adjust wheel movement depending on road input, with two valves, additional tuning helps keep tires to the ground on rough surfaces
- LaneSense Lane Departure Warning-Plus: Leverages electronic power steering (EPS) to deliver a torque input to alert and assist the driver with corrective action
- Largest brakes in segment: The all-new Ram 1500 features the largest available front brakes at 14.9 inches for superb stopping distance
- ParkSense Parallel/Perpendicular Park Assist: Ultrasonic parking sensors on bumper guide the driver into the parking space. The system automatically controls steering-wheel angle, while the driver controls gear position, brake and accelerator. Parallel parking is possible on either side of vehicle by

selecting the direction with the turn signal; for perpendicular parking, vehicle backs itself into space

- ParkSense park assist with reverse stop: The system utilizes ultrasonic sensors at low speeds in reverse to detect stationary objects. The system provides haptic feedback to the driver, with an application of the brake before releasing if a collision is imminent. At speeds below 4 miles per hour, the system will bring the vehicle to a stop before releasing. The forward system utilizes ultrasonic sensors at low speeds to detect stationary objects in front of the vehicle
- Rear Cross Path (RCP) detection: In parking lot situations, this system warns drivers backing out of parking spaces of traffic moving toward their vehicle. It activates any time the vehicle is in Reverse. The driver is notified of vehicle(s) crossing behind the vehicle via illuminated icons on the side-view mirror and with an audible chime
- Surround View Camera: Uses four cameras positioned around the vehicle to provide
  - a bird's-eye perspective of the vehicle and its immediate surroundings. Driver can also select other views, including front or rear cross path
- Tire blockers: Frame-mounted high-strength steel tire blockers are placed at front cab location to redirect the tire outbound in a front-offset impact
- Most advanced frame in the segment with exclusive splayed frame rail: All Ram 1500 frames feature 98 percent high strength steel and technology (patent pending) that creates a highly efficient energy absorbing front frame rail structure for frontal impact modes
- 9-1-1 Call/Assist Call: Mirror-mounted buttons for emergency services, roadside assistance, Uconnect Customer Care and non-collision related emergencies
- SiriusXM Traffic: Works with the vehicle's navigation system to display traffic speed and flow information, along with accident information to assist drivers in routing around congested areas
- SiriusXM Travel Link: Real-time local fuel prices, weather conditions, sports scores and movie locations and times all featured in this subscription-based system provided by SiriusXM Radio
- Tailgate power release and Passive Entry: Allows the operator to release the tailgate using the key fob or unlock automatically with combination of key fob presence and hand motion under tailgate handle
- Tailgate ajar notification: Notifies the operator the tailgate is not fully closed with a warning light in the gauge cluster

- Tilt-and-telescoping steering column: Allows steering column to tilt and move toward or away from the driver to achieve a safe and comfortable distance from the advanced multi-stage front driver air bag, if deployed
- Tire-fill alert: When adding air pressure to tires, a new tire-fill alert system chirps the horn once you have reached the recommended pressure
- Uconnect Access voice-to-text: Enables cloud-based text-message dictation via compatible Bluetooth-enabled cell phones; available to registered Uconnect Access subscribers
- Uconnect Drag and Drop menu bar: Drivers can drag key usage buttons and move them to their Uconnect system's main menu bar for easier access

Last but not least the 2019 Ram 1500 is 100% "American Truck" built at the Sterling Heights Assembly Plant (SHAP) in Sterling Heights, Michigan.

The last product renewed in the range is Heavy Duty line. Unveiled at 2019 Detroit Auto Show last January represents the most technical advanced and luxurious truck, responding to growing demand of comfort and luxurious environment in working conditions. This product line will be the focus of following chapters with the launch campaign in Middle East.

## Heavy Duty

Heavy Duty line comprise all trucks with payload over 1 ton and is split in the following classes:

- Class2b GVWR range (3,856–4,536 kg) Ram 2500
- Class3 GVWR range (4,537–6,350 kg) Ram 3500
- Class4 GVWR range (6,351–7,257 kg) Ram 4500
- Class5 GVWR range (7,258–8,845 kg) Ram 5500

The 2019 Ram Heavy Duty is the most powerful, most capable pickup in the segment with a towing capacity of 35,100 lbs. and payload capacity of 7,680 lbs. But big capability is irrelevant if the truck fails to instill confidence to the driver. Ram redefines the phrase “you don’t even know it’s back there” when towing or hauling.



*Fig20 2019 Ram Heavy Duty lineup, from left to right: Ram 2500 LONGHORN, Ram 2500 POWERWAGON, Ram 3500.*

### Exterior

Robust sections combined with “interlocking” design aesthetics also function to improve aerodynamics to surround segment-leading capability and technology. Every Ram Heavy Duty truck benefits from new content specifically designed to match each model’s unique style. Rather than a traditional focus on styling elements individually, designers combined elements that influence each other’s shape, resulting in a more integrated look that aligns with the mechanical capabilities of the truck. For example, the grille, hood and fenders share pieces of each other, as well as the instrument panel, cluster and center console. The 2019 Heavy Duty creates a bold and unique appearance that Heavy Duty customers can call their own. Interlocked with the new, lighter aluminum hood, a

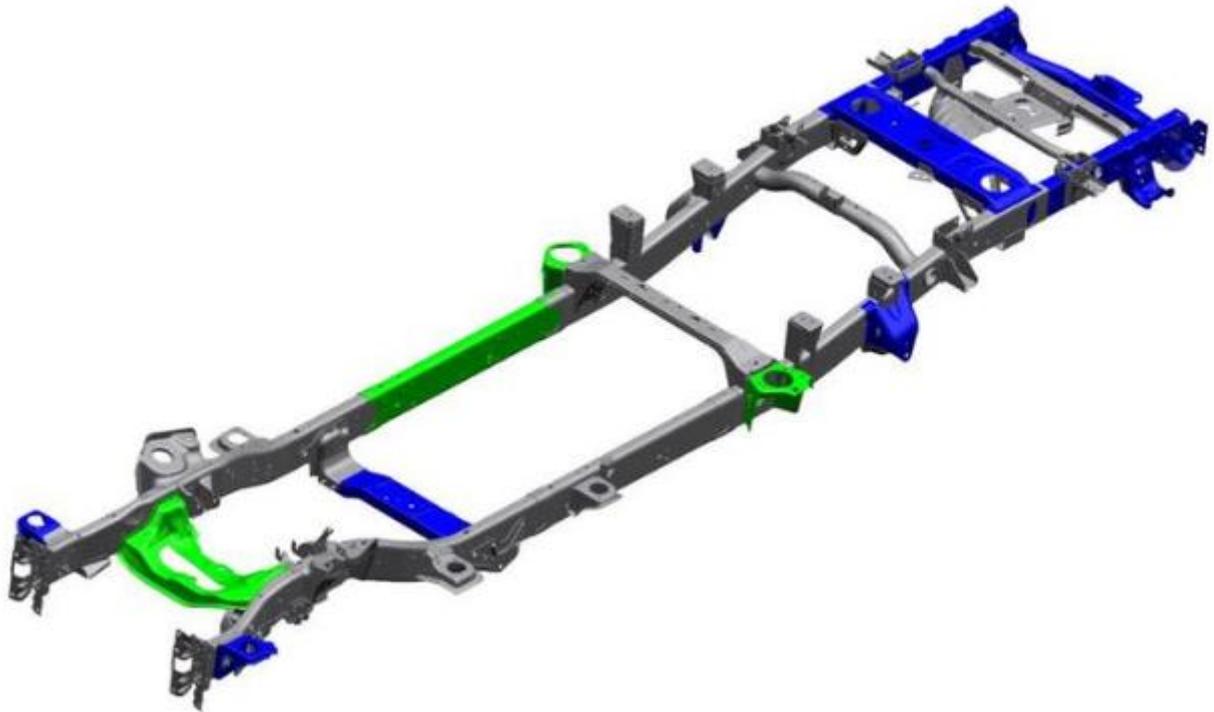
much larger and more aggressive front grille opening leads with confidence and strength. The 2019 Ram Heavy Duty is available in six different grille styles with a complete departure from the historic crosshairs. The new front bumper is cut with larger openings, providing greater airflow to the largest turbo intercooler Ram has ever adapted to its halo pickups. More than 20 sensors surrounding the new Ram Heavy Duty are seamlessly integrated to make them less visible. A removable air dam helps mold the most aerodynamic Heavy Duty Ram has offered. Three headlamp variations are available delivering the best lighting in the segment: Halogen, full LED/reflector and full LED/projector with Adaptive Front-lighting System (AFS) for up to 15 degrees of movement in the expected direction of travel. The side of the truck flows with trademark Ram style. A drawn body-side character line ties together the front fender and cab doors. An all-new interlocking side-step design incorporates deep tread patterns and a R-A-M logo. The new Ram Heavy Duty continues to offer the best lockable bed storage in the segment with RamBox. The industry-first RamBox Cargo Management System includes versatile, weatherproof, lockable, illuminated and drainable storage bins built into the bed rails. New for 2019, RamBox features a 115-volt outlet with up to 400-watts of power. Surrounding the largest cab in the segment, the interior design team brought unique colors and premium materials to each trim level of the 2019 Ram Heavy Duty. Each model makes its own unique "Hero" statement with paint colors, badging, wheels, grilles and other features.

#### Frame

Ram Heavy Duty trucks feature all-new frames built with 98.5-percent high-strength steel, six separate cross members, hydro formed main rails and fully boxed rear rails for optimal strength and mass efficiency. Although the new Ram Heavy Duty is stronger and more capable, lightweight materials in the frame, powertrain and an aluminum hood reduce overall weight by up to 143 lbs. Two Active-Tuned Mass Modules (ATMM) mounted on the frame rails search out unfavorable vibrations and apply countermeasures to eliminate them.

Wide front frame rails enable front suspension springs to be positioned slightly outboard – an enabler for generating positive roll stiffness. In the rear portion of the new frame, the structure includes fully boxed rear rails. The rear-axle structural crossmember with provisions for fifth-wheel and gooseneck hitches, has been upgraded for 2019 to accommodate the increased towing capacity. On vehicles equipped with the optional auxiliary camera prep package, the standard 4/7-pin bumper connector is replaced with a 12/7-pin connector to support the remote camera option (available Mopar accessory). A tailgate handle-mounted, rear

high-definition camera backup system is standard with dynamic imaging on the 12-inch, 8.4-inch or 5-inch displays with turning guidelines. Also, the cargo-view camera located in the Center High-Mounted Stop Light (CHMSL) provides a view of the bed for easier connection to fifth-wheel or gooseneck trailers, as well as monitoring bed loads.



*Fig21 2019 Ram Heavy Duty Pick Up chassis*

## Suspension

Heavy Duty trucks generally have a suspension equipped for constant, heavy payloads. This leads to a harsher ride when unloaded. The 2019 Ram Heavy Duty includes Frequency Response Damping (FRD) shocks on all four corners. The valves of an FRD shock automatically adjust for the type of vertical wheel input, allowing the Ram Heavy Duty to have sports-car-like suspension for handling and a supple suspension on rough terrain. Engineers added progressive springs and upgraded bushings to the suspension system, including the exclusive five-link coil design on Ram 2500, providing better load-carrying characteristics and improved articulation over obstacles when compared to a leaf-spring system.

A class-exclusive Active-Level rear air suspension is available on both the Ram 2500 and Ram 3500 and includes a new Bed-lowering Mode to make the heaviest trailer hook-ups a breeze. The 2019 Ram 2500 uses two air bags to replace the coil springs. Load capacity is not sacrificed and the Ram 2500's best-in-class ride and handling

gets even better, crushing the competition with two doses of engineering innovation (five-link coil with an air suspension option). The Ram 3500 features a Hotchkiss rear leaf-spring system with optional air suspension. By adding supplemental air bags, Ram engineers were able to soften the heavy-load leaf springs, allowing for more unladed suspension movement. In the front, a new, two-piece, front-suspension crossmember structure adds a longer welded interface and greater strength to the frame. The Ram Heavy Duty line features an advanced three-link front suspension to ensure roll stiffness.



*Fig22 2019 Ram 2500 air suspension*



*Fig23 2019 Ram 3500 with combined air suspension*

## Brakes

A new braking system upgrades the calipers, booster and master cylinder. Combined with a larger-ratio pedal swing, the 2019 Ram Heavy Duty delivers a more confident and powerful execution with little effort from the driver. The reengineered system also offers shorter stopping distances and braking to match the highest capability.

## Body

Several body elements are upgraded from mild steel to high-strength steel on the 2019 Heavy Duty pickups. Additional light-weighting efforts consist of an aluminum hood, which contributes to an overall weight reduction of 143 lbs. on the volume model.

Through wind-tunnel analyses and three million miles of real-world durability tests, engineers have created the quietest Ram Heavy Duty ever with a segment-leading drag coefficient of .409. Upgrades to improve NVH include new C-pillar hydromounts, anti-vibration devices, new engine mounts, active noise cancelling and new exhaust-system attachments.

## New Power Wagon Content

2019 Ram Power Wagon is the most capable production off-road truck in the industry. The Power Wagon features a unique suspension, factory suspension lift, locking front and rear differentials, disconnecting sway bar and a 12,000-lb. winch. New to the Power Wagon is a 360 camera, which includes forward-view camera gridlines to help navigate obstacles. An all-new and integrated front-mounted WARN Zeon-12 winch features a unique fairlead and fairlead retainer with a new synthetic line that cannot kink, does not fray and is more maneuverable. The new line also cuts weight by 28 lbs. A Power Wagon content package continues to be available on Tradesman, which includes all the off-road equipment but keeps the Tradesman design elements.



*Fig24 2019 Ram 2500 POWERWAGON with factory 12000- lb. winch*

## Engine

With a long list of upgrades, the new Cummins 6.7-liter I-6, high output Turbo Diesel delivers up to 1,000 lb.-ft. of torque @ 1,800 rpm and 400 horsepower @ 2,800 rpm. Changes begin at the core, with a cylinder block made from compacted graphite iron. Overall, the new Cummins Turbo Diesel weighs more than 60 lbs. less than the

previous-generation engine, yet delivers more power and torque. A new cast-iron cylinder head builds on the new block with changes that include new exhaust valves and springs, and new rocker arms. Lighter and stronger pistons include new low-friction rings and connect to the crankshaft via newly design forged connecting rods and new bearings. An all-new exhaust manifold is the mounting point for an improved variable-geometry turbocharger with laminated heat shields, delivering boost pressure up to 33 psi. The second variant of the Cummins Turbo Diesel also gets a performance boost with 370 horsepower @ 2,800 rpm and 850 lb.-ft. of torque @ 1,700 rpm. The standard engine in the 2019 Ram 2500 and 3500 Heavy Duty is upgraded to the proven and potent 6.4-liter HEMI V-8, delivering class-leading 410 horsepower @ 5,600 rpm and 429 lb.-ft. of torque @ 4,000 rpm to handle the payload and towing requirements of the heavy-duty truck user.

### Transmissions

Ram 3500 Heavy Duty models equipped with the 1,000 lb.-ft. high output Cummins 6.7-liter Turbo Diesel employ the Aisin AS69RC electronically controlled six-speed automatic. This transmission is engineered to handle the colossal torque of the Turbo Diesel engine and increased vehicle weight ratings while delivering improved shift quality. Along with hardware upgrades, the Aisin AS69RC uses a new transmission controller with double the memory of the previous controller and a dual-core processor. This delivers faster, more precise shifts under all driving and loading conditions.

Ram Heavy Duty trucks powered by the standard output Cummins 6.7-liter Turbo Diesel are equipped with a significantly upgraded version of the 68RFE six-speed automatic transmission. Changes designed to improve the electronically controlled transmission's shift quality include new variable-force solenoid controls for the torque-converter clutch. A new reverse accumulator improves shift feel when placing the transmission into park from reverse. Drive-to-park shifts were also improved through refined hydraulic control.

In a first for the Ram Heavy Duty, the 6.4-liter HEMI V-8 comes mated to the proven and smooth-shifting TorqueFlite 8HP75 eight-speed automatic. There are more than 40 individual shift maps to optimize shift points for fuel economy, performance and drivability. The transmissions use shift-by-wire technology, eliminating a mechanical linkage between the transmission and the gear selector. The 2019 Ram Heavy Duty uses an innovative rotary e-shift dial mounted on the left side of the instrument panel's center stack – freeing up space traditionally occupied by a console- or column-mounted shift lever.



*Fig25 2019 Ram POWERWAGON Transmission*

## Transfer Cases

Four-wheel-drive versions of the 2019 Ram 2500 and 3500 Heavy Duty are equipped with a BorgWarner part-time transfer case. The 6.4-liter HEMI V-8 and variant of the Cummins 6.7-liter Turbo Diesel drive power through either an electronic (BW 44-46) or manual shift (BW 44-47) transfer case, depending on the model. Ram Heavy Duty trucks with the high output version of the Cummins 6.7-liter Turbo Diesel are equipped with an all-new part-time BorgWarner transfer case (BW 44-48). This transfer case is designed to handle the higher input loads for maximum towing capability up to 35,100 lbs.

## Axles

New front and rear axles on the 2019 Ram 2500 and 3500 Heavy Duty have been engineered to improve durability, handle industry-leading payload and towing capabilities, and minimize Noise, Vibration and Harshness (NVH), as well as take advantage of opportunities to optimize weight. The Ram 3500 Heavy Duty is offered with an all-new, larger 12-inch AAM rear axle to handle the class-leading power and capability.

## Interior

For 2019, all-new features, technology and premium materials help the redesigned Ram Heavy Duty continue its interior leadership with quality, technology and luxury.

Each trim level is uniquely characterized to reflect individual identity. The new instrument panel combines a strong, structurally interlocking appearance, pushing the central controls up and toward the driver, improving overall reachability of system controls. The 2019 Ram Heavy Duty features the Uconnect 4C NAV on a 12-inch fully configurable touchscreen, which can display one application, such as the navigation map, across the whole 12-inch screen, or can be divided in half, operating two different applications at once. Redundant HVAC controls and a new enhanced-ergonomic switch bank deliver improved feedback and appearance. The new 2019 Ram Heavy Duty features an available 7-inch, full-color, 3D animation-capable driver information display, with reconfigurable function that enables Ram truck drivers to personalize information inside the instrument cluster. The display is designed to visually communicate information, using graphics and text, quickly and easily. Across all trim levels, the 2019 Ram Heavy Duty features push-button start and a redesigned rotary e-shifter dial (HEMI V8 only). The new shifter area also intelligently groups new feature buttons, including Hill Descent Control, axle lock and transfer case controls, when equipped. An active noise cancellation system and acoustic glass reduce ambient cabin sounds by nearly 10 db – the quietest Ram Heavy Duty ever. The new HVAC system features 30 percent more air flow at lower noise levels, including larger front defroster vents for better performance. All-new in-duct electric heating elements on diesel models help speed cabin warmup on cold days, and larger system controls and new larger panel ducts work better with gloved hands. With up to 258 liters of interior storage volume on the exclusive Mega Cab including two bins behind the rear seats, the 2019 Ram Heavy Duty offers more than 120-percent additional storage capacity versus the closest competitor. A reimagined center console is a usable, complex piece of art with more than 12 different storage combinations. Up from 19.7 to 22.6 liters, the console includes a wider docking area with optional wireless charging, which can hold a small tablet or smartphone. A three-position sliding cup-holder tray can be stowed under the center armrest to reveal a deep storage tub designed to hold a 15-inch laptop to keep devices charged, five USB ports assist in the center console type-C ports for faster communication and charging. Up to three 115-volt household plugs are available (three-prong). One in the first row and one in the second row. All outlets now handle up to 400 watts to charge or power tools quickly.



*Fig26 2019 Ram 2500 LIMITED interiors*

## UCONNECT

Designed to be the most technologically advanced heavy-duty pickup ever, the new Ram 2500 and 3500 are loaded with an array of innovative and state-of-the-art features. The award-winning fourth-generation Uconnect system offers new convenience and connected services, and keeps Ram truck customers connected, engaged and informed all while keeping their hands on the wheel and eyes on the road.

The 2019 Ram Heavy Duty features a 12-inch reconfigurable touchscreen with tailor-made graphics for various Ram models and state-of-the-art connectivity. Personalization is made easy with the new split screen, allowing two different applications for desired configuration, such as Apple CarPlay and HVAC controls, or one application, such as navigation across the entire 12-inch touchscreen. The new 2019 Ram Heavy Duty offers four audio systems to immerse passengers in the ultimate sound experience, including a 750-watt Harman Kardon Audio System with 17 speakers, including an 8-inch subwoofer.



*Fig27 2019 Ram 2500 LIMITED 12" display*

The class-exclusive Uconnect 4C with 12-inch display also features the next level of audio entertainment with SiriusXM with 360L. The new service enables Ram truck drivers and passengers to discover more of what SiriusXM offers based on their listening preferences, including exclusive SiriusXM on-demand programming never before available in the dash. Benefits of the new SiriusXM with 360L include more channels (now 200+), access to thousands of hours of recorded on-demand programming and enhanced sports play-by-play offerings. Smart content recommendations enable listeners to discover more of what they love, based on listening habits. Individual listener profiles allow multiple drivers and passengers to customize and maintain their own presets, select preferences and pick up where they left off in the car.

## SAFETY AND SECURITY

The new 2019 Ram 2500 and 3500 Heavy Duty pickups include more than 100 available safety and security elements, including an array of active and passive systems to assist the driver and passengers, offered in all models. Automatic Emergency Braking (AEB), 360-degree camera display and selectable tire pressures are just some of the new, specialized technologies found in Ram's halo pickup trucks. Since the Ram Heavy Duty line is engineered around capability, it makes sense that many of the technologies would be enhanced from their use in passenger cars. For example, Tire Pressure Monitoring, which can monitor up to six

tires on the pickup, now includes trailer tire pressure monitoring for up to 12 trailer tires. Although a back-up camera is a standard feature on most vehicles, the Ram Heavy Duty offers a second rear-view camera (cargo-view camera) to monitor payload in the bed. It also can be used to align fifth-wheel and gooseneck trailers, a common task of the Ram Heavy Duty pickup. As a segment-first, back-up sensors on the Ram 3500 include specifically designed sensors to cover the added width of dual rear wheels, giving a wider span of coverage when backing up with limited view.

The new Ram Heavy Duty uses a variety of high-strength steels in the frame, body panels and core structure to maximize impact performance and reduce overall weight, including the A-, B- and C-pillars, front structure and door beams. Increased resistance spot welds reduce the heat exposure to surrounding metal to maintain strength and long-term durability.

## Ram in Full Size Pick Up Market

Ram core business is based on full size Pick Up segment that can account a worldwide industry about 2.800.000 vehicles, showing continuous growing in last 8 years.

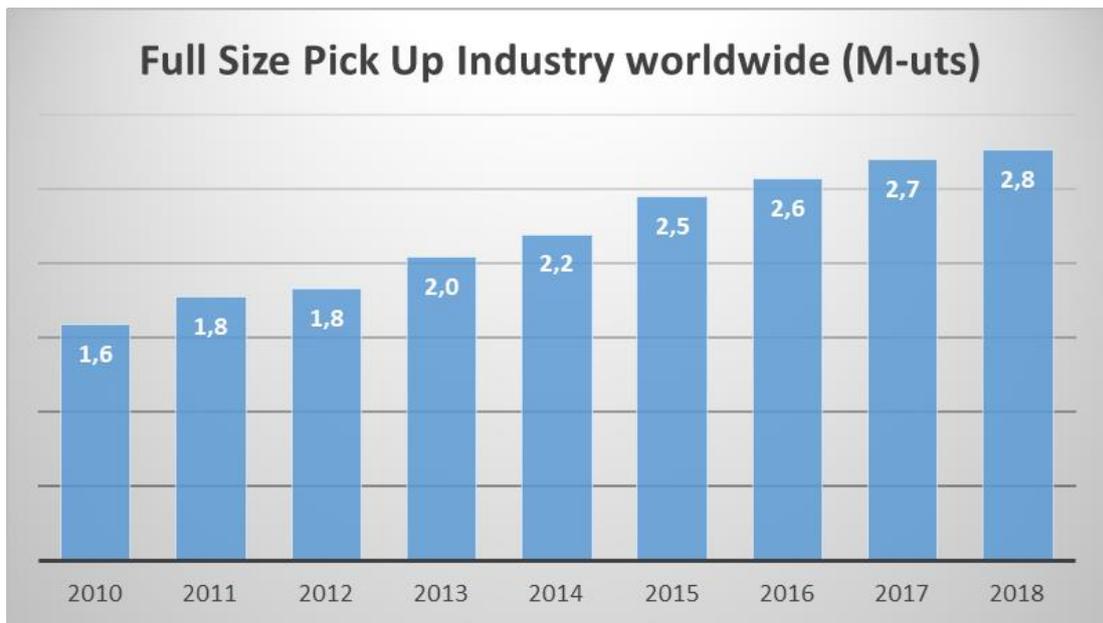


Fig28 worldwide Full Size Pick Up Industry million uts. Source: Sim Pivot

Full Size Pick Up are evolved in North America with the after world war two boom and soon became the most diffused commercial vehicle. The relation with economic boom generated a cultural attachment to the style that represents a buy choice not only for pure commercial purpose but always more as American life attitude. Full Size Pick Up industry is almost concentrated in North America where it represents 17% of total car industry and the market leader Ford F150 represents the most sold vehicle in US. Outside North America this segment has only a little nice of market related to high cost and important dimensions. The most relevant market outside NAFTA is Middle East. Ram from its born as stand-alone brand grown in sales volumes up to triple, becoming the second player In NAFTA with 24% of Market share.

## Ram sales growth

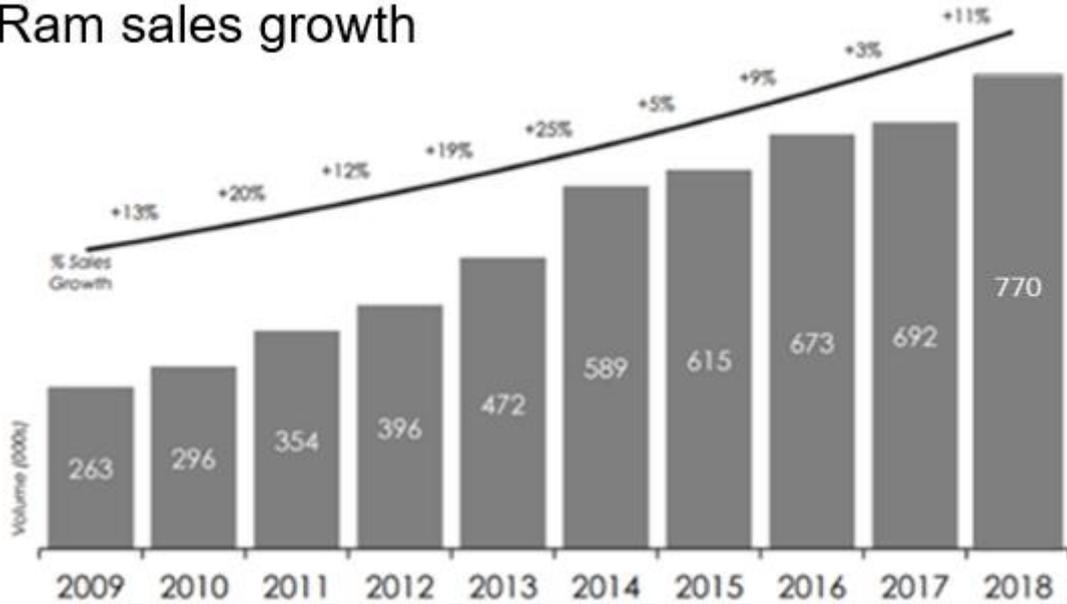


Fig29 Ram worldwide sales growth K-uts. Source: Sim Pivot

The North America Full Size Pick Up market is busy of competitors, where are present the big 4 American company:

- Ford
- Ram
- Chevrole
- GMC

And the two major Japanese and international players:

- Toyota
- Nissan

The Market leader is Ford with a market share of 36% in 2018 and from many years has the crown of most sold vehicle in US. Ram is climbing the ranking and last year reached the second place with 24% of share overtaking Chevrolet at 23%. Then there is GMC with its more professional oriented customer and last the two Japanese carmakers that together stops at 7% of Market Share.

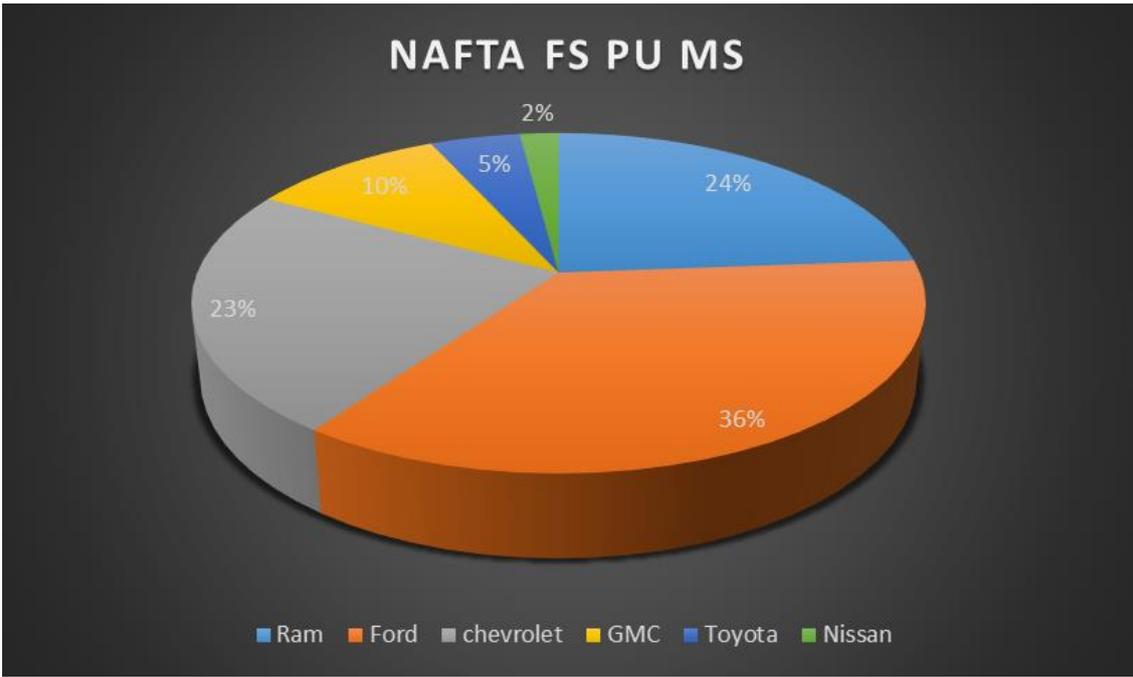


Fig30 NAFTA Full Size Pick Up Market Share 2018. Source: Sim Pivot

The sales distribution reflect the average American customer that leverage on patriotism and consider his nationality as a statement. Pick Up do not represents only a rational working tool but embody the soul of American dream, freedom and self-made man.

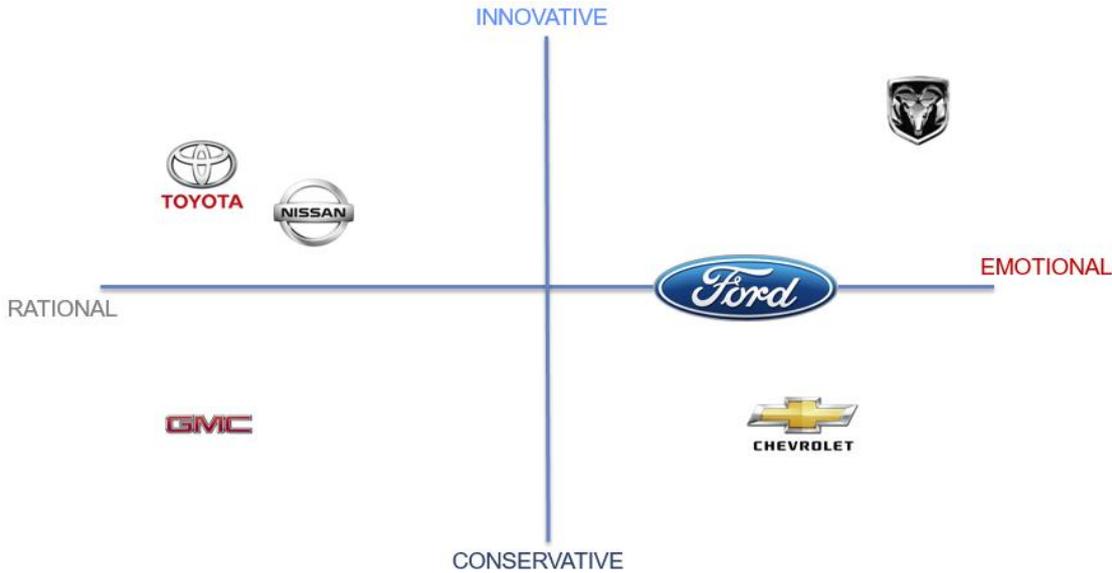


Fig31 NAFTA Pick Up Brand positioning chart

The typical customer of Pick Up Is a male, with a High School/College Education Level, that are self-employed in: Agriculture, Forestry, Construction, Wholesale.

From the positioning chart is evident how the emotional aspect is important for the customer and it is taken into account in more than 80% of sales. Ford as leader is almost balanced between innovative and conservative but plays with the emotional part of customers with Hi-spec and off-road dedicated "RAPTOR".



*Fig32 Ford F150 RAPTOR*



*Fig33 Ram 1500 2019 LIMITED*

GM group instead works with more conservative part of the market, always very strong in North America, declined in more rational soul for GMC brand and emotional one for Chevrolet.

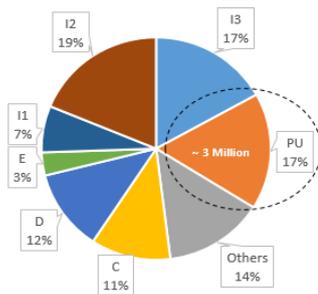
Ram stands out with very aggressive positioning on the emotional side and offering unique features to catch innovative customers. The last product development is focused on:

- Luxury
- Technology
- Comfort

To conquest customer outside the Pick Up segment. Pick Up segment is characterized by high brand loyalty, and gain quote from competitors is slow and long process.

New active lifestyle and revamped patriotism pushed classical UV's and sedan customers to look at Pick Up as possible choice.

2018 US TOTAL MARKET: > 17 Million Vehicles



**SOURCE OF SALES**  
 >25% from UV vehicles

Pickup	60%
I2	11%
I3	9%
I1	7%
Mid Size Car	6%



New RAM 1500 has been developed to increase conquest from passenger car segments



More Luxury  
 More Technology  
 More Comfort

Fig34 Ram US 2018 source of sales. Source: NCB-NVB

Ram is catching the 40% of sales outside the Pick Up segment and in particular from SUV.

## Middle East perimeter

Inside EMEA region, Middle East perimeter involves country of Arab peninsula, in particular GCC (Gulf Cooperation Council) countries plus Jordan and Lebanon (also called as levant). Gulf Cooperation Council is a regional intergovernmental political and economic union consisting of all Arab states of the Persian Gulf. Its member states are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates. The Gulf Cooperation Council was formally establishing on 25 May 1981 and actually it's composed by three constitutional monarchies (Qatar, Kuwait, and Bahrain), two absolute monarchies (Saudi Arabia and Oman), and one federal monarchy; indeed the United Arab Emirates is composed of seven member states, each of which is an absolute monarchy with its own emir.

The purpose of the GCC is to achieve unity among its members based on their common objectives and their similar political and cultural identities, which are rooted in Arab and Islamic cultures, highlighted in Article 4 of statute. Which states: that the alliance was formed to strengthen relations among its member countries and to promote cooperation among the countries' citizens. The GCC also has a defense planning council that coordinates military cooperation between member countries. GCC agreements typically focus on either security or economic coordination. In terms of security coordination, policies have included the creation of the Peninsula Shield Force in 1984, a joint military venture based in Saudi Arabia, and the signing of an intelligence-sharing pact in 2004. The first significant deployment of the Peninsula Shield Force was in 2011 in Bahrain to guard government infrastructure against an uprising there during the Arab Spring protests. Economic coordination included attempts at economic union, though integrative agreements were often lack-lustre in comparison with policy coordination. An agreement to launch a single regional currency similar to the euro by 2010 saw little movement apart from the establishment of a monetary council in 2009. Coordination in tax policy proved fruitful, however: a customs union was implemented in 2015, and the member states began rolling out a value-added tax of 5 percent in 2018. Saudi Arabia and the United Arab Emirates have tended to lead policy coordination. They were the first countries to send troops to Bahrain in 2011 and the first countries to levy the value-added tax.

## Saudi Arabia



Fig35 Saudi Arabia land. Source: Britannica

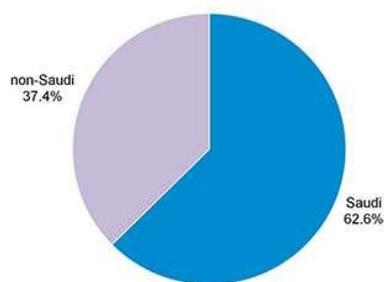
Saudi Arabia has a land area of 2.150.000 km<sup>2</sup> and it extends along a large area of the Arabian Peninsula. Saudi Arabia is geographically the largest sovereign state in The Middle East. The nature of the territory is varied: there is a large arid zone, called Najd, populated by nomadic tribes; along the Red Sea, there are the most important Islamic city, Mecca and Medina; instead, the area along the Persian Gulf represents the most important economic hub for the State, thanks to the presence of numerous oil fields. These allowed Saudi Arabia, which was young by birth, to become an important world business center. The petroleum wealth, tribalism and strong Islamic influence unite and condition the current history of the country. Saudi Arabia also enjoys one of the world's youngest populations; 50% of its 33.4 million people are under 25 years old.

## People

The double proximity of the sub-Saharan area and of states as Iran, Pakistan and India, has influenced the history and characteristics of the Saudi Arabian population; moreover, elements such as tribalism and regionalism have implemented the heterogeneity given by migratory flows, despite many people consider the country's tribes as "pure" Arabs. The migrations from India, Pakistan etc. aren't the only one interested in Saudi Arabia: indeed, hundreds of thousands of people annually arrive in the country from Arab, African and Asia countries to visit the principal Islamic cities. For example, various ethnic groups to the country arrive to Mecca to made the hajj. A little part of the travelers has moved permanently to Saudi Arabia, around the holy cities for religious devotion or because they couldn't return home. Nonetheless, Saudi Arabia has also undergone a strong outgoing migration: in fact, around the 1960s, many people have left the state over the years. Beginning in the

1990s, to combat the emigration, The Saudi government has strongly encouraged a process of Saudization, understood as the entry of indigenous Saudis into the world of work. The government rewarded the employers they hired no migrant workers, but the attempt wasn't very effective because young Saudis didn't want to hold positions lower than the one they studied for and which is usually entrusted to expatriates. Also for this reason, by the early 21st century, the country's total population is constituted by about one-fourth/ one-fifth of foreign workers. It should be emphasized that most specialized technical workers are Europeans and Americans.

Saudi Arabia ethnic composition (by nationality, 2017)



© Encyclopædia Britannica, Inc.

Fig36 Saudi Arabia ethnic composition 2017. Source: Britannica

Saudi Arabia has faced two major demographic problems: the settlement of Bedouins and the influx of foreign labor. The process of regularization of the Bedouins has been quite successful, despite the attachment to tribal origins. The most significant problem is the presence of foreign workers in the Saudi territory. There are no precise numbers available, but world political scientists believe that since the 1950s there has been a flow of millions of people (initially Arabs, then citizens of various regions).

The government has tried to regularize these individuals through a process of naturalization. However, the attempt was not particularly effective: many foreign workers provide their families still residing in their native countries.

## Economy

Saudi Arabia very soon became a modern state, thanks to strong investments made. Between the 70s and 80s unemployment reached very low levels, due to the strong exploitation of the main Saudi resource: oil.

The exploitation of oil started early: the first concession entrusted by Ibn Sa'ūd to a British company dates back to 1923, but it did not exploit it.

After a brief phase of stagnation due to the Second World War, the research and extraction activity saw a strong growth: in 1945 the Ras Tanura refinery was opened. Oil demand was booming.

Already at that time the exodus of numerous foreign workers to Saudi Arabia began, in search of a stable occupation. Many workers were hired to perform the most humble or technical tasks.

Between 1951 and 1953 two huge oil fields were discovered by Arabian American Oil Company (Aramco), in an area south of the old neutral zone Saudi Arabia - Kuwait. Al-Ghawār is one of the world's largest oil fields. It is collocated just south of Dhahran and west of Al-Hufūf, its discovery dates back to 1948, although it was only partial. The oil's presence also influenced other types of business: in fact, the TapLine, the Trans-Arabian Pipe Line, created to link Al-Qayṣūmah in Saudi Arabia across Jordan and Syria to its Mediterranean terminal at Sidon, Lebanon dates back to 1950.

However, the line had a drastic decline as early as the 1970s. During the 1980s only one refinery in Jordan continued to be replenished, as the remaining line was totally closed.

In those same years a solution was found to reduce the distances with Europe, through petrol. Aramco constructed a massive gas-gathering system and, parallel to Petroline, a pipeline for transporting natural-gas liquids, which reached Yanbu' in 1981. Currently Aramco, renamed Saudi Aramco following the nationalization in 1984 (the year in which he was elected the first Saudi president), is one of the most influential and richest companies on the planet. The wealth of Saudi Arabia is in fact given both by the possession of the raw reserves (270 billion barrels, considered the largest in the world), and by the huge daily production of oil (considered the second largest in the world).

The huge oil resources have allowed the increase of investments in the field of education and health, above all against the Saudi citizens (so-called Saudi process).

## UAE

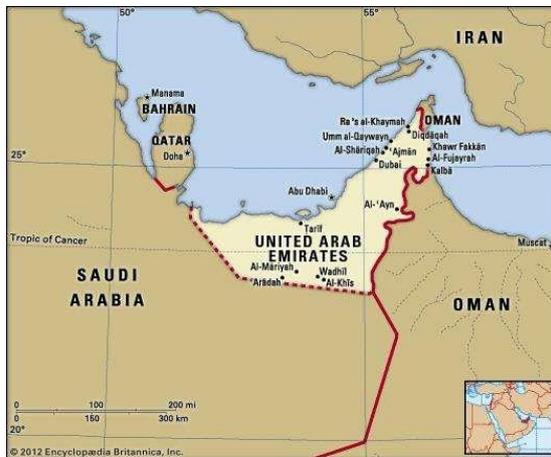


Fig37 United Arab Emirates land. Source: Britannica

Located in the southeastern area of the Arabian Peninsula, The United Arab Emirates border Oman and Saudi Arabia. The territory is predominantly desert and flat, thanks to the waters of the Persian Gulf and Oman Gulf. Most of population lives along the 1300 km of coastline. Along the Oman's border it origins a single mountain range, The Hajar. The country is composed of seven emirates: Abu Dhabi, Dubai, Sharjah, Umm Al Quwain, Ajman, Fujairah and Ras Al Khaimah, but the Abu Dhabi emirate occupies 87% of the total area of the UAE. The UAE is among the countries with the highest immigration rate in the world: indeed, the most of population (that has reached 10 million people, but The International Monetary Fund estimates that the total UAE population will be destined to exceed 11 million inhabitants in 2020) are foreigners. This population's part is composed by workers immigrants from South Asia (especially India, Bangladesh and Pakistan) and, in measure, from other Arab countries and from Iran. Only 1.3 million are citizens UAE.

### The country

When Great Britain announced in 1968 the will to renounce the protectorate, the sheikhs of Abu Dhabi and Dubai take the initiative to form an independent Confederation between the Trucial States. Initially, it was believed to create a single entity, that also includes Qatar and Bahrain. These countries, also under British protection, choose independence and they don't enter in the Confederation. Despite the initially difficulties, in July 1971 six Trucial States- Abu Dhabi Dubai, Sharjah, Umm Al Quwain, Ajman and Fujairah - find an agreement on the federal form of the new state. On 2 December 1971 the United Arab Emirates proclaimed

independence. The last emirate, Ras al Khaimah, enters the Federation only two months later. The first president of the UAE is the sheikh of Abu Dhabi, Zayed bin Sultan Al Nahyan and he is considered the father of the homeland because he governs the country for over 30 years, until his death occurred in 2004. The current president of the UAE is his eldest son Khalifa bin Zayed Al Nahyan, who succeeded him.

The principal political body is the Council, composed of the seven emirs of the country. Indeed, the UAE is an oligarchy. The Council's members have hereditary offices and appoint the president and prime minister, two positions formally elective. The president of the UAE is the Emir of Abu Dhabi and the vice president and prime minister is the Emir of Dubai, as a demonstration of the economic power and the political strength of these emirates.

Despite the dominant family is in power since the beginning of the state, the local population approves it and the internal political situation is stable. The merit of the ruling family is that of having made the population participate in the wellness deriving from oil and commerce; particularly, the social policies concern the citizens of emirate nationality, very important aspect considering the data related to migration. Nonetheless, to avoid instability as happened for the countries involved in the "Arab spring", an important monitoring is carried out especially on some internal groups monitoring of the territory has been made more widespread in the UAE and the control exercised on Islamist groups, in particular on the Muslim Brotherhood.

Always in order to guarantee the political calm, the poorest regions are helped with extraordinary loans; indeed, emirates like Ajman, Umm Al Quwain have levels of economic development lower than those in Abu Dhabi and Dubai.

The legal system adopted in the UAE is based both on the principles of civil law and on Islamic law - the Shari'a. The application of Shari'a is generally limited to use in the courts as an interpretative support, in cases of express lack of legislation in particular matters, or in cases involving religion and morality (for example, cases related to succession, divorce and child custody). The Shari'a is the main source of law and no law can contradict his own principles.

The massive investments made in important sectors as health and education have allowed UAE's growth: from 1990 to 2017 life expectancy at birth has increased by 5.9 years (from 71.5 to 77.4 years), the level of schooling has clearly improved (the years of study went on average from 10.7 to 13.6), their human development index grew by 18.7% from 1990 to 2017 (indeed, in international statistics, the UAE ranks 34th out of 189 countries, within the category Very High Human Development).

Moreover, it's very important the level of woman's education: the level of education secondary is 78,8% of woman, against an average of 45,1% of Arab countries.

Articles 32 of the Constitution provides the worship's freedom; however, it is possible to identify some preponderant religion guidelines: Sunni (85%), Shiites (15%), but a part of population professes other cults (in particular, Buddhism and Christianity).

The influence of Arab culture manifests itself in the dressing's way: men wear a white tunic called kandura, with a headdress called keffiyeh, while women wear black tunics called abayas, with a light veil on the head.

The UAE is very tied to their own traditions. For this reason, it's necessary to respect local values and customs like to avoid effusions in public places, to drink alcohol in public or to eat in Ramadan period.

## Economy

The UAE has developed thanks to the use of its own resource of oil and natural gas and, in a short period, it became one of the most economies on the world stage in the Middle East. The emirates have passed the negative oil market situation thanks to a strong reduction of the hydrocarbons sector's impact compared to other countries (from 60% in 1980 to the current 30%). The particularly favorable geographical positions for commerce and tourism and the political stability have allowed this trend.

Currently, the UAE is one of the highest per capita incomes in the world: US \$ 70,262 in the valuation of the purchasing power parity. Nominal GDP yes ranks second in the GCC area (Gulf Cooperation Council) and it has a growing trend: according to IMF forecasts it will reach 475 billion US \$ in 2020.

Also the UAE economic has suffered from the 2008 crisis: there was a strong growth in the previous period (between 2005 and 2008), followed later by a decrease during the crisis that reverberating on the real estate sector of Dubai, determining the financial difficulties of the Dubai World holding company.

Also the post-crisis period was characterized by an alternation of phases: a first phase of strong growth and a subsequent phase of suffering, especially for the negative effects of the fall in prices international hydrocarbons. Economic indicators show GDP growth rates very positive in 2013 (+ 4.7%), 2014 (+ 3.1%) and 2015 (+ 3.8%) and a performance less brilliant in 2016 (+ 2.7%) and especially in 2017 (+ 0.8%).

Currently the economic picture is relatively stable, even if the limits imposed on oil production from OPEC and the weakening of tax revenues and taxes liquidity conditions have produced calming effects on the development of the country. In 2018, the partial recovery of oil prices and the expansion of public investments have allowed a new acceleration of real GDP growth rates at 2.9% from the international Monetary Fund. To balance the negative effects of lost oil revenues, the country has recently had to rethink its fiscal policy by adopting measures that led to it to a more stringent control on public capital projects and to the limitation of some major infrastructural interventions, especially in the transport field. Despite this, the most public and private projects in progress will continue course and the UAE authorities will continue to seek a balance between the need to reduce and rationalize the huge public spending and the desire not to damage the image of a country that wants to continue to present itself to the world as a successful winning model, opportunity and innovation. The forecasts of the International Monetary Fund estimate the Emirate economy will further increase its pace growth in 2019, with an expansion rate of 3.7%, and will continue its robust performance in the year of the Expo (+ 3.6%) and in subsequent years, with real growth higher or equal to 3% until 2023, confirming the validity of the choices made.

United Arab Emirates have relied on the huge hydrocarbon resources to support its economy from its foundation and still today oil revenues continue to be the focus of government revenue: although they represent just under 30% of total exports, they constitute over 60% of UAE tax revenues. Member of the OPEC since 1967, the Emirates hold the seventh most important reserves oil companies in the world for an amount of 98 billion barrels. Overall, the country holds 6% of world oil reserves. The UAE are also natural gas producers and with 6 billion m<sup>3</sup> they hold the seventh largest substantial reserves in the world. Most oil and gas reserves - around 96% of the total - are concentrated in the Abu Dhabi emirate. The UAE has a well-developed network of internal pipelines that connect the fields oil production plants and export terminals. The chances of further important oil discoveries are rather scarce, but the EOR (enhanced oil recovery) techniques have been used successfully to extend the useful life of existing fields and allowed to double Abu's Dhabi reserves in the last ten years. Currently the Emirates are in fourth place - after Saudi Arabia, Iraq and Iran - among the main ones OPEC producers: in 2017 they produced about 3.5 million barrels of oil per day and other liquid hydrocarbons, of which 2.9 million barrels of crude oil and the remaining part consisting of other liquid hydrocarbons (condensed, natural gas liquids and gains of refining). Once the production restrictions established in OPEC are removed, the country aims to

increase crude oil production at 3.5 million barrels per day. In the presence of limited prospects of new field discoveries, the increases will come almost exclusively from use of EOR techniques in the existing ones of Abu Dhabi. The emphasis on improving recovery rates translates into significant opportunities offered to specialized foreign companies: in the UAE the best technologies are in great demand in the EOR sector, as well as any innovative technique that allows to increase productivity of the deposits and to decrease the costs of exploitation.

Despite being among the world's largest producers of oil and natural gas, the Emirates have long promoted a policy of economic diversification which has made it possible to reduce the weight of hydrocarbons on the formation of GDP and on exports.

The progressive liberation from oil dependence is supported by the development of other sectors and services considered strategic for the future of the country: alternative and renewable energy, tourism, logistics, infrastructure and transport, health services and education, the sector manufacturing (in particular the pharmaceutical, aerospace and automotive sectors), financial services and new technologies.

The strategies useful to guarantee the rapid economic, productive and social development of the country

have been outlined in various policy documents, including Abu Dhabi Economic Vision 2030, Dubai Plan 2021 and above all UAE Vision 2021 and National Agenda. The Agenda points to making the UAE an economic, tourist and commercial center capable of serving a market of over 2 billion people, thanks to the gradual transition to an economy knowledge based on innovation, research and development. The goal of the authorities is to succeed in increasing the contribution of the non-oil sector to 80% of the formation of GDP by 2021.

The government is successful in the process of economic diversification contributing to the private investments that have been concentrated in the numerous Free Zones created in the country that offers total tax exemption and possibilities owned by 100% foreigners, have favored the influx of large foreign investments, enormously contributing to the development of industrial activities and non-oil services to the oil industry.

The policy of economic diversification was also promoted through support guaranteed to SMEs by the government, which aims to increase their impact on training of GDP from 40% to 45% by 2021.

Constructions are among the sectors that have most contributed, so far, to success of the process of economic diversification pursued in the UAE. Most construction

projects are concentrated in Dubai and Abu Dhabi. The other emirates, on the other hand, have a more marginal role, where important also exist development plans. After the 2005-2008 boom, the heavy crisis broke out between 2008 and 2009 and the

gradual recovery in the following years, today the sector is experiencing a phase of uncertainty, in balanced between the hopes set by Expo 2020 and fears of a slowdown in demand and the fall in prices in the real estate sector. Abu Dhabi is focusing a lot on the area of Saadiyat Island, where it is under construction a cultural center with highly prestigious museum institutions - including Louvre Abu Dhabi, Zayed National Museum and Guggenheim Abu Dhabi - and luxurious residential areas, starting from the Lagoons District. Once again, as in the pre-crisis phase, Dubai is the main market for construction companies looking for new projects. If indeed the Abu Dhabi policy is more cautious, Dubai does not give up presenting almost daily new development plans. The most ambitious project is Dubai South: a sort of new Dubai that is rising in the Jebel Ali area and will be able to accommodate one million people. In an area of 140 km<sup>2</sup>, the site of Expo 2020 will be placed; logistics districts, aviation and golf; a huge residential complex and a business park, in addition to that which will become the largest airport in the world, Al Maktoum International Airport.

The growth of the logistics and aviation sectors is an integral part of the plans of economic development of the city: according to the President of Dubai Aviation City Corporation, the construction of Dubai South will contribute to the growth of Dubai's GDP by 32% by 2020. Another sector on which Dubai is strongly aiming and which already represents a part important in its economy is trade. Among the objectives of the government, there is also the increase in the wholesale sector, a sector that - according to the US Bureau of Economic Analysis - US \$ 4,900 billion will be worth globally by 2019.

Dubai aims to carve out an important slice of this market with a new megaproject in the area near Al Maktoum airport: Dubai Wholesale City, presented as the largest wholesale market in the world. The complex - estimated value 8.1 billion of US \$ - will be realized in 10 years.

UAE can count on a modern and efficient infrastructure system, on logistic platforms as port and airport at state-of-the-art and a strong road network. Despite the limited territorial dimensions, the country has airport hubs among the most advanced in the world like the Dubai International Airport (today third in the world for international passenger traffic), international ports of the Jebel Ali level (the largest Middle East seaport) and two major scheduled airlines - Emirates and Etihad

- which are recognized among the best in terms of service quality and number of guaranteed connections.

The presence of very advanced infrastructures and communication links, combined with one strategic geographical position, have contributed enormously to economic growth of the country, favoring the development of sectors such as logistics, trade and tourism. A further infrastructural expansion is planned in view of the Expo. Among the projects most important are the extension of the underground to the Expo site (Route 2020), the expansion of the port of Jebel Ali, the expansion of the Dubai International Airport

(DXB) and the completion of the Al Maktoum International Airport which - once completed - will become the largest airport in the world, with an annual capacity of over 160 million of passengers.

Abu Dhabi International Airport is also expanding: by 2019 the new terminal Midfield will increase the airport's annual capacity to 45 million passengers. It will come also expanded the Khalifa Port, which currently has the capacity to manage 2.5 mln TEU, but which will reach 15 mln TEU by 2030. Development projects in the airport sector are also planned in Ajman – where the completion of an international airport capable of accepting more than is imminent one million passengers a year - and at the Ras Al Khaimah airport, whose capacity will increase by 140%.

As for the internal connections to the country, these are designed above all for road transport and huge investments are destined to the expansion and expansion of the existing roads network and motorways.

Positive signals also come from the railway sector: after the suspension in the 2016, due to the collapse of oil prices. Tender was again banned for the 2nd phase of the Etihad Rail, which envisages the construction of a railway network intended for the purpose to travel the entire territory of the Emirates to the borders with Saudi Arabia and Oman, connecting vital areas such as Jebel Ali Port in Dubai and Mussaffah and Khalifa Port in Abu Dhabi and also the emirates of the north. The project aims to connect the main ports of the country in order to improve commercial connectivity and internal logistics according to stimulating the country's economic growth.



*Fig38 Midfield terminal Abu Dhabi*



*Fig39 Dubai Marina harbor*

In UAE the exercise of an economic activity, although substantially free, is subject to certain restrictions aimed at protecting the interests of the citizens of Emirates. To be able to establish a company in the UAE is indeed required to participate in 51% of a local Sponsors. Usually the UAE partner is not involved in real business activity and its own and its intervention is limited to purely administrative activities. The sponsor's remuneration is established at the same time as the company is set up and consists of pre-established sums or a percentage of profits, or computed on the turnover. An important exception to this rule is represented by the incorporation of companies within the Free Zone. This solution poses limitations (companies cannot

sell goods directly in the "mainland") but offers the advantage that the companies, in addition to enjoying numerous tax breaks, they can be 100% foreign owned. Another exception is the establishment of a branch or representative office, for which it is contemplated the possibility of maintaining 100% foreign ownership. However, besides having to carry out your activity only as specifically indicated in the license, these entities have the obligation to appoint a local agent who must be a citizen UAE or a company owned by UAE citizens.

A Free Zone is delimited section of the national territory that, despite being subjected to the sovereignty of the state itself, it remains outside its territory customs: the economic activities that are inside it are treated privileged compared to the rest of the country (mainland). Created to attract foreign companies and investments, Free Zones turned out to be one important tool in the UAE to support the strategy of economic diversification pursued by the government, contributing decisively to the promotion of trade and development of exports not related to the hydrocarbons sector. Since 1985, date of birth of the first Free Zone, Free Zones have grown in number and dimensions and today represent one of the most successful realities of UAE. Their introduction not only favored economic development and the arrival of huge foreigners investments, but has also contributed to attracting know-how and professionalism from all over

the world precious for the growth of the country. Some Free Zones have a "generalist" nature and are designed to include one multiplicity of economic and commercial activities, while others have a vocation specialist and allow the exclusive performance of specific activities. So is important to choose carefully the area in which to establish the company, selecting the Free Zone best suited to the sector in which the company will operate.

The Free Zones are managed by independent authorities and for this reason the regulations vary

from one area to another. In general they guarantee the following advantages:

- 100% foreign ownership
- Exemption from taxation on income (for a variable period depending on the area)
- Freedom to repatriate capital and profits
- Exemption from customs duties for goods in transit (provided they are not introduced in the National territory)
- Simplified procedures for company formation and staff recruitment
- State-of-the-art infrastructures and privileged position, close to sea ports, airports and customs with the relative logistic structures
- Wide availability of offices and warehouses for rent and, in some cases, possibility of have a "virtual office" at a reduced cost

In addition to tax and customs exemptions, the biggest difference between mainland and Free Zone it concerns the regulation of property: unlike what happens to companies in the mainland, in fact, companies based in the Free Zone can be entirely owned by a foreign investor.

Settlement in a Free Zone also includes constraints because it limits the possibility to operate on the domestic market: it must therefore be carefully evaluated if the market domestic represents the main objective of the business activity.

In UAE there is no tax on personal income. As for the taxation on business activities, this is regulated at the local level and the emirates of Abu Dhabi, Sharjah and Dubai have drawn up organic legislation in matter. The direct tax is applicable to the net profit produced by all institutions and companies, with or without legal personality, who carry out commercial or industrial activities in UAE. Direct company taxation is the only direct taxation in the country, but so far it has only been applied to major oil and gas companies and companies of the banking sector. For all other entities, the legislation - even if it exists - does not come

applied. Apart from these cases, therefore, in the Arab Emirates there is no direct taxation. As for indirect taxes, in almost all the UAE those who live in units Residential or commercial units are required to pay a fee called Property Tax. There are also

consumption taxes for hotel and restaurant services: they are the so-called "municipality service charges", which vary according to the individual emirates. Since July 2016, a US \$ 9.53 fee has also been introduced on all passengers in departure from the airports of Dubai, Abu Dhabi and Sharjah. As regards the social security contribution, only the companies that they employ with

Employment contract with UAE citizens are obliged to pay the same one share of the salary, paid in special pension funds. It is not for non UAE citizens no retirement benefits are envisaged.

Customs duties are very low: for most of the goods imported a 5% tax is fixed (with the exception of products and derivatives of alcohol and tobacco discount higher duties).

Duties can be excluded for certain categories of products, for example in the case of import of materials to be used for the production of goods to be re-exported. Furthermore the goods, once introduced in the GCC area, they are no longer subject to taxation in the case they transit member countries. There is no registration tax in UAE. Transfer taxes are not applied of movable assets, while on real estate transfers there is a sales tax of 4% (50% divided between seller and buyer). There are no inheritance taxes and there are no taxes on the transfer of the income between subsidiary and parent company, on capital gains, capital gains and dividends, on contributions and wealth wealth. There are no regulations relating to transfer prices, Controlled Foreign Companies (CFC), undercapitalization, or special schemes for holding companies and tax credits for taxes paid abroad. From 1 January 2018, Value Added Tax (VAT) was introduced for the first time. Value Added Tax), with a rate of 5%.

## DUBAI 2020

From 20 October 2020 to 10 April 2021, Dubai will host the universal exhibition, an event that will bring together 180 countries and will attract 25 million visitors from all over the world of which, for the first time, 70% will come from abroad. This is the first exhibition realized in Middle East, Africa and South Asia region (MEASA) and the first hosted by an Arab country.

Dislocated within a site of 438 hectares, with a direct connection to three airports international and an articulated transport system, Expo 2020 aims to offer its visitors

the opportunity to discover the latest in technology and innovation that arise from collaboration and partnership between people and ideas. The Expo it will also be an opportunity to observe scenic architecture, watch performances suggestive and to experience the interaction between cultures from all over the world.

Dubai is a multicultural city in which many nationalities coexist peacefully, represents a perfect venue for such an event. The success factors of Dubai are many:

- Access to world markets  
Dubai is 4 hours flight time from a third of the world population, while two thirds are reachable with 8 hours of flight. Thanks to its strategic position, the city has established itself as the global logistics hub for linking the main international markets.
- Easy Business  
Dubai has introduced policies to create an environment for safe business conduct, stable and well regulated. Even the first Free Zone in the country (Jebel Ali Free Zone) was born in Dubai.
- Investments in tourism and trade-friendly ecosystem  
Dubai is committed to creating a safe and welcoming environment for business, investment and tourism.
- Considerable amount of attractions  
Dubai offers its visitors versatile, dynamic and spectacular entertainment offers.
- Excellent infrastructure  
With its infrastructure of excellence, Dubai offers visitors travel experiences memorable. Roads, ports and airports are modern and efficient. Dubai was also the first city of the Arabian peninsula to have invested in the construction of a subway.

Estimates impact of Expo on the growth of Dubai economy are very variable. One of the most authoritative, which of the Monetary Fund, formulated in July 2014, was then denied by the economic slowdown associated with the collapse of oil prices occurred in 2015. In any case, the Expo is destined to sustain an economic acceleration, to favor the employment growth and driving bank credit levels. Surely, the impact in the short and long term it is to strengthen confidence in the economy and image international of the country. The sectors of tourism, commerce, transport, travel, construction and finance will be the main drivers of growth. The strengthening of the infrastructure will also bring benefits in terms of higher productivity. Expo also will enable a strengthening of human capital capacity thanks to the precious experience gained in managing an event of this magnitude.

According to the Oxford Economics Report, commissioned by the Organizing Committee, between 270,000 and 300,000 jobs will be created: 40% in tourism, 30% in transport and in logistics, the rest in construction.

According to local authorities, the overall cost for organizing the event is around around 8 billion US dollars, while overall profits, if successful, are estimated around 17 billion US dollars. It is estimated a flow of foreign investments between 100 and 150 billion US dollars in construction, financial services, infrastructure and IT services. In the six months of the event The revenue of the emirate is estimated at around US \$ 38bn.

On the other hand, there is the possibility that the Expo may distort stability macroeconomic, determined by higher costs than estimated, in addition to risks of excess supply in the real estate sector and pressures in the distribution chain that could lead to increases in the costs of raw materials.



*Fig40 Site of EXPO Dubai 2020*

## Oman



Fig41 Oman land. Source: Britannica

Oman borders with Yemen, Saudi Arabia and the Arabian Sea. Despite the sea's proximity, the most of the territory consists of a large desert area; indeed, the interior land's part, called Rub' al-Khali, is devoid of water and trees. Instead, the coastal area is much more hospitable and it is very important for the country's economy. Indeed, both along the northern coast and the southern coast, particularly in the Dhofar region, grapes and other very famous products are grown. Agriculture is not the only resource of the country. In the years politics has encouraged tourism and culture: travelers come from afar to unspoiled landscapes. The capital, Muscat, is located on the coast and is much visited by tourists, thanks to its particular architecture, a mixture of traditional and modern. It is also an important commercial port and commercial centre.

Over the centuries, the proximity to the sea and the production of elements such as incense and metals have made Oman a disputed territory between different empires.

First, Portugal conquered Muscat and retained control of the city until 1650.

Until the 21st century the control of Oman was maintained by the dynasty of Âl Bū Sa'dd, which over the centuries had extended Oman's dominion over a large part of the Persian Gulf. So long a control was possible also thanks to the strong friendship with the United Kingdom. The lack of innovation and modernization led to the coup of 1970. Actually, the region is still the domain of Bedouin nomads, although today it is also crisscrossed by oil and gas pipelines.

## People

Oman's population is made up of many ethnic groups: indeed, it is predominantly Arab, but there are a lot of groups from different countries. The coast of Al-Bāṭinah is inhabited by a large group of Baloch, coming from Pakistan and Iran. For many years a group of Persians and Arab merchants settled in the capital Muscat. The plain that stretches along the Dhofar coast is inhabited by large Arab groups. These coastal group are different by the Arab groups living in the Dhofar mountains, known as *ibālīs*, or "people of the mountains. Probably, *ibālīs* are descendants of people from the Yemen highlands.

Islam is the prevailing religion. Several Islamic currents are widespread in the region: the largest group is the Ibādī group, a moderate Khārijite faction. The group has characteristics similar to the Sunnis: contrary to these, Ibādī elect the imam (while in the Sunni law the imam's office is hereditary). Another minority current is the Shiite.

The population is mainly located in major cities such as Al-Bāṭinah, Shinās, Suhār, Al-Khābūrah, Al-Maṣna'ah, and Barkā. The proximity to the sea has allowed the development of fishing and irrigated cultivation. However, many rural communities live at the foot of the mountains. In addition to small villages, a number of sizable towns, including Nizwā, Bahlā', Izkī, and 'Ibrī, are found on the inland, or southwestern, side of the Western Ḥajar.

## Economy

The Oman economy is based on oil, thanks to its natural gas reserves, estimated at 849.5 billion cubic meters, ranking 28th in the world, and production in 2008 was about 24 billion cubic meters per year. The DOP limited liability company (Petroleum Development Oman) extract the oil. Following the 1970s oil crisis, Oman doubled their oil output between 1979 and 1985. Between 2000 and 2007, production fell by more than 99%, from 972,000 to 714,800 barrels per day. Production has recovered to 816,000 barrels in 2009, and 930,000 barrels per day in 2012.

There is a decline in oil production, for this Oman has tried to diversify the economy by investing in new sectors. Agriculture and industry occupy a small branch of internal PIL: especially dates, limes, cereals and vegetables are cultivated, but exports are very low also due to the geographic conformation of the country.

The push to diversify the economy began in 1988 when, after a collapse in oil prices, Oman experienced a profound economic crisis.

The tourism sector is growing strongly, thanks to the numerous investments made. Among the main tourist attractions there is the Khareef Festival held in Salalah, Dhofar. This event is famous above all for the climate: taking place in August, the month of the monsoons, the climate is particularly mild and the vegetation is luxuriant, characteristics that are usually infrequent in Oman. The capital, Muscat, was chosen as the Capital of Arab Tourism of 2012.

The Oman Ferries Company maintains the two diesel-powered, high-speed, car ferries – Shinas and Hormouz. The ferries are used for travel between Muscat and Khasab, area strategically located in Musandam on the southern tip of the Strait of Hormuz and is controlled by Oman. The area that separates Musandam from Oman belongs to the United Arab Emirates.

A free-trade agreement with the United States took effect 1 January 2009, eliminated tariff barriers on all consumer and industrial products, and also provided strong protections for foreign businesses investing in Oman.

The Oman's workforce is predominantly foreign, even if the average salary of a foreign worker is lower than that of a citizen. This relief does not discourage foreigners also because often, as happens in India, a salary in Oman is 4-5 times larger than that of the country of origin. The largest foreign community is from the Indian states of Kerala, Tamil Nadu, Karnataka, Maharashtra, Gujarat and the Punjab.

The home states receive from foreign workers approximately US\$30 billion annually; usually, salaries are less than US\$400.

## Kuwait



Fig42 Kuwait land. Source: Britannica

The small size and location in one of the most desertified areas has not prevented Kuwait from growing and currently having one of the highest per capita incomes in the world. Located in the northern part of the Persian Gulf, Kuwait borders with Saudi Arabia and Iraq.

Fundamental to the development of the country is the Port of Kuwait Bay, an important commercial center since the 18th century; at the time the Bedouins had created an extremely strong naval trade network. Historically, in fact, the growth and wealth of the small state have been linked to trade. In the 18th the family Āl Ṣabāḥ, which had formally established the figure of the sheikh, had strengthened trade with foreign states and for this reason in a short time Kuwait became a great metropolis. However, despite the large buildings and typical structures of the metropolis, the State has maintained a substantially conservative character.

The wealth accumulated over the centuries was the cause of the war that broke out in 1990, when Iraq tried to conquer it. The consequences of the war were huge and destructive, although Kuwait, by retaining its autonomy, managed to recover. The Iraqi attempt failed due to the intervention of a United States-led UN coalition, which had profound interests in Kuwait autonomy (and above all, in the failure to upgrade Iraq). Currently the conservative character of Kuwait has not prevented the achievement of important goals, such as universal female suffrage.

## People

The population has for years presented strong class distinctions, which have only been overcome following the discovery of oil in the 1930s and with its trade. Before that time the strong tendency to centralization had fueled these differentiations. Currently it is possible to identify only one particular class, the class called Banū (Banī) `Utūb, which corresponds to the merchant class.

As with many other states in the Persian Gulf, the population is predominantly foreign workers. The Government of Kuwait has limited the possibility of naturalization, establishing selective criteria for the recognition of citizenship (in particular, the family to which they belong must be a citizen of Kuwait since 1920). Many rights are not granted to foreign workers; this is a consequence of the Iraq war and Kuwait's attempt to guarantee the preservation of a national spirit.

Currently the most important ethnic groups in Kuwait are the Bedouins and the Persians.

## Economy

While other Persian Gulf countries have tried to diversify their economy, Kuwait has invested little in other sectors such as agriculture and tourism (also due to the geographical nature of the territory). The GDP is in fact made up only to a small extent by these sectors (oil-related activities account for over 50% of GDP). However, Kuwait has recently recognized the importance of economic differentiation and for this reason has announced a four-year investment plan to strengthen infrastructure and refineries. The attempt is to start limiting the incidence of oil.

The predominant activity concerns oil, in all its forms. The extraction, processing of crude oil and trade to foreign countries allowed Kuwait to become increasingly rich. The main activity certainly concerns investments abroad. The oil network began its development even before the Second World War, when in 1934 the Kuwait Oil Company (KOC) was granted exploration permits. However the company, set up in equal parts by a British company (British Petroleum Company) and an American company (Gulf Oil Corporation), found oil only 4 years later. The world conflict halted exploration activities and network development. Until the 1950s the Neutral Zone remained unexplored, but soon some companies (the American Independent Oil Company and the Getty Oil Company) obtained concessions, thanks to which oil was also discovered in the north of the country.

In subsequent deaths the Koc, the company that had begun exploration in the state, had been totally nationalized; the right to precise discounts was guaranteed for the previous owners. The nationalization activity also concerned the company KNPC (Kuwait National Petroleum Company), established in 1960 with investors from Kuwait. The predominant activity of the company was the control of supply and distribution of petroleum products, first in the state and then abroad.

The characteristics of oil wells in Kuwait allow production with extremely low costs: the main characteristic is the high productivity linked to the possibility of variation in a short time. This factor makes it possible to eliminate many storage tanks and the related costs. Furthermore, the position of the various storage tanks allows the use of gravity and not of pumps for loading operations. In fact, the position on crests set back at a height of about 90 meters allows this type of exploitation and the consequent further reduction in costs.

From the estimates made, it is likely that Kuwait has recoverable reserves to guarantee the same current production for 150 years, despite the huge damage caused by the Iraq war (during the conflict, about 6 million barrels a day were burned, with 75 of the 90 oil wells burned down). The damage of the war was healed already in the second half of the 90s and this allowed the economy to continue to grow. Kuwait has no important minerals, but has large amounts of natural gas (especially combinations of natural and raw gases).

The economy had a decline in 2017, equal to approximately -3.3%, caused by a drop in hydrocarbon prices. The levels of 2018 and 2019 recorded growth of 2.3%. The IMF forecasts for this year and for 2020 additional growth levels of 4.1%.

## Qatar



Fig43 Qatar land. Source: Britannica

Qatar is independent emirate that borders with Saudi Arabia and United Arab Emirates and it overlooks Persian Gulf. Immediately, the Islamic caliphate exercised power over Qatar; in the 19th century, after the succession of local and foreign dynasties, Qatar was under the control of the dynasty Āl Thānī and of England. The dynasty in fact maintained tight ties with the British region, first to defeat the Ottoman Empire and then to govern with stability. Qatar became an independent state in 1971. Also after this stability has been encouraged thanks to close relations with the world powers.

Natural gas and oil are Qatar wealth's sources; this abundance allows most citizens to have a high living's standard.

Thereafter, the monarchy continued to nurture close ties with Western powers as a central pillar of its national security. Qatar has one of the world's largest reserves of petroleum and natural gas and employs large numbers of foreign workers in its production process. Because of its oil wealth, the country's residents enjoy a high living standard and a well-established system of social services. The capital is the eastern coastal city of Doha (Al-Dawḥah), which was once a centre for pearling and is home to most of the country's inhabitants. Radiating inland from its handsome Corniche, or seaside boulevard, Doha blends premodern architecture with new office buildings, shopping malls, and apartment complexes. Qatar's traditions draw on a nomadic past and practices that are centuries old, from hand-woven products to falconry. However, the country's population is urban and coastal, its daily life is thoroughly modern, and its rulers have sought to enhance civil liberties. The press

is among the freest in the region, and though they are religious and traditional, Qataris pride themselves on their tolerance for the cultures and beliefs of others. On the status of the country's large expatriate community, the ruling emir has noted "in Qatar, they find security and a dignified livelihood."

## People

The population of Qatar is constituted only to a small extent by citizens; the wealth and development of the 1970s led many foreign workers to move from India, Pakistan and Iran. Since its origins, the population of Qatar had nomadic origins due to the settlements of Bedouin nomads.

Although the official language is Arabic, the most common language is a typical Gulf dialect, similarly used in other states. Another language spoken is English. The strong ethnic component manifests itself in the additional languages that are spoken: Urdu and Persian.

## Economy

The main sources of wealth in the Qatar are oil and natural gas. Oil was first discovered in 1939 and produced only after 10 years.

Since the beginning of oil production, the citizens of Qatar have tried to differentiate the economy, thanks to pearl fishing and traditional fishing. Before economic fluctuations and oil price instability, citizens had a very high per capita income.

Initially, a consortium of European and American companies, called IPC (Iraq Petroleum Company) owned the Qatar oil concession.

Following the nationalization, state-owned Qatar Petroleum was created. This body currently oversees oil operations. Natural deposits belong instead to private companies.

Qatar has tried to differentiate the economy by investing heavily in natural gas. This investment has created strong debts, but has strengthened the existing gas fields. The high price of oil has allowed the economy to stabilize.

Together with international companies specialized in the collection and refining of oil, Qatar has developed its natural gas resources, especially the North Field basin.

Natural gas surpassed oil as the largest share of government revenues and the country's GDP in the first decade of the 21st century.



## People

The population is composed in a practically equal way by citizens and foreigners: the foreign inhabitants come from states like India, Iran, Pakistan. Foreigners from Great Britain and the United States are not lacking. The composition of the population conditions the language used: Arabic as the first language, English as the second compulsory language at school level. A small part of the population lives in villages built in the northern part of the state and lives mainly from agriculture, in particular from the cultivation of the gardens that arose following the artificial irrigation practiced for years. This technique allowed the area in question to become fertile, unlike the rest of the state, desert and inhospitable. The villages, however, are rudimentary and often consist of houses called "barasti", obtained from the branches of the date palm. A large part of the population prefers to live in the city for greater opportunities.

## Economy

Bahrain has developed a diversified economy based not only on oil but also on sectors as diverse as the manufacturing and tourism sectors. The choice is obligatory, as the oil supply is in the terminal phase. Bahrain was one of the first nations to discover oil and for many years the main activities were the production and refining of crude oil and natural gas.

Trade and shipments have strengthened the manufacturing and financial sector. Currently the most developed non-oil sectors are petrochemicals, ship repair and aluminum production.

The growth of the United Arab Emirates partially countered the development of Bahrain; however it remains the most important commercial and financial center of the Gulf. Some areas have been strongly nationalized, such as the production of aluminum, owned by the state. In this sector the privatization process has been frustrated (in other sectors, such as natural gas production, the Government has encouraged privatization).

The discovery of large oil wells in neighboring countries such as Saudi Arabia has led to further diversification of investments. Companies like Bapco began a process of upgrading and improving refineries in the 1990s. Although it is believed that the reserves are dying out, the Government has granted some companies to carry out explorations in the soil.

The banking and financial system of Bahrain is strongly advanced, thanks to the huge investments made by the government. The banking and insurance sector

strongly contribute to the growth of the country. The predominant activity is that of offshore bank. The banking system is formed by the central bank, which issues the circulating currency. The system is also formed by commercial and local banks and investment banks.

The strategic position in the Persian Gulf has allowed Bahrain to develop trade relations with other states; this has also allowed the strengthening of exports, especially of aluminum and refined petroleum products.

Openness to trade and close relations with other states have also transformed Bahrain into an open and cosmopolitan state, unlike other neighboring countries. For these reasons many scholars have spoken of a process of Westernization of Bahrain.

## Jordan



Fig45 Jordan land. Source: Britannica

Jordan is Arab country of Southwest Asia, in the rocky desert of the northern Arabian Peninsula. Jordan is a young state that occupies an ancient land, one that bears the traces of many civilizations. Separated from ancient Palestine by the Jordan River, the region played a prominent role in biblical history. The ancient biblical kingdoms of Moab, Gilead, and Edom lie within its borders, as does the famed red stone city of Petra, the capital of the Nabatean kingdom and of the Roman province of Arabia Petraea. Part of the Ottoman Empire until 1918 and later a mandate of the United Kingdom, Jordan has been an independent kingdom since 1946. It is among the most politically liberal countries of the Arab world, and, although it shares in the troubles affecting the region, its rulers have expressed a commitment to maintaining peace and stability. The capital and largest city in the country is Amman—named for the Ammonites, who made the city their capital in the 13th century BC. Amman was later a great city of Middle Eastern antiquity, Philadelphia, of the Roman Decapolis, and now serves as one of the region's principal commercial and transportation centres as well as one of the Arab world's major cultural capitals.

### People

The Jordan's population consists of around 10,000,000 people, with a high rate of young people (over 35% of the population is made up of children under 15). The growth rate is strongly higher than the world average. The overwhelming majority of the people are Arabs, principally Jordanians and Palestinians; there is also a significant minority of Bedouin, who were by far the largest indigenous group

before the influx of Palestinians following the Arab-Israeli wars of 1948–49 and 1967. Jordanians of Bedouin heritage remain committed to the Hāshimite regime, which has ruled the country since 1923, despite having become a minority there. Although the Palestinian population is often critical of the monarchy, Jordan is the only Arab country to grant wide-scale citizenship to Palestinian refugees. Other minorities include a number of Iraqis who fled to Jordan as a result of the Persian Gulf War and Iraq War. The indigenous Arabs, whether Muslim or Christian, used to trace their ancestry from the northern Arabian Qaysī (Maʿddī, Nizārī, ʿAdnānī, or Ismāʿīlī) tribes or from the southern Arabian Yamanī (Banū Kalb or Qaḥṭānī) groups. Only a few tribes and towns have continued to observe this Qaysī-Yamanī division—a pre-Islamic split that was once an important, although broad, source of social identity as well as a point of social friction and conflict.

## Economy

The composition of Jordanian GDP testifies to the good ability to diversify the economy. It is made up of a third from commerce and finance, while the transport and communications sector covers about a fifth; roughly the same proportion is covered by mining and manufacturing. One quarter of GDP is made up of public expenditure, which involves one third of the country's workforce. In 2018 Jordan's nominal gross domestic product (GDP) accounted for 42.000 billion US dollars and around 4.200 US \$ per capita.

Over the years the Jordanian government has always sought help from foreign states in order to face the recession and the instability of its economic situation. Historically, the first more intense economic maneuvers have been implemented since 1999, following attempts by the IMF and the World Bank to lower Jordan's public debt (attempts such as Jordan's entry into the World Trade Organization and the privatization of some companies).

The economic crisis of the 2000s was also accentuated by the heavy trade sanctions imposed by the United Nations, following the strong support that Jordan gave to Iraq, led by Saddam Hussein, in an attempt to annex Kuwait.

Indeed, these sanctions mainly affected commercial relations between Jordan and Iraq, which had been the main trading partner.

The Jordanian economy has grown since 2003, following the outbreak of the war in Iraq; Jordanian forces have in fact been involved in the reconstruction of the country, with the consequent growth of the construction industry.

# Lebanon



Fig46 Lebanon land. Source: Britannica

Lebanon is a small sovereign state located between the western world and the east: in fact, to the west it overlooks the Mediterranean Sea and it borders Syria to the north and east and Israel to the south. The capital is Beirut, where about half of the entire population of the state lives.

From a cultural point of view, the history of Lebanon is rich: Lebanon was the site of some of the oldest human settlements in the world as the Phoenician ports of Tyre (modern Şūr), Sidon (Şaydā), and Byblos (Jubayl). Lebanon became a contemporary state in 1920, when France established the state of Greater Lebanon. In 1926 the form of government adopted is the republic and in 1943 Lebanon achieved independence. The geographical position and history have greatly influenced the Lebanese culture

## People

The main feature of the Lebanese population is heterogeneity: historically Phoenicians, Greeks and Armenians have occupied this territory. Currently the Armenian and Kurdish component is very strong and this also influences the language: in fact, although Arabic is the main language, the population speaks mainly Armenian and Kurdish.

## Economy

Factors such as the internal civil war and the Siria's crisis have strongly influenced the economy, which for many years had been thriving. The civil war and the subsequent reconstruction of the destroyed infrastructure led to a sharp increase in public debt: in order to increase investments, tax rates were greatly reduced. However, the investments concerned only the infrastructure sector and in particular the launch of Beirut as a financial and commercial center, creating large income disparities within the population.

Despite Lebanon's uneasy economic recovery, its economy remained resilient in the face of the 2008 global economic recession.

The 2008 crisis had little influence on the Lebanese economy, which managed to "isolate" itself through its export program. At the same time, the growth of infrastructure investments has given confidence in possible economic growth.

The GDP has slowed considerably due to the war in Syria: it actually goes from 8% to 2%. This depended primarily on Lebanon's economic dependence on Syria and, secondarily, on the high number of Syrian refugees fleeing to Lebanon.

Lastly, Lebanon has been hit by a strong financial crisis due to a high public debt / GDP ratio (over 150%). Investments have fallen sharply, further reducing consumer confidence.

## Ram Middle East business model

Middle East represents a new market in a global strategy growth of the brand. Although a very different market, with different customers, compared to US (Ram domestic market) Middle East is the first market outside NAFTA for Full Size Pick Up.

### Full Size Pick Up Market

The total vehicles industry in ME accounted for 1.100.000 units in 2018, of which 82% are passenger cars and 18% LCV. Of an industry of 200.000 LCV the 66% are Pick Up.

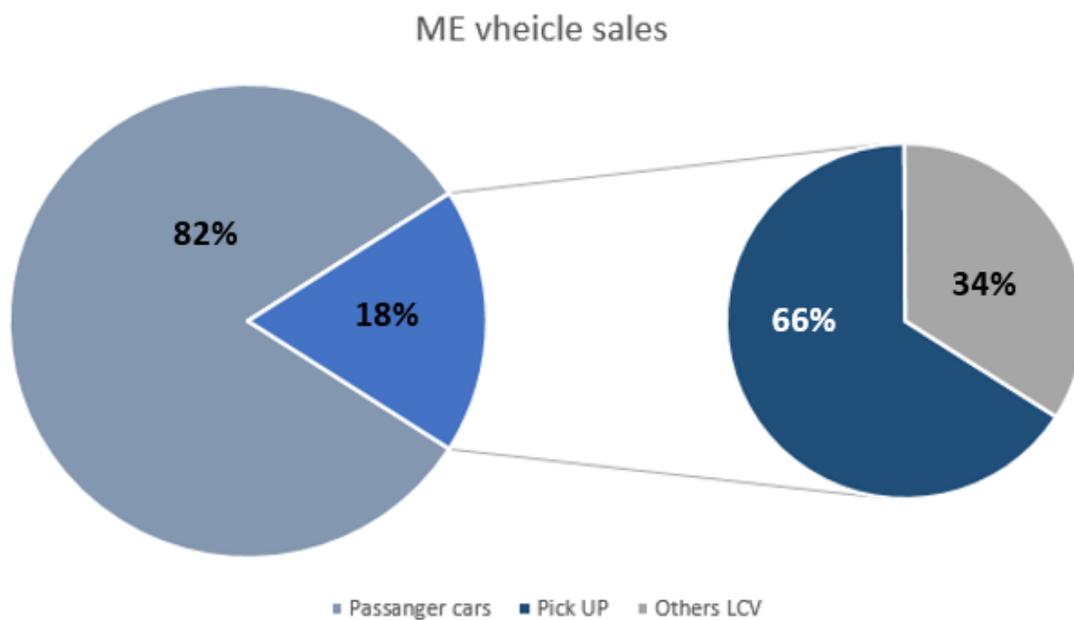


Fig47 LCV weight on automotive industry 2018. Source: MEAC

In Middle East Pick Ups represents the third segment, after large SUV and Sedan, on the overall vehicle industry and the most used commercial vehicle. The reason why Pick Up are so important for the market are related in particular to the mission. Wide lands, not paved road in the desert or in building sites requires capabilities of 4x4 vehicle to carry items.

The missions are very different:

- Bedouins moving in the desert carrying all kind of staff
- Self-employee with their various missions
- Oil company employees to move between oil wells.

All that require reliable and reparable vehicles able to work in hot and sandy conditions. Pick Up are the best vehicles to satisfy customers' needs. Market divides Pick Up in two different classes:

- Mid-size Pick Up also called "1ton" Pick Up.
- Full size Pick Up are the real "American Truck".

This is a US classification and relay on vehicle's footprint. Mid-size Pick Up have smaller size and are the classical Eurasian Pick Up able to carry 1ton. With a simple and sturdy construction such rigid axles and leaf springs are the preferred choice as workhorse from local workers. Competitive price point (starting from 10.000\$) and simple reparability are two winning point of this vehicle class. Toyota, thanks to the long lasting presence on the market and reparability of their products, is undisputed market leader with a market share close to 63% in the segment.



*Fig48 Ram 1500 Classic SPORT*



*Fig49 Toyota LC Pick Up*

Full size Pick Up massive with length close to six meters and width over 2 meters and represents the classical US size. Full size Pick Up matches its size with as much powerful engines; It's here where ram plays its role. Full size Pick Up are divided in two main line:

- Light duty
- Heavy duty

Light duty maintains the same size of Full size Pick Up with limited load capability and are more drive oriented, offering better comfort and performance. In Middle East the customer profile of light duty truck, rely on self-employee with medium/high income and more than one car. The vehicle usage is related as general purpose vehicle for working activities and leisure activities during spare time. It is one of preferred car support for desert sport activities and it is also an alternative for large SUV.

Heavy Duty line are even bigger and focus on load capabilities. They are divided into load classes, covering from class 2 truck up to class 5 truck. Both missions and

customers are different compared with light duty trucks. Heavy Duty trucks are employed in heavy working condition in particular in building sites and oil wells, or as special purpose vehicles thanks the variety of upfit that can support.

Full size Pick Up has industry have seen a contraction of 27% in the last five years tracing the oil price drop and the general slowdown of GCC economy. LCV market is a good indicator of economy strength and health. Full size Pick Up Is continuing growing inside the Pick Up segment, gaining a quote from 6,2% in 2014 to 10,7% in 2018. Full size Pick Up are always more appreciated from private customers and big companies thanks their capabilities and versatility bonded with a social status that is important in Islamic culture. As key market where play outside NAFTA are present all four American bigger Pick Up company: Chevrolet, Ford, GMC and Ram.

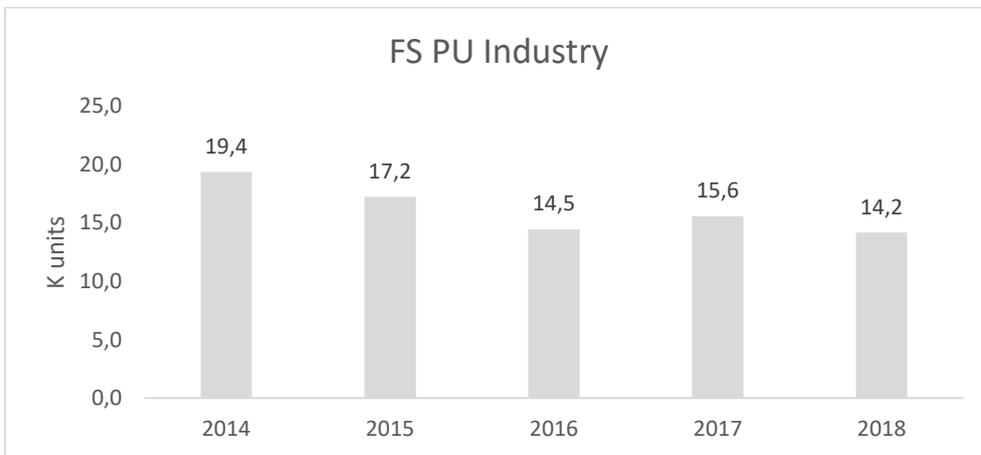


Fig50 Full Size Pick Up Industry evolution, ME perimeter. Source MEAC

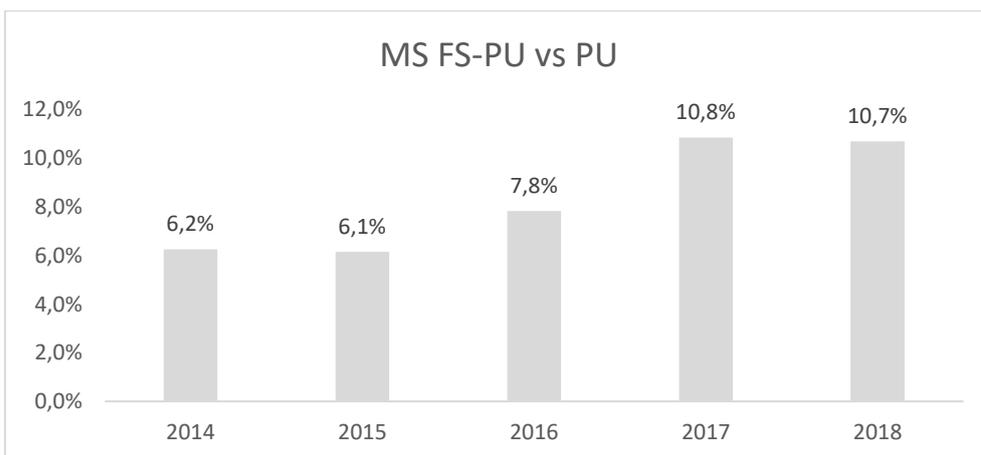


Fig51 Full Size Pick Up weight over total Pick Up Industry evolution, ME perimeter. Source MEAC

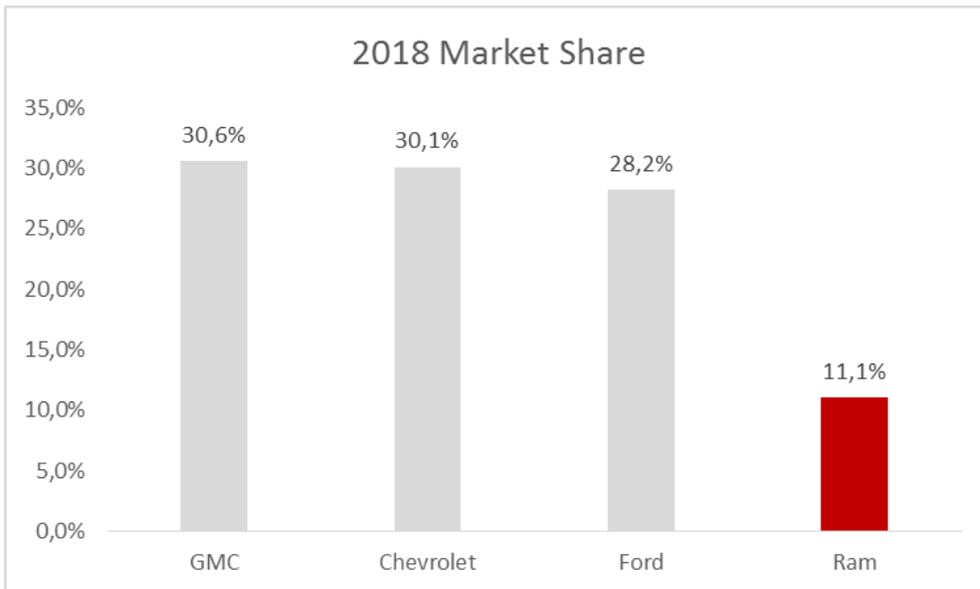


Fig52 Full size Pick Up market share 2018. Source: MEAC

## Ram Marketing and Positioning

### Competitive battleground

In the competitive environment, all Brands show products with similar capabilities on entire line up with comparable trim. Here are reported the competitors of Ram 1500.

- Ford F150
- Chevrolet Silverado
- GMC Sierra



Fig53 2019 Ram 1500 LIMITED



Fig54 Ford F150



Fig55 Chevrolet Silverado



Fig56 GMC Sierra

Exsternal dimentionions

(Values in mm)	RAM 1500	Ford F-150	Chevrolet Silverado	GMC Sierra
Length	5916	5890	5885	5885
Width	2084	2029	2062	2063
Height – 4x4	1972	1961	1986	1918
Wheelbase	3673	3683	3645	3745
Box Length	1711	1676	1760	1775
Box Width	1687	1656	1641	1775

Capabilities

(Values in kg)	Ram 1500	Ford F-150	Chevrolet Silverado	GMC Sierra
Curb weight	2340	2218	2404	2469
Payload	817	943	803	730
Towing cap.	5121	4989	5306	4218
GVWR	3221	3175	3220	3220

## Powertrain

	RAM 1500	Ford F-150	Chevrolet Silverado	GMC Sierra
Powertrain	5.7L V8 Hemi / 8-spd AT	5.0L Ti-VCT V8	6.2L ECOTEC V8	6.2L ECOTEC V8
Hp	395 @5600	395 @5750	420 @ 5600	420 @ 5600
KW	295 @5600	295 @5750	313 @5600	313 @5600
Torque[N-m]	556 @3950	542 @2750	623 @ 4100	623 @ 4100

## Trim comparison

Model/Trim	Ram 1500	Ford F-150	Chevrolet Silverado	GMC Sierra
luxury	Limited	Platinum	LTZ	Denali
Premium lifestyle	Laramie	Lariat	LT	SLT
Off road oriented	Rebel		Custom Trail Boss	
Premium work	Big Horn	XLT	Custom	SLE
workhorse	Tradesman	XL	Work Truck	Sierra

Ram 1500 is aligned with competitors on dimension and general capabilities, where it really stands out is in comfort and luxury achievement thanks a series of class exclusive features that satisfy the customer request of new status of truck. Private customers and small company owners do not consider anymore the truck as simple work tool, but they want that the vehicle is a mirror of their activity and reflect the status reached with their work "new and showy truck stands for wealthy and solid activity". Ram with its last Pick Up met the customer's demand offering a new level of truck more in line with premium car segment that classical LCV world.



Fig 57 Interior comparison, clockwise from top left: Ram 1500, Ford F150, GMC Sierra, Chevrolet Silverado

Comparing top trim interior ( Chevrolet and GMC are the new models not yet available on the market) it is glare how Ram is working integrating new technologies and pay attention on material selection to meet a new statement.



Fig58 Competitive battleground

The competitive battleground shows how the launch of new Ram 1500 in 2018 is a favorable moment to penetrate the market.

Chevrolet and GMC are running out the current model until arrive of the new model Q3 2019; generate two opportunities:

- Great Ram appeal in retail channel without direct competitors in high luxury specs.
- Lack of product to be competitive with a complete fleet offer.

## Ram Play Hard / Play Hard strategy

Ram Play Hard / Play Hard strategy has been developed to match all the products in line with the right customers, following the two souls of the brand.

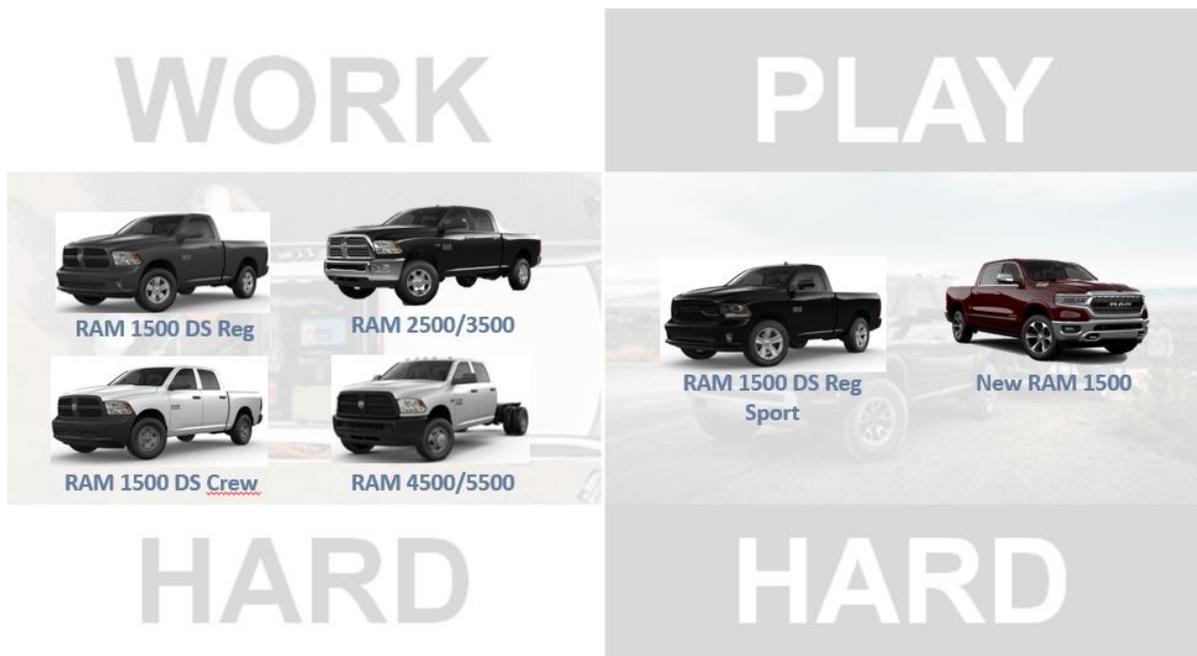


Fig59 strategy scheme

On the Work Hard side we have:

- Ram 1500 classic, that in regular cab 4X2 tradesman represents the entry price of the brand. It is a line dedicated for big fleet, in particular oil company, and government tenders.
- Ram Heavy duty line, with:
  - Class 2B truck, Ram 2500 Pick Up;
  - Class 3 truck, Ram 3500 Pick Up and Ram 3500 chassis cab;
  - Class 4 truck, Ram 4500 chassis cab;
  - Class 5 truck, Ram 5500 chassis cab;

Are dedicated to specialized professional customers that requires a vehicle with dedicated capabilities built in for their missions.

The Play Hard side have:

- Ram 1500 classic in sport trim and regular cab set un affordable lifestyle with a Pick Up conceived for outdoor desert activities;

- The new Ram 1500 offers a complete line with different levels of luxury and off-road capabilities able to satisfy High end retail and conquest customers from large SUV.

## Brand positioning

Ram is the last player on the Market with the aim to establish the Brand as the most recognizable Pick Up on the Market. Competitors shows similar market share but each one has its position on the Market:

- Ford is the most sold Pick Up in the world with strong identity and brand heritage. It represents the reference model and can sustain premium price on the Market (market leader?) business 50/50 retail fleet
- GMC is the most selling Full Size Pick Up in Middle East with consolidated business in fleet that represents more than 50% of sales. It is fairly cheaper against Ford and maintain the distinction with the twin company Chevrolet.
- Chevrolet is the cheapest competitor that exerts its business mainly on fleet channel.



Fig60 light duty pick up price positioning Dubai, Q4 2018

Ram is the only brand with two model on the segment that allow different strategies to conquer the market. The new Ram 1500 Laramie, best-selling trim with 48% of mix in the retail channel is offered at 12 points less of F-150 lariat that lead the market. While it is aligned with GMC Sierra SLT and 11 points more of Chevrolet Silverado. In the luxury trim Ram is the only to fight against Ford with a Ram 1500

Limited positioned 4 point less of F150 equivalent. GMC and Chevrolet do not sell any truck in this price class. The target is to set Ram as Ford biggest competitor in the retail channel, closing the gap year over year with increasing of brand awareness.

The Ram 1500 classic is dedicated to fleet channel and set Chevrolet as target, with entry price truck set a 98000 AED, 8 point less against the Silverado entry price. Price that can enter in competition with 1ton Pick Up segment.

### Performance Achievement

Ram is the last come in the Market and from its launch as stand-alone brand is gaining Market Share year over year and increasing its awareness in mind of customers as major Pick Up player. Ram gained a boost after 2016 with a new management organization; from a regional office to a national sales company. In the last three years from 2016 to 2018 Ram tripled the market share up to 11.1% of last year and setting new ambitious target for 2019.

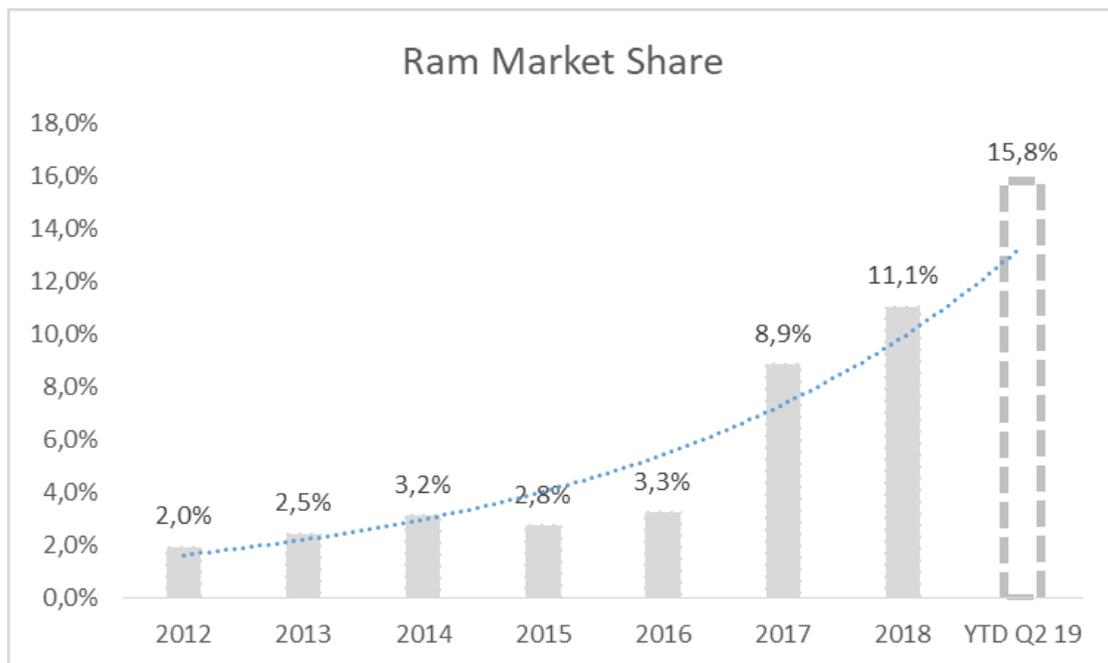


Fig61 Ram Full Size Pick Up Market Share evolution, ME perimeter. Source MEAC

Ram is retail oriented brand with the following channel mix:

- 75% retail
- 25% fleet

Retail channel guarantee good profitability and Ram gained good awareness as high-end lifestyle Pick Up. However, in a market where the fleet weight is more than 50% is mandatory to gain on fleet channel to reach the target of market share. the competitive environment shows a favorable opportunity to gain market share from fleet channel:

- Running out of Chevrolet and GMC.
- Ram 1500 Classic with aggressive price.
- Oil companies deal restart.

Big fleet customers focus on TCO (Total Cost of Ownership) and not only for a discounted price. Company that manages hundreds or thousands of vehicles take into account all the following factors:

- Purchase price;
- Fuel consumptions;
- Service interval and costs;
- Residual value;
- Taxation benefit;
- Logistic complexity;

All these factors make the fleet management very complex and often creates strong relationship between carmakers and customers. This relationship generates fidelity that makes difficult conquest new customers and make the process slower against retail sales. Ram is gaining from the start of new deal after oil crisis and the complementary lack of product by competitors. Ram is working to increase the residual value to be more competitive on TCO valuation. Residual value is a key influencer of leasing rate, one of preferred financial service used by big company.

Summarize the market characteristic with help of SWOT analysis:

Strength:

- Double product line
- Most aggressive and luxurious style Truck
- Car class contents exclusive
- Competitive price on fleet with older model

Weakness

- Brand awareness not a level of competitors

- Low residual value
- Only V8 5.7 gasoline engine

#### Opportunities

- Richer economy thanks to oil industry recovery
- Lack of products on the Market From GMC and Chevrolet before lanch of new model
- Special vheicle trasformation

#### Treads

- Stock clearance from GMC and Chevrolet
- Dependability from oil industry
- Region Instability

As said above Ram has a strong line up with both a pure lifestyle truck on the top from a performance point of view and a fleet dedicated product. This is balanced from a low awareness of the brand (but now rising, thanks product reputation and strong communication campaign) that means less residual value of used vehicle that has direct consequence of higher rental and leasing rate. The presence of only 5.7 liters engine could ban the presence on some tenders that put engine displacement restriction. However, we are solving the limitations with the introduction of mild hybrid powertrain:

- V6 3.6L BSG
- V8 5.7L BSG

The Market shows different growth opportunities, in particular related to higher price of oil barrel that is pushing again the economy growth and enable spending confidence. Dependability from oil and gas industry is also a tread because generate instability. To reduce this risk all richer Middle East economies are diversifying their economies. UAE, in particular, is becoming one of most important trade and logistic hub in the world.

In this environment, thanks to it double soul Full size Pick Up industry has different trend for each market following the relative peculiarities. Taking into account that 3 major market (Kuwait, Saudi Arabia, UAE) accounts for 78% of share the main focus will be on these three. In all region, there is the possibility to exploit the lack of product left by the running out of GMC and Chevrolet models. These two brands have only their stocks with consequent reduced availability of models configuration until the new models will full in run. The open door is in particular on fleet and

tender market, where today they are strong, that is often are time sensitive and require very specific product. Have the ram full line ready to get opportunity will increase sales, market share and awareness. The minor tread of this situation is on short-term actions, because GMC and Chevrolet can do strong push to speed up stock clearance with extra discounts and try to anticipate some small deal and retail.

## Market seasonality: Ramadan

Middle East market as Islamic area follow it religious holydays and the most important is Ramadan. Ramadan is the ninth synodic month of Islamic year and celebrate the first revelation of Koran to Muhammed. During this period is forbidden eat and drink and have a chaste life from sunrise to sunset. The reduced daily activities promote more active night life with higher consumption at all. For example all big mall in UAE are open all night long as well numerous car's dealer. For this reason each year are prepared dedicated offer to exploit people propensity to purchase. As show, in the graphic below, are reported monthly sales of overall car industry, highlighted in green are the Ramadan months of 2016 and 2017. Is notable as they represents sales peak in the season.

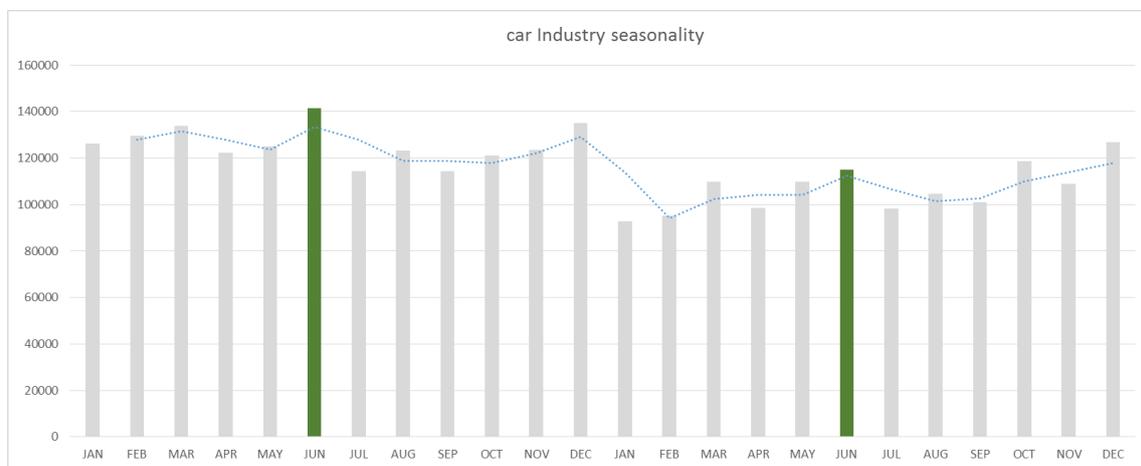


Fig62 ME automotive Industry month by month, highlighted in green Ramadan months. Source: MEAC

Ramadan sales plan is in particular retail oriented and is composed of a dedicated commercial offer customized for each market and leveraging on special package and added services, avoiding discount based campaign. To advertise the special Ramadan offer is developed communication plan that matches traditional road panels and Radio spot, very effective in Middle East, with a 360-degree digital coverage, every year more effective respect traditional advertising.



Fig63 Ramadan campaign commercial offer

## Middle East Ram distribution model

The automotive business in Middle East follows different distribution's model respect to Europe one. Due to local legislative constraints, in UAE, a foreign OEM cannot have direct business in these countries and must have a local partner to get it. The local partner must have the majority of company shares. For this reason the distribution across countries is demanded to local general distributors. Up to 2016 Ram was distributed in Middle East through General Distributors managed by regional office. In 2016 was decided to establish a National Sales Company in the free zone of Dubai. The free zone allows a complete control of NSC from a foreign company, in this case FCA. With this solution FCA has more presence on the market and to keep a closer control on GDs with structured organization. Legally general distributors maintain the same function of local partner but now are supported with stronger commercial policy and marketing plan. There is yearly target negotiation with monthly, quarters updating and bonus on target achievements. Engagement rules for general distributors in Middle East are very tight and they can require exclusivity contract. It means no possibility to direct modify the distribution network but always require a negotiation with GDs.

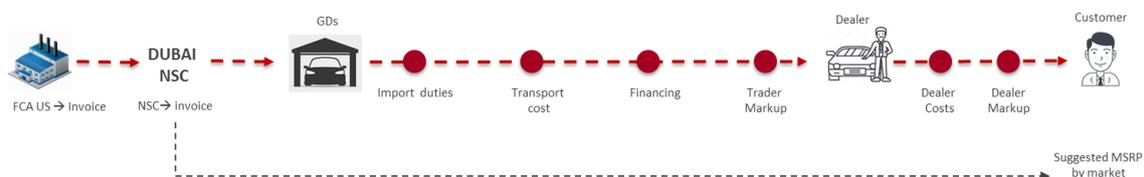


Fig64 Ram distribution scheme in Middle East

Ram commercial policy in Middle East is settled between the national sales company and General Distributors, different from EU, does not allow direct dealer control.

Actual commercial policy get leverages with cumulative discounts on target achievements. Targets are different between channels (retail and fleet) and settled on sales achievement and overachievement of:

- Month
- Quartier
- Year

Are also present bonus on service quality achievements. Commercial policy have strategic plan defined yearly and are updated with tactical actions by quarters or months. To have a strong image and uniform quality level of Dealership, year over year are developed network development plan to help GDs and push up sales.

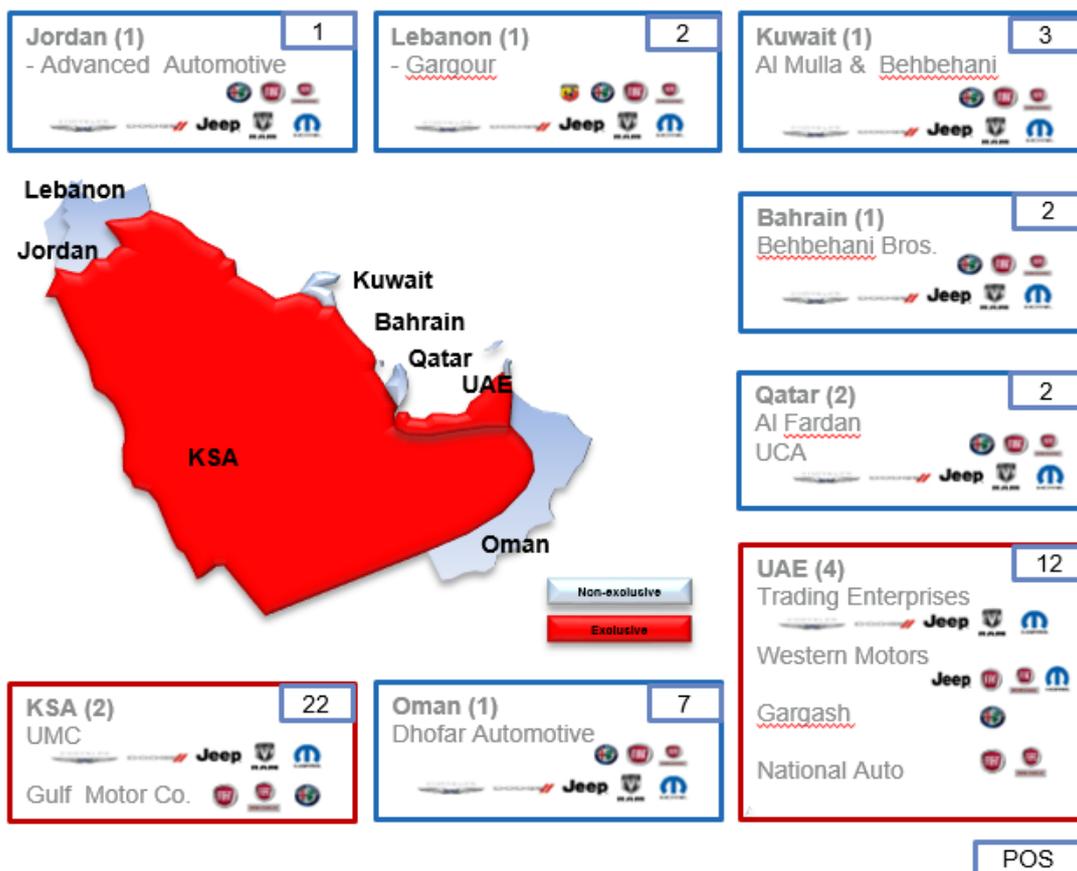


Fig65 Middle East GDs distribution

The 2018 FCA network has 51 POS of which 41 Ram. The POS distribution is proportional to Industry volumes and areas. KSA is the most attended market with 21 POS, from one side it is one of biggest market in term of volumes and the other

side it covers 4/5th of Arab peninsula. As largest country of gulf, the distribution network in Saudi has to cover all major cities spread in the land. As benchmark, Ford has a footprint of 30 dealers while GM group 59 with both Chevrolet and GMC. Taking 2018 full size Pick Up best seller in KSA, Chevrolet Silverado with 37.6% of market share, they have a throughput per dealer of 25 truck year for Dealer, while Ram throughput is 21 uts/dealer yearly. Chevrolet has throughput about 20% higher against Ram, but generates three times sales volume thanks the network capillarity. On other hands GMC can count on the same network capillarity of Chevrolet but less effective with a throughput of 16 vehicles/year for Dealer, and despite that it owns a market share of 24.3%. The analysis shows the importance of network capillarity in big market KSA. Toyota that is the undisputed market leader, setting itself at 31% of market share across all segment presents, has a footprint of 61 POS and the close second higher dealer's throughput, demonstrate as around 60 POS is the exact number to cover the market without spread too much sales.

UAE and Oman are the other two countries with a small network and both countries have a footprint of six Ram dealers, in both cases to serve the main cities. The others countries do not present a developed network, But only one or two POS in the biggest city. This is due to market conformation with up to 96% of people living in the capital city and practically no one in the desert rural region.

Taking into account the current situation the network development plan has to focus on:

- Opening new Dealers/sub-dealers to increase footprint in KSA and at same upgrade the current one to offer higher standard for sales, aftersales parts shop and bodyshops.
- Stabilize processes between Dealers, GD and Brand.
- development of skills through audit process for sales and after sales department.

All this activities are developed with a strong collaboration with GDs signing strong economical agreement to support their spending and guarantying high standard return.

## Market's performance and peculiarity

### Saudi

Saudi Arabia is historically the major car market of the region as well as for full size Pick Up. Saudi economy is directly linked to oil production so after oil price drop in 2014 overall Saudi economy slows down generating a contraction of Full size Pick Up Industry that have seen a significant reduction about 50% in the last 5 years. From last quarter of 2018 the increasing of oil production defined by OPEC combined with a strong demand maintain oil barrel price stable around 60\$ gave a new boost to Saudi economy and positive outlook for the year and spending confidence. The first quarter of 2019 shows a new growth with +150% versus Q1 2018. This outstanding result is driven in particular by a new request from ARAMCO oil company that bought more than 500 trucks.

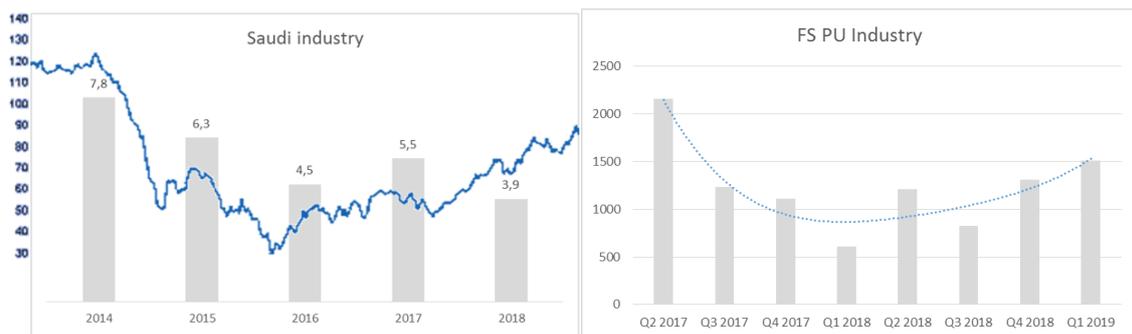


Fig66, 67 Full size Pick Up Industry related with crude oil price in the same period. Full Size Pick Up Industry by Quartier. Source: MEAC.

Saudi Oil company Aramco is one of powerful company in the world and the first in oil production. It generate a great opportunity investing periodically on new fleet. In April 2019 Saudi Aramco did its first bond placement obtaining an excellent result: received a request of 100 billions dollars against 12 billions placed. This shows the company strength and the placement for new investments. Ram has the aim to enter in the basket of the company for fleet and deal today dominated by Ford.

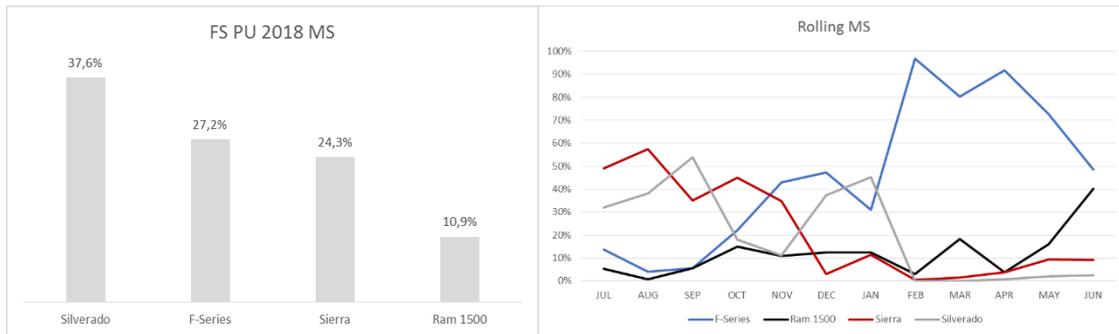


Fig68,69 full Size Pick Up market share KSA 2018. And rolling market share YTD Jun 2019. Source: MEAC.

The Market share results of 2018 shows Ram as last player in the market with a value of 10.9%. Despite the position represents outstanding value because doubling 2017 market share with network still under development and a product strategy mainly retail customer oriented during the past year. As we can see from the rolling market share graph the Saudi Industry is high influenced by small and big deal. Indeed the market share's spike of players are due to big Deal furniture. The highest peak of Ford in February is related to ARAMCO tender delivery. During last twelve months Ram shows almost constant market share highlighting more retail orientation of sales. The start of dual channel strategy from start 2019 pushes Ram's Market share in Q2 close to Ford. This result achievement in the last month is a combination of good result of fleet policy covering the deal left by GM group. Saudi retains the first place in first half of 2019 for Ram fleet market and it is the second player after Ford. The target is to penetrate the market increasing brand awareness in business customer, offering a full range after sales services, in particular maintenance package and financial services as leasing with higher buy back value that is very important in the market. This strategy is aimed guarantee continuous hard-core business in fleet market.

Saudi presents a great opportunity for the current year thanks the revived oil industry that boost both fleet and retail sales. The main thread is represented by new CAFE (Corporate Average Fuel Economy) limits from January 2020. CAFE measure the fleet average footprint fuel economy for passengers cars and light duty trucks. This value is aligned with US CAFE but the fleet mix influences the reached value. The big issue is for companies that overcame the limit has to stop sales for overall fleet. The limit is not related to offered fleet, but on the real sales mix. For this reason the market has been pushed on the right mix to respect café compliance and from this year started a communication campaign and training to push knowledge on mild hybrid Full Size Pick Up, to prepare the market and have good response with new model year.

## UAE

United Arab Emirates is one of three major market of GCC for full size Pick Up, with last Industry of 2900 units. The Market conformation is different from one in KSA, and is concentrated on Emirates seacoast cities and do not require a sales network widespread with numerous point of sales. The presence of free zones in Abu Dhabi and Dubai and their development as International logistic hub promote the foundation of different companies involved in vehicles transformation and special equipment, this companies are both, Emirates own companies or branches of global companies as: NAFFCO, INKAS and IAG.



Fig70 Example of transformation on Heavy duty chassis by NAFFCO. From left to right: Ambulance, Firefighting vehicle, Aerial rescue vehicle.

Player as NAFFCO are very important thanks to their strong business not only concentrated in Middle East that can guarantee significant base volumes not influenced by oil and gas industry. The aim of a company as Ram is to become a real partner of the company and not only a simple supplier.

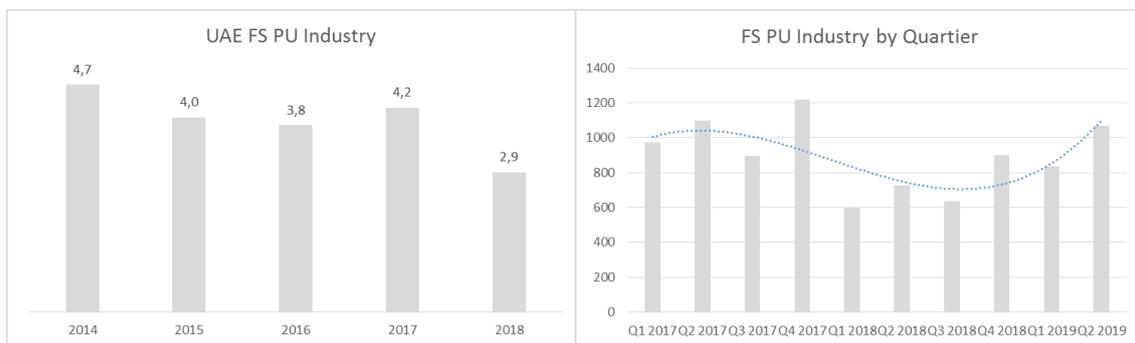


Fig71,72 UAE Full Size Pick Up Industry evolution by year on the left, by quartier on the right. Source MEAC.

UAE full size Pick Up industry followed the overall decreasing of automotive industry due to petrol instability in last 5 years. The drop is less consistent respect to KSA thanks to Emirates economy differentiation and strong exporting of upfitted products. From last quarter of 2018 started a reversing trend that set a growth of

43% of Half1 2019 respect to half1 2018, this growth follows the stabilization of oil industry on the entire region.

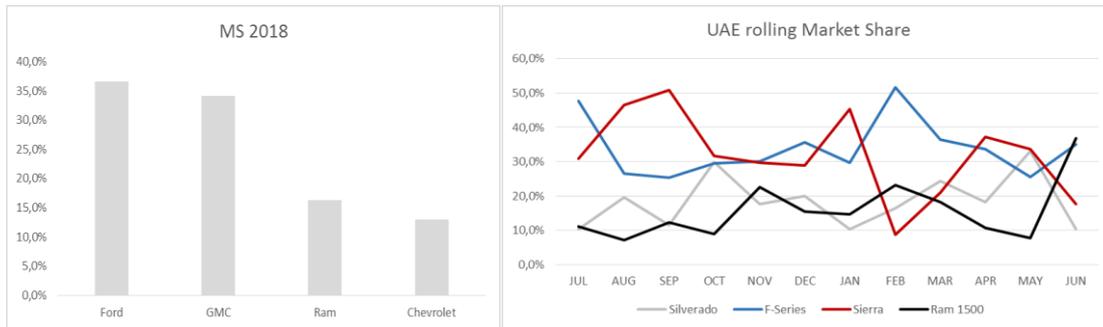


Fig72, 73 UAE Full Size Pick Up 2018 market share on the left and rolling market share YTD June 2019. Source MEAC

Ram closed 2018 with a market share of 12.9% in constant but slowly growth respect the previous year. As in Saudi Ram sales are almost retail, while the two competitors that fight for the leadership (Ford and GMC) are both strong on fleet. Between February and March, Ford delivered 150 units of Heavy duty for a deal with a converter. In the second quarter of 2019 after stock liquidation of GM group and thanks to results of dual channel strategy Ram got a quote of 36.9% and first place in share.

UAE market presents a big opportunity related to all investment for Dubai 2020, direct and indirect. Expo is driving further the building sector and it is bringing a request for all equipment needed. Full size Pick Up in this sector are perfect base for:

- Aerial vehicles
- Lighting vehicles
- Mobile control center
- Signature vehicles
- People moving

All new logistic hub and expo facilities will be equipped with all safety system for firefighting and medicals. All these needs create a great opportunity in full size pick up segment and in particular with up fitter. All new Ram heavy-duty line can compete in the segment thanks many class exclusive features dedicated to simplify up fitter work. The Ram new heavy-duty line will launched in Q3 and will arrive on the market with the new product before Ford face-lift and GM complete new model, which will launched in Q4 for US Market. The environment generate an opportunity for Ram able to place order and deliver trucks before competitors. Is important to provide the right Launch stock and educate properly sales force to exploit the opportunity and gain awareness with up fitter.

## Kuwait

Kuwait shows a different behavior respect to other two markets. It has a Full Size Pick Up industry in strong growth and closed 2018 as first market, overcoming Saudi Arabia. Kuwait was historically the third player after KSA and UAE but during last 5 years, it remains almost constant and cached an outstanding performance in 2018.

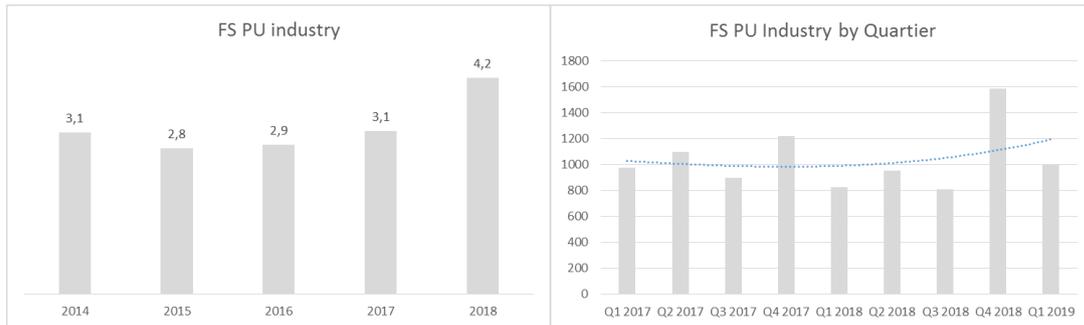


Fig74, 75 Kuwait Full Size Pick Up Industry evolution by year on the left, by quartier on the right. Source MEAC.

There are two main reason for this performance; the first is related to increasing of oil price that pulled up again oil and gas Industry, the first market in response that generates a big request for Heavy-duty vehicle in Q4 2018. The second reason is on retail appeal. Most of Kuwait population accept to drive Full Size Pick Up as daily driver vehicle and it is often chosen as alternative to big SUV. Strong retail sales rely on the appeal of True American power vehicle and remained stable during oil and gas industry down. The new growth of oil and gas market has driven purchases by the state run oil companies and the confidence in the countries economy, due to the oil and gas industry, has increased consumer confidence and spending.

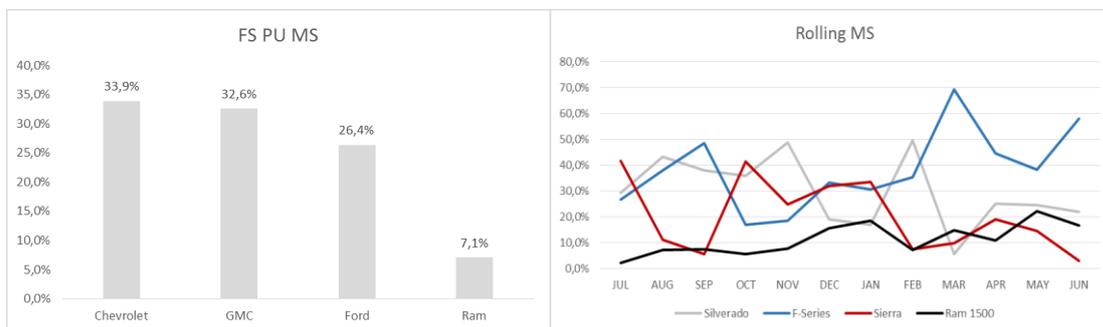


Fig76, 77 Kuwait Full Size Pick Up 2018 market share on the left and rolling market share YTD June 2019. Source MEAC

Kuwait market is strongly dominated by competitors thanks their historical footprint on the country. Ram closed 2018 last with a market share of 7.1% with a 20% growth against previous year. In the first half 2019 Ram gain a quote of 14.7%, despite the opportunity granted by GM group with run out of old models, Ram sales are

growing slower than other countries. To push further Sales and reduce the gap with competitors has been developed a dedicated Kuwait sales plan focused on:

- Communication campaign
- GD network quality
- Dedicated offers

Merged with a traditional and digital advertising campaign we worked in collaboration with the GD to create different BTL events to keep contact with customer and understand their needs to present the right commercial offer.

### Other countries

The five remain markets (Bahrain, Jourdan, Lebanon, Oman and Qatar) represent about 22% of sales volume for Full Size Pick Up. The only country with relative importance is Qatar that account 60% of the quote. Qatar from 2017 is subjected to trade block from other countries gulf: Saudi, UAE, Bahrain and Egypt. Who accused Qatar to support terrorism and ask it a series of blockade that Qatar refused, from that Qatar economy seen a deep reformation to survive at trade block. Qatar economy demonstrate its resilience thanks huge funds due to natural oil and gas but it is struggling for finance which is impacting businesses and the general population. whilst the super-rich are still spending the middle class are struggling to maintain the spending they had before. This generate fell down about 50% of automotive industry in last two years.

In the other countries there is only a small request from private or small deal and the market share is a reflection of GDs ability to catch the customers.

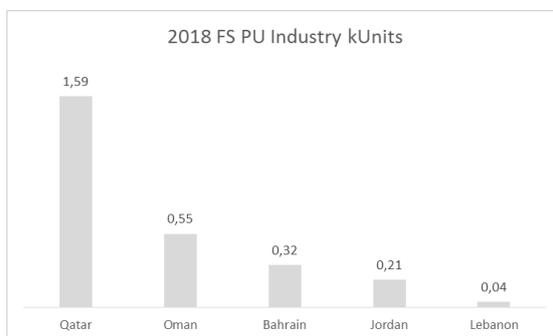


Fig78 Full Size Pick Up Industry 2018 by countries.

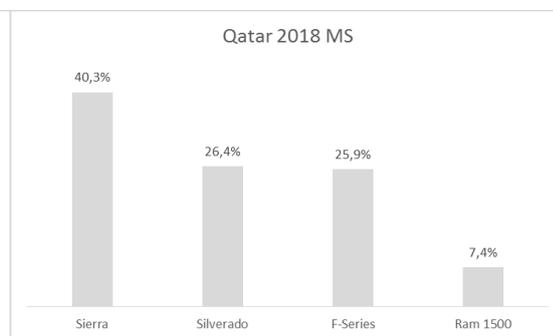


Fig79 Qatar Full Size Pick Up 2018 market share. Source: MEAC

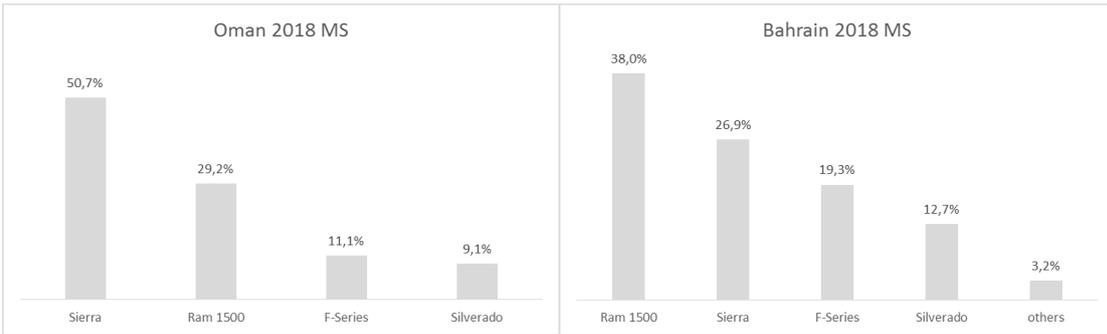


Fig80 Oman Full Size Pick Up 2018 market share.

Fig81 Bahrain Full Size Pick Up 2018 market share. Source: MEAC

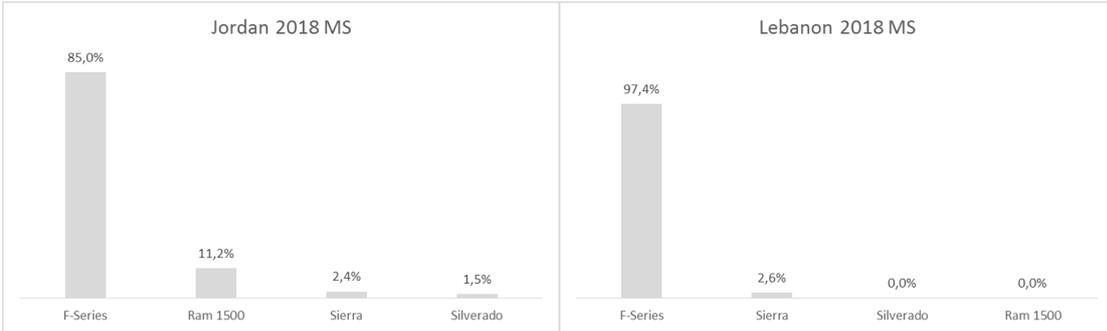


Fig82 Jordan Full Size Pick Up 2018 market share.

Fig83 Lebanon Full Size Pick Up 2018 market share. Source: MEAC

The Middle East Market despite the regional instability borders is guaranteed by the stability of GCC countries that shows renewed growth after few years of stagnation. The opportunities generated by new investments for Dubai 2020 is a good starting point to growth in the business with the launch of new Heavy Duty line-up.

# New Heavy Duty model launch

## Customers and competitors



Fig84 Ram 5500 crew cab



Fig85 Ambulance upfitted by NAFFCO on Ford Chassis

Heavy Duty line-up is more professional oriented than Light Duty one, every truck is built-up for a specific purpose. Customers are small or big companies and rarely are private customers, making it a really B2B purchase. The customization is done by external companies (Up-fitters) and generate a complex buying process.

There are three different buying process:

- In the first one the final customer select the base vehicle and buy it separately buy the up-fitter selection (self-confident mode).

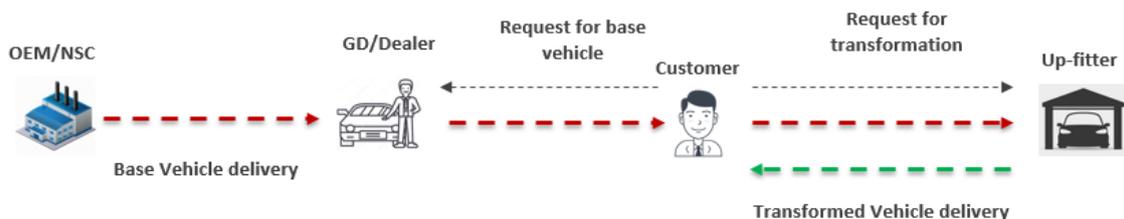


Fig86 first buying process

This process is time consuming and require a deep Knowledge of product and transformation, so it is less common buying mode.

- In the second buying process the customer is looking for the complete transformed product and ask directly to the up-fitter for the best choice (Up-fitter trust).



Fig87 second buying process

In this buying process is the Up-fitter that select the best base vehicle for their purpose based on the customer request. This process is common for Up-fitter work with high added value and time consuming activity, so they are looking for a strong supplier able to provide the best chassis for their up-fit, guaranteeing right performance, reliability and reparability, always at right price. In this case, up-fitters are not simple artisan that modify the vehicles in their garage but are companies very specialized in their work, with internal R&D departments and with structured processes. This buying process is preferred for heavy and specialized modifications, where the transformation counts more than base vehicle.

- In the third buying process the final customer ask to the dealer for the transformed product (Carmaker trust).

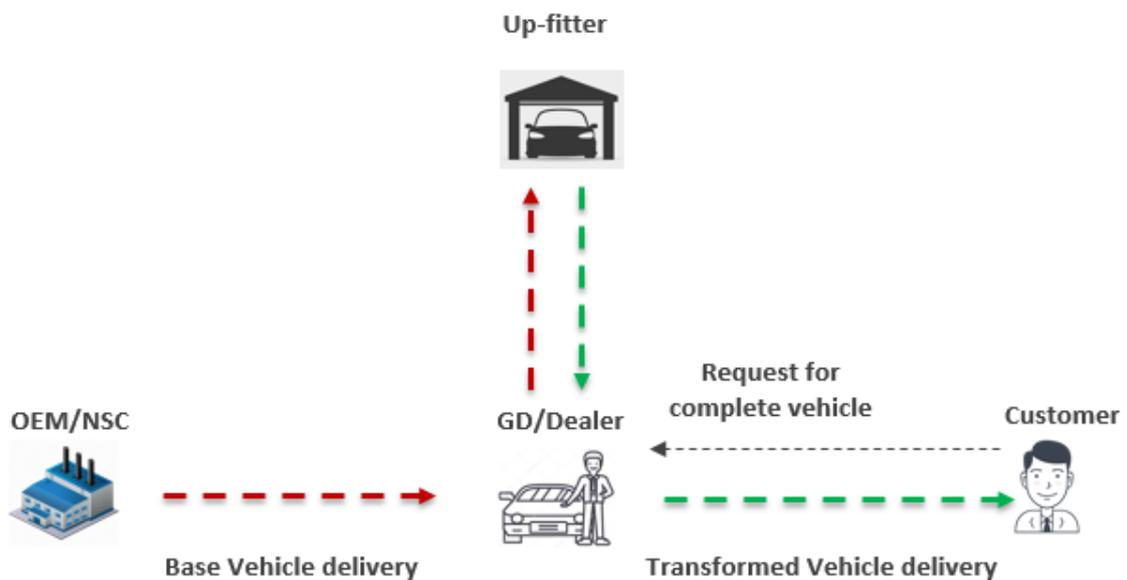


Fig88 third buying process

This buying process is selected by customers when their focus is main on base vehicle then the up-fit. It rely for simple transformation or one that not alter the shape of the vehicle. The customer is attracted by the overall offer of carmaker:

- Purchase price
- Up-fit quality
- Aftersales services
- Financial services

For OEM is important the choice of right partners for the up-fit to avoid crossing warranty problems.

Up-fitting on Pick-up trucks cover a wide range of product for usage in different sectors. Witch are:

Medical

- Ambulance
- Mass casualty ambulance
- Multi purpose Rescue vehicle

Fire Fighting

- Rescue rapid intervention vehicles
- Aereal vehicles
- Command support Vehicle

Armored Vehicles

- Cash In transit
- Law enforcement and tactical vehicles
- Armored luxury picks up
- Armored ambulances
- Anti Riot vehicles

Special Operation Trucks

- Lube Trucks
- Lighting Vehicles
- Recovery Trucks

All these transformations are complex and each one has different specialized up-fitters, only in the territory of Dubai are present different international companies including:

- NAFFCO is one of biggest player in the segment, established in 1991 in Dubai, now has more than 15000 employees and exports over 100 country worldwide. It is set as the world's leading producer and supplier of life safety solutions. Able to offer complete systems for all types of high quality firefighting equipment, fire protection systems, fire alarms, addressable emergency systems, security systems, custom-made vehicle such as fire trucks, ambulances, mobile hospitals and airport rescue firefighting vehicles (ARFF).
- INKAS is specializing in the design and production of a wide variety of armored vehicles, cars, and armored trucks, including luxury armored sedans, executive SUVs, cash-in-transit vehicles and tactical armored vehicles. INKAS has been providing armored vehicles for banks, law enforcement agencies and corporate clients.
- IAG (International Armored Group) is another specialized producer of armored vehicles: VIP Protection, Luxury & Operational SUVs and cars, Police and Law Enforcement, Pickups & Trucks, Ambulances, Tactical and Armored Personnel Carriers, Anti-Riot vehicles and Cash-in-Transit vehicles. And includes US Army and NATO as client.

These Companies have each one a list of important customers and push to participate at international tender. Also they require strong partner as supplier for base vehicles, able to guarantee the right reliability.

Heavy duty lineup cover 5 different truck classes rated by GVWR:

- Class2b GVWR range (3,856–4,536 kg) Ram 2500
- Class3 GVWR range (4,537–6,350 kg) Ram 3500
- Class4 GVWR range (6,351–7,257 kg) Ram 4500
- Class5 GVWR range (7,258–8,845 kg) Ram 5500

Class 2b and 3 are offered with complete Pick Up body while the other two are offered only with free chassis on the rear. The Ram 3500 is offered in both version: Pick Up and Chassis Cab.

## HEAVY-DUTY PICKUP (2500/3500)

## CHASSIS CAB (3500/4500/5500)

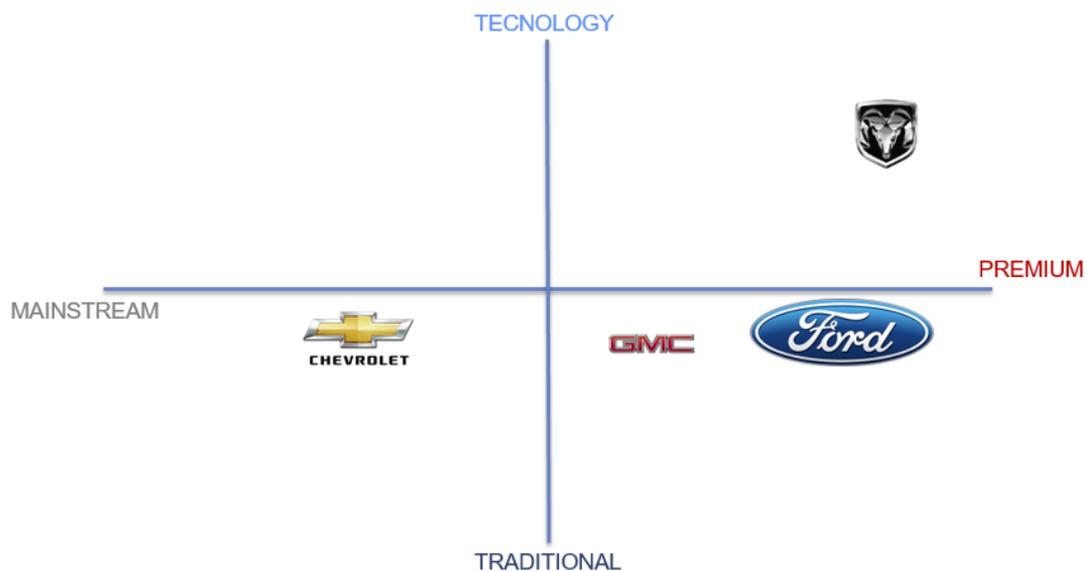


Fig 89 Ram Heavy Duty competitors: Pick Up on the left; Chassis Cab on the right.

The competitive environment presents all the player with comparable class rating trucks. All the competitors have strong and long lasting presence on the region, supported by developed contact's network with major customers. In this environment Ram needs to differentiate.

## Ram Positioning

Ram following the positioning adopted in light duty segment is offering an Innovative product that stands out for USP (Unique selling proposition) in terms of technology, luxury and comfort; offering different selling proposition also for high professional customers.



*Fig90 Ram positioning chart for Heavy Duty lineup*

The Brand positioning focus on:

- Premium truck for upscale consumer lifestyle activities
- Modern, refined, premium, advanced technology, powerful, capable, tough and reliable
- The most capable factory made pick-up truck for off-roading.

Technology and Premium contents are appreciated in particular from armored vehicles and law enforcement customers.

Ram is the only Brand offering an exclusive truck prepared for off-road, the Power Wagon. The Power Wagon is historical Truck born in the fifties on military vehicle chassis and conceived for hard camp work. Today the Power Wagon use the last generation heavy duty chassis for a superior strength during off-road activities making it the most capable factory made pick-up truck for off-roading. Differentiating from its original "Work Hard" purpose the Power Wagon now plays on the "Play Hard" side of Ram strategy and represents the only retail vehicle present on Heavy Duty lineup.



*Fig91,92,93 New 2019 Ram 2500 PAWERWAGON. On road and Off-road while it is to face two kind of twist.*

## Launch activities

The launch of a new model on the market relates a series of complex activities to do with right timing and efforts. Acting on the following pillars:

- Training activities on new products for salesforces;
- Communication campaign
  - ATL
  - BTL
- Start of sales

Start of Sales is the effective moment in which the product is available on the market from a customer point of view and it is when the Company starts to earn back money. From a logistic constraint it is planned for October 2019.

The launching activities started 3 months earlier with the presentation of new models to the network at private event for GD and Dealers. For LCV vehicles is fundamental have skilled sales forces, more than passenger's cars, due to technical nature of sales.

The communication campaign is the following fundamental step of the process, it is articulated in different step with different aims.

- ATL communication activities aimed to increase the Brand awareness between final customers and announcing the new product. It is actuated in different channels and steps.

Channels:

- Digital, year by year more effective is able to advertise people on base of their interests.
- Radio, standard cost effective method for LCV customers that drives many hours a day.
- Road panel, diffused in Big Arab cities with people often in queue.

Steps

- Before the official launch aware customers on new product coming.
  - After the launch illustrate the product and invite to discover the commercial offer.
- BTL activities are focused for special customers:
    - Up-fitters
    - Big fleet owners

Focused only for three main markets are private events where customers can see and touch the products and understand the real capability of the truck helped by skilled Ram agents.

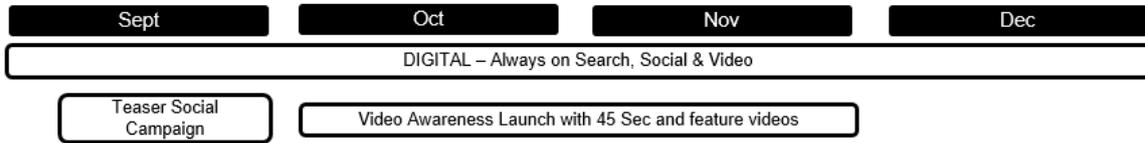


Fig94 Timeline of digital communication activities



Fig95 Road panel for promotional campaign.

All the Ram Heavy duty communication campaign is focused on the Brand Values:

- Pride: Luxurious lifestyle that has been earned
- Stand Out: Part of a tribe.
- Integrity: Honesty, humility, trustworthiness
- Courage: Stand for what's right. Not afraid to take risks for a worthy cause
- Leadership: Always strive to raise the bar. Never settle for "good enough"
- Hard Work: Pride in your craft. Determined to achieve greatness.

All the activities well combined will determine the effective customer purchase response.

## Conclusion

The presence of Ram in Middle East is one of the key elements of FCA strategy to become a strong player in LCV segment for all EMEA region and not only Europe. With this aim a Brand direction unit in Turin Headquarter has been created in middle 2018. Thanks to central coordination, Ram increased its market share by 25% against 2017 and sales increases by 13% despite the industry contraction. The brand settled the target to reach fair share in next two years, a target that is ambitious but reachable. Brand and national sales company are working together to improve network development and deliver a complete commercial offer for the market. In this scenario has central role the launch of new Heavy duty line that represents the biggest opportunity in the fleet market.

This thesis analyze deeply the market and competitors to define the best positioning and implement right commercial strategy.

The definition of a successful commercial strategy is a difficult task. The commercial strategy always has to take into account the competitor's reaction that never stand still. The task become even arduous when is dealing with different cultures and laws that takes time to be understood with the right knowledge. The Central Ram Team, getting in touch with different cultures and practices, can help the Company to develop new strategies and actions.

In general the commercial development is a dynamic environment, continuously changing, and therefore the Companies have always to be ready to catch mutations and anticipate solutions to possible problems.

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