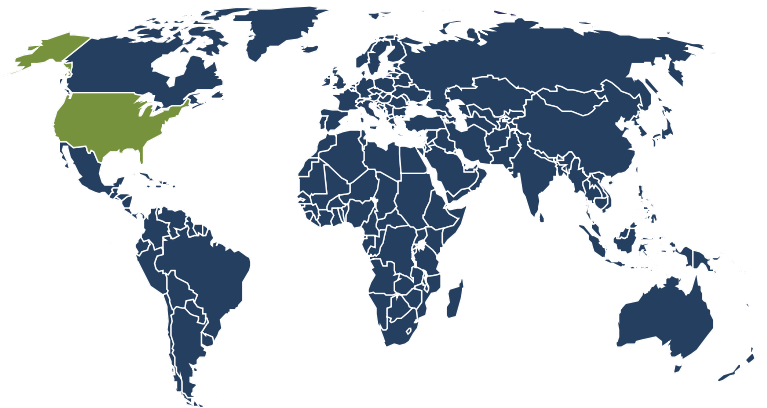




Freedonia Focus Reports
US Collection

Automotive Repair & Maintenance Services: United States

December 2016



Highlights

Market Environment

Historical Trends | Key Economic Indicators | Technology
Environmental and Regulatory Factors

Segmentation and Forecasts

Establishment Revenues

Industry Structure

Industry Composition and Characteristics | Additional Companies Cited

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ABOUT THIS REPORT

Scope & Method

This report forecasts US revenues of automotive repair and maintenance service establishments in US dollars to 2020. Total revenues are segmented by establishment in terms of:

- general repair
- body, paint, and interior
- car wash and detail
- oil change and lubrication
- glass
- transmission
- exhaust
- other establishments such as brake, diagnostic, and electrical repair providers.

Data encompasses automotive repair and maintenance service revenues generated by employer and nonemployer establishments. Revenues include the value of parts and labor, but exclude parts sold at retail without the provision of a service. The value of repairs covered by warranty is included. Revenues generated by establishments that specialize in the service of motorcycles are excluded from the scope of this report.

Automotive repair and maintenance service employer establishments in unit terms are also provided as follows:

- general repair
- body, paint, and interior
- car wash and detail
- oil change and lubrication
- glass
- transmission
- exhaust
- other automotive repair establishments
- gas and repair stations
- new car dealers.

To illustrate historical trends, total revenues and the various revenue and employer establishment segments are provided in annual series from 2005 to 2015.

This report quantifies trends in various measures of growth and volatility. Growth (or decline) expressed as an average annual growth rate (AAGR) is the least squares growth rate, which takes into account all available datapoints over a period. The volatility of datapoints around a least squares growth trend over time is expressed via the coefficient of determination, or r^2 . The most stable data series relative to the trend carries an r^2 value of 1.0; the most volatile – 0.0. Growth calculated as a compound annual growth rate (CAGR) employs, by definition, only the first and last datapoints over a period. The CAGR is used to describe forecast growth, defined as the expected trend beginning in the base year and ending in the forecast year. Readers are encouraged to consider historical volatility when assessing particular annual values along the forecast

trend, including in the forecast year.

Key macroeconomic indicators are also provided with quantified trends. Other various topics, including profiles of pertinent leading suppliers, are covered in this report. A full outline of report items by page is available in the [Table of Contents](#).

Sources

Automotive Repair & Maintenance Services: United States (FF95018) represents the synthesis and analysis of data from various primary, secondary, macroeconomic, and demographic sources including:

- firms participating in the industry, and their suppliers and customers
- government/public agencies
- national, regional, and international non-governmental organizations
- trade associations and their publications
- the business and trade press
- indicator forecasts by The Freedonia Group
- the findings of other reports and studies by The Freedonia Group.

Specific sources and additional resources are listed in the [Resources](#) section of this publication for reference and to facilitate further research.

Industry Codes

The topic of this report is related to the following industry codes:

NAICS/SCIAN 2007		SIC	
North American Industry Classification System		Standard Industry Codes	
811111	General Automotive Repair	7532	Top, Body, and Upholstery Repair Shops and Paint Shops
811112	Automotive Exhaust System Repair		
811113	Automotive Transmission Repair	7533	Automotive Exhaust System Repair Shops
811118	Other Automotive Mechanical and Electrical Repair and Maintenance	7536	Automotive Glass Replacement Shops
		7537	Automotive Transmission Repair Shops
811121	Automotive Body, Paint, and Interior Repair and Maintenance	7538	General Automotive Repair Shops
		7539	Automotive Repair Shops, NEC
811122	Automotive Glass Replacement Shops	7542	Carwashes
811191	Automotive Oil Change and Lubrication Shops	7549	Automotive Services, Except Repair and Carwashes
811192	Car Washes		
811198	All Other Automotive Repair and Maintenance		

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HIGHLIGHTS

- Revenues generated by US automotive repair and maintenance service establishments are forecast to total \$133 billion in 2020, representing 2.2% annual growth from \$119 billion in 2015. Providers are expected to benefit from expansion in the light vehicle (LV) park, the total number of procedures performed, and an uptick in service prices.
- General repair revenues are projected to increase to \$61.2 billion in 2020, remaining the largest discrete segment. Advances will be supported by expansion in disposable personal income levels as well as the LV park.
- Car wash and detail revenues are expected to expand 3.3% per year to 2020, the fastest pace for any discrete segment. Advances will be driven by gains in disposable personal income, which will promote up-trading to higher-cost services, such as custom detailing.
- Technological change at multiple levels has extended the service lives of components, increased the complexity and cost of repairs, shifted advertising dollars to the internet, and boosted consumer capacity to establish quantifiable expectations of service quality and cost.
- Regulations impacting the industry typically pertain to waste disposal and emissions. Trending legislation includes those related to “Right to Repair”.
- Representative providers of automotive repair and maintenance service to the US market in 2015 included AutoNation, Boyd Group Income Fund (via its operating company, The Boyd Group), and Wash Depot Holdings.

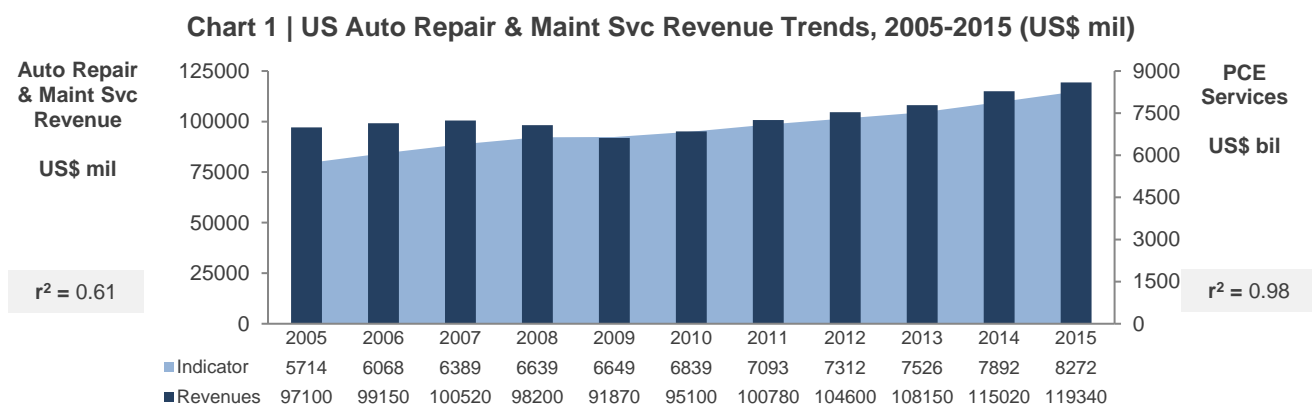
MARKET ENVIRONMENT

Historical Trends

US revenues generated by automotive repair and maintenance service establishments totaled \$119 billion in 2015 and increased at an average annual growth rate (AAGR) of 1.9% over the 2005-2015 period.

Service revenues display some cyclical nature, impacted by macroeconomic trends both directly through disposable income levels, and indirectly through the effect of consumer confidence on light vehicle (LV) sales and scrappage, the average age of the LV park, and therefore the scale of the vehicle park requiring repairs. Economic performance and other factors, such as vehicle fuel prices, also impact repair volume through miles driven per vehicle, as well as associated levels of wear-and-tear and incidence of traffic collisions.

For the 2005-2015 period, revenues displayed more volatility than personal consumption expenditures (PCE) on services, as indicated by an r^2 of 0.61 for the former compared to an r^2 of 0.98 for the latter, due to fluctuations in miles driven per vehicle and consumer capacity to postpone some automotive repairs.



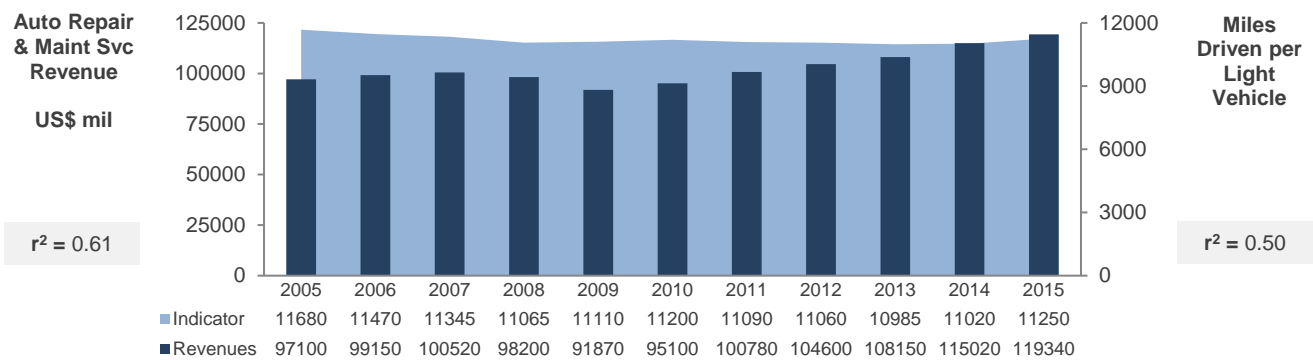
Sources: US Census Bureau, The Freedonia Group

Automotive repair and maintenance service revenues dropped 6.4% in 2009 – the fastest rate of the historical period – to a decade trough. The recessionary environment resulted in many consumers restraining spending on repairs and maintenance until

absolutely necessary; nonetheless, that sentiment was offset to some extent as many consumers invested in their current vehicles to avoid having to purchase a new vehicle until economic conditions improved. Furthermore, high fuel prices and unemployment levels in the preceding years suppressed miles driven per vehicle, reducing vehicle wear and repair needs.

Industry revenues climbed 6.4% in 2014, the fastest increase of the decade, supported by the most rapid growth in disposable personal incomes and consumer spending on services since the Great Recession. A collapse in prices for transport vehicle fuels, owed to a precipitous drop in global oil prices in 2014, propelled miles driven per vehicle by 2.1% in 2015. This growth represented a significant deviation from a long-term downward trend. Miles per vehicle registered average annual declines of 0.4% over the 2005-2015 period. As a result of higher-than-average wear-and-tear, repair industry revenues climbed to the decade peak in 2015.

Chart 2 | US Revenues & Miles per Light Vehicle Trends, 2005-2015 (US\$ mil)



Sources: US Bureau of Transportation Statistics, US Census Bureau, The Freedonia Group

Key Economic Indicators

The table below provides forecasts for economic indicators related to revenues for US automotive repair and maintenance service establishments.

Table 1 | Key Indicators for US Auto Repair & Maint Svc Estab Revenues; 2005, 2015, 2020

Item	2005	2015	2020	r ² 05-15	AAGR 05-15	CAGR 20/15
Resident Population (million persons)	295.5	321.4	334.6	1.00	0.8%	0.8%
Age 15 and Older	235.0	260.4	273.0	1.00	1.0%	0.9%
Licensed Drivers (million persons)	200.5	215.3	218.0	0.92	0.6%	0.2%
licensed/population age 15+ (percent)	85.3	82.7	79.9	0.86	-0.4%	-0.7%
Urban Population (million persons)	236.2	262.3	276.0	1.00	1.0%	1.0%
Gross Domestic Product (US\$ bil)	13094	18037	22200	0.96	2.9%	4.2%
Disposable Personal Income (US\$ bil)	9401	13520	16670	0.98	3.3%	4.3%
Motor Vehicles in Use (million units)	238.4	261.8	272.5	0.84	0.7%	0.8%
Light Vehicles in Use	230.8	252.9	263.2	0.81	0.7%	0.8%
Motor Vehicle Retail Sales (thousand units)	17495	17880	17100	0.00	0.3%	-0.9%
Light Vehicle Retail Sales	16950	17400	16590	0.00	0.3%	-0.9%
Fatal Motor Vehicle Crashes	39250	30455	29170	0.75	-2.9%	-0.9%
Miles Traveled per Light Vehicle in Use	11680	11250	10910	0.50	-0.4%	-0.6%
Annual Oil Changes per Light Vehicle in Use	2.6	2.3	2.2	0.90	-1.4%	-0.9%

Source: The Freedonia Group

Technology

Technological change at the automotive original equipment manufacturer (OEM), service provider, and consumer levels has dramatically reshaped the automobile and the nature of service provided, as well as consumer engagement.

At the OEM level, improvements in design and materials yield longer-lasting parts, and vehicles possessing lighter service requirements. Application of electronics, meanwhile, has been enabling gains in vehicle quality and capabilities without adding market-breaking expense. From a systems standpoint, the focus of automotive electronics has changed over time from impressing the customer with sophisticated gadgetry to maximizing safety, performance, and functionality. The electronics revolution has created a boon for the parts aftermarket (despite the increased diagnostics burden at the service level).

As mechanical components incorporate more electronic controls, the change in the parts mix from hardware to software will require significantly different skill sets in diagnostic and repair services. In response, electronics are increasingly being utilized by automotive service providers. For example, repair shops are employing hand-held computers in order to offer better customer service, better familiarize themselves with the vehicle model, and obtain rapid information on safety recalls. More recently, consumers have gained access to affordable diagnostic code readers compatible with common smartphone operating systems. However, due to the technical complexity of some repairs – and a cultural trend away from do-it-yourself (DIY) – consumer capacity to identify a problem is not expected to translate into significant competition for professional service providers.

In addition to providing professionals and consumers with repair information, the internet, particularly in the context of mobile access, is changing how consumers identify a suitable service provider and how providers advertise. Word-of-mouth spreads fast and far; from a simple internet search, consumers read reviews of repair shops in

their area and compare average repair price levels, often without ever contacting an actual service provider. Such reviews typically include scores/ratings on various measures of consumer satisfaction, enabling prospective customers to discriminate based on rank (though ratings may be subject to bias). Consequently, over the historical period, the industry shifted increasing amounts of advertising dollars toward the internet. Furthermore, service providers report that customers commonly use information available on the internet to verify (or challenge) a diagnosis.

Environmental & Regulatory Factors

The US automotive repair and maintenance service industry is impacted by a variety of regulations at the federal, state, and local levels. Regulations typically pertain to the industry's disposal and/or recycle of products, materials, and fluids such as antifreeze, batteries, filters, engine oil and other lubricants, paints, refrigerants, and tires. Notable legislation includes:

- the Comprehensive Environmental Response, Compensation, and Liability Act (or Superfund), which requires notification of the release of hazardous substances and subsequent cleanup;
- the Clean Air Act, which regulates facilities whose operations involve the use or generation of potential air pollutants;
- the Clean Water Act, which sets specific limits on pollutant discharge into a given watershed and makes any discharge into navigable waters from a point source illegal without a permit.

The Occupational Safety and Health Administration enforces workplace health and safety standards.

In January 2008, the Environmental Protection Agency (EPA) finalized the National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources. The regulation includes spray coatings for motor vehicles and requires that automotive spray coatings be applied in a spray booth surrounded by walls or curtains and a complete roof. This area must also be fitted with proper filtration equipment. Existing repair shops not already in compliance with the EPA's new standards were required to make the necessary changes by January 2011.

Proposed regulations can exert a major impact on the industry. For example, restricted access to OEM vehicle diagnostic codes has hindered independent service providers from completing some electronic system diagnosis and repair. As a result, a number of independent repair providers and trade associations have called for federal "Right to Repair" legislation. The purpose of this legislation would be to end what some organizations have called the OEMs' "unfair monopoly" of some repair-related data.

However, as of November 2016, this legislation has only found success at the state level. For instance, in July 2012, the Massachusetts legislature passed a Right to Repair bill, which enables dealers, independent repair locations, and consumers to access OEM tools and repair information. Following the bill's passage, automobile manufacturer and aftermarket associations signed a memorandum of understanding in 2014 to apply the requirements of the Massachusetts law to the entire country, albeit on a voluntary basis.

Another proposal at the federal level, the Promoting Automotive Repair, Trade, and Sales (PARTS) Act, which was introduced in the US House of Representatives in February 2012, is designed to lower the patent period automakers enjoy on their replacement collision parts from 14 to 2.5 years. Supporters of this legislation claim the measure would counter an OEM monopoly on crash parts, which are typically priced higher than parts not under patent protection. The industry is also impacted by government offers of consumer tax credits for the purchase of plug-in hybrid and all-electric vehicles, which is increasing the complexity of vehicles in the park that will eventually require repairs and maintenance that are more technologically advanced. The PARTS Act was most recently re-introduced in February 2015 and went to hearing with the Subcommittee on Courts, Intellectual Property, and the Internet of the House Judiciary Committee in February 2016. No decision was made.

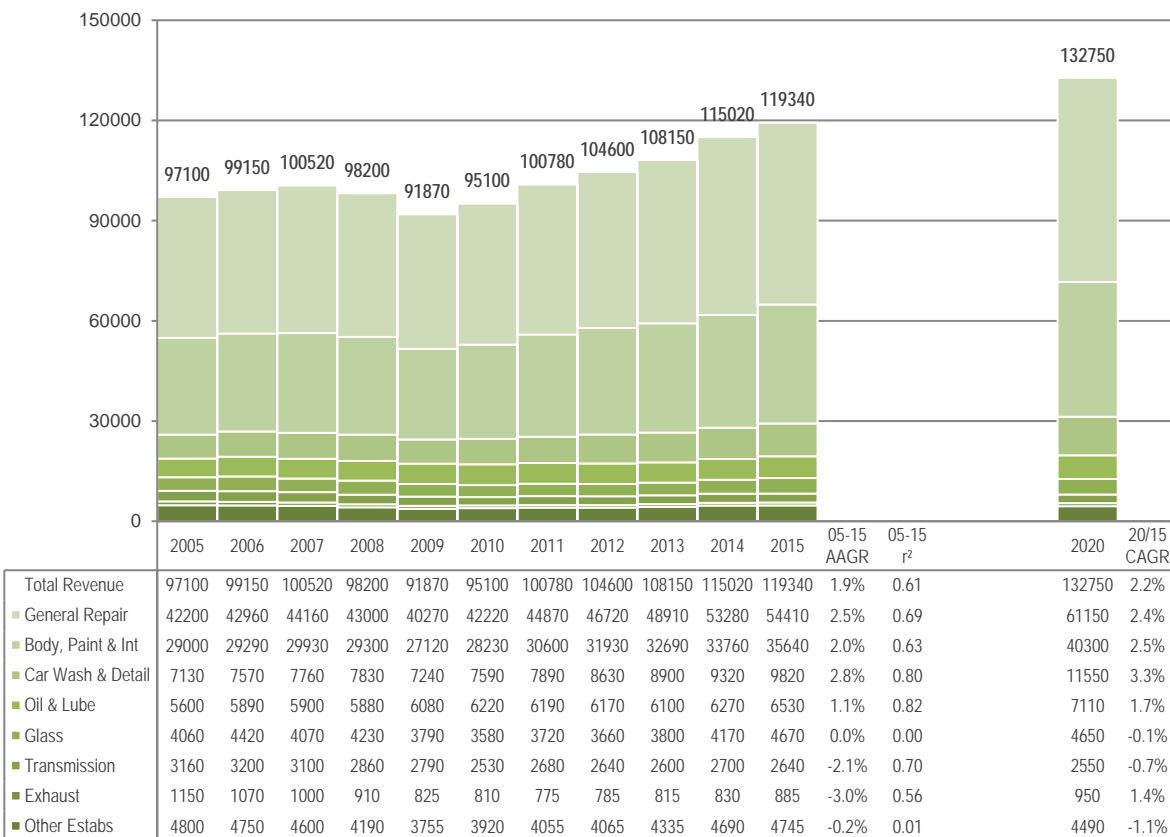
Other automotive repair and maintenance service industry regulations being developed at the state level include those pertaining to repair practices. For example, New York and Maryland have considered bills drafted by the Rubber Manufacturers Association and the Tire Industry Association that would impose fines on establishments that do not follow tire repair procedures recommended by tire producers, attempt to repair tires without removing them from the rim, repair a shoulder puncture, plug a tire on the rim, or repair an illegally repaired tire.

SEGMENTATION & FORECASTS

Establishment Revenues

Revenues generated by US automotive repair and maintenance service establishments are forecast to total \$133 billion in 2020, representing 2.2% annual growth from \$119 billion in 2015. Providers will benefit from expansion in the LV park, the total number of procedures performed, and continued growth in service prices. Intensified technology loadings in LV systems, and resulting increases in complexity of overall repairs and maintenance, will shift more customers from the DIY to the do-it-for-me (DIFM) market, as well as boost service prices. Demographic changes will also propel the flight from DIY. The graying Baby Boom cohort is increasingly unable to repair their own vehicles, while younger generations are increasingly uninterested in doing so, despite a wealth of free repair instructions available via the internet.

Chart 3 | US Auto Repair & Maint Svc Revenue by Estab; 2005-2015, 2020 (US\$ mil)



Sources: US Census Bureau, The Freedonia Group

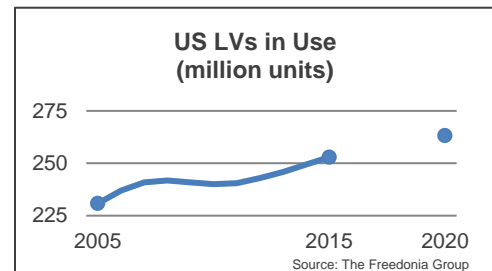
Advances in revenues will also be supported by a favorable outlook for disposable personal income levels, credit availability, and consumer confidence in financing potentially costly LV repairs. Furthermore, many of the vehicles sold in the post-recession release of pent-up demand will approach an age (roughly 6 to 11 years) where costly repairs become more likely, somewhat offsetting the overall slowdown in new vehicle service intervals due to improved durability. Faster advances will be restrained by expected declines in average miles driven per LV.

For the purposes of this report, revenue segments reflect the primary activity of service establishments. In general, service providers experience strong intrasegment competition, particularly between smaller shops and LV dealerships. Larger firms are more likely to organize their activities into establishments oriented around a specific activity. For example, the activities of a dealership service center are commonly reported as a General Repair service, distinct from the dealership's retail sales activities, which are beyond the scope of this report. Similarly, revenues attributable to a body shop affiliated with a service center would be classified under the Body, Paint & Interior segment, rather than General Repair. Dealerships also cannibalize the repair market through the sale of new LVs as a substitute for repairing old ones. Furthermore, providers face competition from consumers themselves, who may opt for DIY repair, particularly for repairs requiring minimal labor and technical expertise.

General Repair. This segment represents revenues attributable to establishments primarily engaged in the provision of a wide range of general mechanical and electrical repair and maintenance services (brakes, fluid systems, oil changes, tires, etc). These establishments commonly include car repair shops, garages, and engine repair and replacement shops, as well as establishments affiliated with dealers. General repair revenues generated by establishments such as combination fuel/service stations are excluded from this segment; such revenues are aggregated into those attributable to each establishments' primary activity. In the case of dealerships that perform service only incidental to the retail of motor vehicles, such revenues are regarded as retail sales

and are excluded. However, this segment includes service revenues generated by repair establishments associated with dealerships, where the firm recognizes repair operations as a significant business apart from the retailing of motor vehicles.

The number of miles driven per LV, the size of the LV park, and disposable personal income levels represent the primary determinants of demand for general repair service. Trends in new vehicle purchases, in combination with trends in manufacturers' warranty duration and breadth, also represent salient factors. Warranty terms often compel the owner of a new vehicle to take their vehicle to a manufacturer-certified dealership, not an independent, when in need of service.

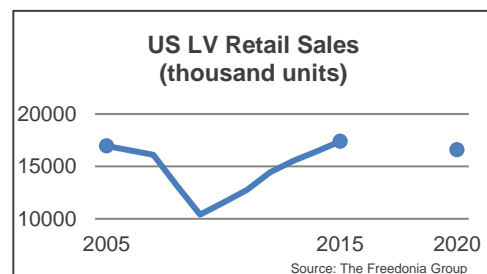


Competition between independent establishments and automobile dealerships intensified throughout the decade to 2015. This trend resulted from longer manufacturers' warranties and expanding penetration of computer-monitored and other complex systems in the vehicle park. Smaller shops struggle, for the most part, due to intensifying demands on their limited resources. The proliferation of new vehicle models and the greater complexity of new vehicles requiring advanced skills and knowledge are making it hard for these firms to survive. Furthermore, garage operators face few options for driving revenue growth through the type of service diversification that benefited quick lube and exhaust establishments over the historical period.

The 2014 Automotive Service Association-Automaker Agreement promises to take some pressure off of smaller establishments, by ensuring that independent repair shops have fair and reasonable access to automakers' repair information and diagnostic codes. Previously, automakers were able to place affiliated dealerships at a competitive advantage by charging independents a different price for access to general repair information. Existing law only required automakers to provide independents with emissions-related service codes.

General repair revenues are projected to increase 2.4% per annum to \$61.2 billion in 2020, remaining the largest discrete segment.

Advances will be supported by expansion in disposable personal income levels as well as the LV park. Independent shops will benefit from a surge in warranty expirations for the numerous LVs purchased during the period of recovery from the



2007-2009 economic recession. In addition, advances in warranty lengths have stalled.

For example, in March 2015, **General Motors Company** announced a contraction in its powertrain warranty coverage on 2016 model-year vehicles from 100,000 miles to 60,000 miles, citing alignment with competitor offerings and inadequate customer perception of value. Furthermore, sales of new, warranty-carrying LVs are expected to decline nearly 1.0% per year through 2020. These factors will boost the likelihood of repairs being performed away from dealerships. A corollary, this shift will restrain value advances relative to the historical period, as dealer-related activities typically command higher prices. Nevertheless, service prices will remain supported by increasing penetration of electronic systems in LV designs. Faster advances will also be restrained by projected decay in miles driven per LV, as fuel prices are expected to rebound from declines seen at the end of the historical period.

Body, Paint & Interior. This segment consists of revenues attributable to establishments for which automotive body, paint, and/or interior repair and maintenance represent the primary activity, such as:

- antique and classic automotive restoration shops
- collision repair shops
- interior repair shops
- paint shops
- upholstery shops.

Revenues for body, paint, and interior service performed by dealerships, general repair garages, and other service establishments are excluded from this segment; such revenues are aggregated into those attributable to each establishments' primary activity.

Notably, the capital- and skill-intensive nature of services in this segment precludes competition from the average DIY consumer.

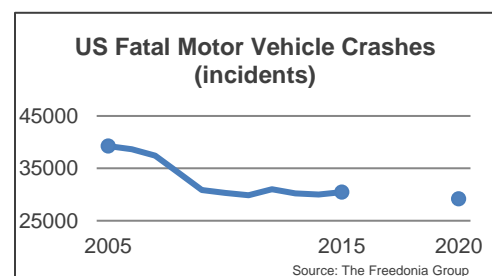
The number of miles driven per LV, incidence of LV crashes, and disposable personal income levels represent the primary determinants of demand for body, paint, and interior services. Value gains are also driven by technological innovations in the motor vehicle industry that increase the expense involved in repair activities.

Body, paint, and interior service establishment revenues are forecast to climb 2.5% per year to \$40.3 billion in 2020. Advances will be driven by increases in repair costs, as the automotive industry continues to transition to advanced materials (eg, aluminum alloy and carbon fiber) and complex manufacturing techniques (eg, translucent paint finishes). In addition, higher technology loading rates per vehicle (eg, rising implementation of crash-avoidance radar systems in vehicle bumpers) will continue to increase the training and technology costs for service providers. Furthermore, rising disposable personal income levels will boost spending on elective services, such as dent repair and the refinishing of faded paint, and luxury services, such as personalized paint jobs and body modifications.

Faster advances will be restrained by an expected decrease in both the number of miles driven per LV and the incidence of LV crashes.

Demographic trends such as the unprecedented safe-driving habits of the Baby Boom generation, which is displacing the older population segments, contribute to this long-term downward trend. In addition, growth in the number of licensed drivers is

expected to continue to slow as younger generations, specifically millennials, lose both interest in vehicle ownership as well as the capacity to afford it. Other pertinent factors include safer roads and increasing penetration of accident-avoidance technology in motor vehicle design. For instance, the National Highway Traffic Safety Administration (NHTSA) requires rear-view “backup” cameras on all vehicles manufactured on or after

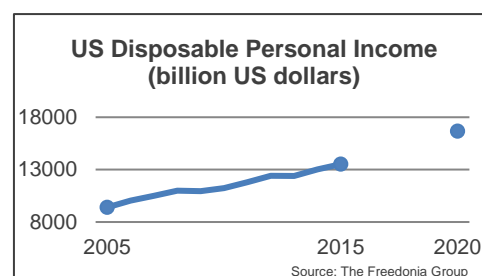


May 1, 2018.

Car Wash & Detail. This segment encompasses revenues generated by establishments primarily engaged in cleaning, washing, and/or waxing of automobiles, such as standalone car washes and combination car washes and detailers. Revenues for car wash and detail services performed by units attached to gas stations, dealerships, garages, retail establishments, and other service establishments are excluded from this segment; such revenues are aggregated into those attributable to each establishments' primary activity.

Disposable personal income levels and miles driven per LV represent key determinants of demand. These establishments provide services not required for the continued operation of a vehicle. Consequently, during economic downturns, consumers commonly down-trade to lower-cost providers, opt for DIY, or forgo car washing and detailing entirely. For example, segment revenues dropped 7.5% in 2009, due to the impact of the economic recession. Meanwhile, sanguine growth of 5.4% in 2015 reflected an above-trend uptick in miles driven per vehicle, a result of low fuel prices. In addition, the service mix is changing somewhat, as higher-priced “laser” or “touchless” car washes – which employ high-pressure sprayers and blowers instead of spinning brushes and rags – become more commonplace.

Car wash and detail revenues are expected to expand 3.3% per year, the fastest pace for any discrete segment, to \$11.6 billion in 2020. Advances will be driven by gains in disposable personal income, which will promote up-trading to higher-cost services, such as custom detailing. Service establishments will also continue to benefit from a long-term trend from DIY to DIFM. However, faster capture of market share will be restrained by trend maturity; DIY accounted for only 27% of car wash activity in 2015. In addition, cleaning chemical companies continue to innovate, with DIY products designed for easier consumer use, such as wash and wax



combinations, detailing sprays, and one-step tire cleaners. Notably, service providers are expected to increasingly explore subscription programs (eg, **WASH ACCESS LOYALTY SYSTEM – PDQ Manufacturing**) as a source of committed revenue. Consumer acceptance of subscription-based business models continues to intensify across the broader economy.

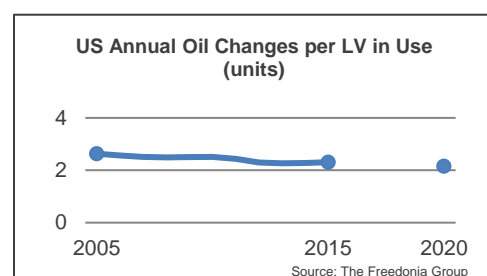
Oil Change & Lubrication. Revenues in this segment are attributable to establishments for which the changing of motor oil and lubrication of automobile chassis represent a primary activity, such as quick lubes. These establishments accounted for roughly 31% of LV engine oil changes performed by professional service providers in 2015. Oil change and lubrication services performed by dealerships, garages, retail establishments, service stations, and other service establishments are excluded from this segment; such revenues are aggregated into those attributable to each establishments' primary activity.

Quick lube operators benefit from consumer preference for convenience and fast service. Most outlets offer a standard service that includes oil change and filter replacement, chassis lubrication, and checking and topping off of transmission, brake, differential, and power steering fluid levels, all performed in a short period of time. The vast out-of-warranty vehicle park represents the core market for these establishments. New car owners are often compelled to bring their vehicle to the dealership where it was originally purchased to satisfy warranty requirements for logged, scheduled maintenance.

Oil change and lubrication establishment revenues are forecast to increase 1.7% per year to \$7.1 billion in 2020. An ongoing shift in consumer preference from DIY to DIFM will continue to boost service volumes, while an ongoing transition from conventional to higher-priced synthetic lubricants, supported by engine manufacturer recommendations, will remain a driver of value gains. Notably, the large population of baby boomers will become less likely to perform their own oil changes and other repairs as the cohort further ages. Moreover, service providers will continue to expand their service offerings,

which boosts customer convenience as a one-stop-shop and supports patronage. Above all else, demand will remain supported by the essential nature of oil changes to the continued normal operation of an engine.

However, the quick lube industry will face substantial challenges to maintaining market share and profitability. Oil changes per LV are expected to fall as drain intervals continue to lengthen and average miles driven per LV return to historical declines. In addition, competition will continue to intensify with other providers, such as Walmart (**Wal-Mart Stores**). Many of these other providers offer a wider range of services, better enabling them to withstand the negative impact of falling demand for oil changes. Furthermore, these outlets lowered their prices over the historical period to compete more effectively with quick lubes. However, this competition drove consolidation activity in the quick lube sector, boosting its resiliency, as larger chains benefit from economies of scale.



Glass. Revenues in this segment are attributable to establishments for which the replacement, repair, and/or tinting of automotive glass represent a primary activity; specifically, dedicated glass service establishments. These firms often employ mobile repair units (eg, **D'leteren** via **Safelite Group's MOBILEGLASSSHOPS**) and perform services at a customer's location. Glass repair revenues generated by establishments primarily engaged in activities other than glass repair, such as body shops or dealer-associated general repair centers, are aggregated into revenues attributable to their primary activity.

Glass repair consists of sealing surface chips and small cracks with a durable material so as to restore appearance and prevent damage expansion. Windows and mirrors are usually only replaced when cracked. The most common type of automotive glass replacement involves windshield and/or side window replacement necessitated by accidents, vandalism, gravel or rocks on the roadway, or debris thrown up from trucks

and other vehicles. As a result, miles driven per vehicle and trends in technology designed to reduce the incidence of traffic collisions represent key determinants of demand. Damage resulting from extreme weather conditions also drives demand. Occasionally, automotive windows and mirrors are replaced for non-functional reasons, such as the installation of color-tinted side windows.

Glass service revenues are forecast to contract marginally each year to \$4.7 billion in 2020. Faster declines in value terms will be prevented by increasing vehicle manufacturer adoption of costly smart glass, including electrochromic windows and heads-up display windshields. Increased use of laminated glass in side windows, in the place of less-expensive tempered glass, will also contribute to gains. Nevertheless, consolidation in the glass repair industry – the rise of large, network participants in particular – is expected to continue driving down average service prices, undermining revenue growth potential for the segment overall. In addition, increasing consumer awareness of glass repair, its lower cost compared to replacement, and the advantage of maintaining a factory-sealed windshield will continue to shift the service mix toward the less costly solution. While demand will remain supported by state laws that require windshields be free of issues that impair vision or safety, many insurance companies cover windshield repair/replacement at little or no cost to the beneficiary. Insurance companies commonly maintain volume discount agreements with repair providers, constraining demand in value terms.

The ongoing use of plastic films as a low-cost alternative to flat glass will continue to restrain revenues in tinting application. These films, which can be applied by professional installers or – at the expense of service providers – by DIYers, range from simple tinted films to films that are designed to increase the impact resistance of the glass, primarily to offer added protection against break-ins, car thefts, and carjackings. Although these products do not offer the same quality as high-performance flat glass products, they are much less expensive.

Transmission. Revenues in this segment are attributable to establishments for which

the replacement or repair of automatic and manual automotive transmissions represents a primary activity; specifically, dedicated transmission and multiservice specialty repair shops. Transmission repair and maintenance revenues generated by establishments primarily engaged in other activities, such as independent and dealer-affiliated general repair garages, are aggregated into revenues attributable to their primary activity.

LV transmissions, automatic in particular, comprise complex mechanical and hydraulic systems. Diagnostic services include external inspection, as well as scanning and reviewing computer system data. Maintenance services include transmission fluid changing, filter replacing, pan gasket replacing, leak checking, and road tests. While service providers may replace whole units, repairs include the adjustment or replacement of individual transmission components.

Primary determinants of demand include technological developments, vehicle park trends, and miles driven per LV. In addition, transmission repair is impractical for most DIYers, limiting competition from outside the professional sphere. Over the historical period, motor vehicle manufacturers, parts providers, and lubricant formulators dramatically increased the durability of powertrain components such as transmissions. In fact, transmission wear characteristics have improved to such an extent that many manufacturers no longer recommend the periodic replacement of transmission lubricant – fill-for-life – obviating demand for the service.

Transmission repair revenues are expected to fall less than 1.0% annually to \$2.6 billion in 2020. Revenue declines inherent to longer service lives will be compounded by a shift in service provider mix away from dealers. The high durability levels of this equipment means much service is not required until vehicles cross the five-year age threshold, where dealers dramatically lose market share due to their higher costs for unwarranted work compared to specialist shops. Faster declines will be prevented by technological developments that increase the expense of repairs. Many automakers are moving toward transmissions with eight or more gears, continuously variable transmissions, or dual clutch transmissions. **Ford Motor Company**, for instance, patented an 11-speed

automatic transmission in 2015. In addition, a resurgence in SUV sales will support price gains, as such vehicles typically feature more complex drivetrain systems. SUV ownership – unlike miles-driven, which is expected to decline in part because of millennials’ aversion to driving – is rising as millennials form new households. The cohort perceives the SUV as a family vehicle, as that’s what many of them experienced.

Exhaust. Revenues in this segment are attributable to establishments for which the replacement or repair of LV exhaust systems represents a primary activity; specifically, undercar specialty firms. Exhaust service revenues generated by establishments primarily engaged in activities other than exhaust repair (eg, independent and dealer-affiliated general repair garages, and tire dealers) are aggregated into revenues attributable to their primary activity.

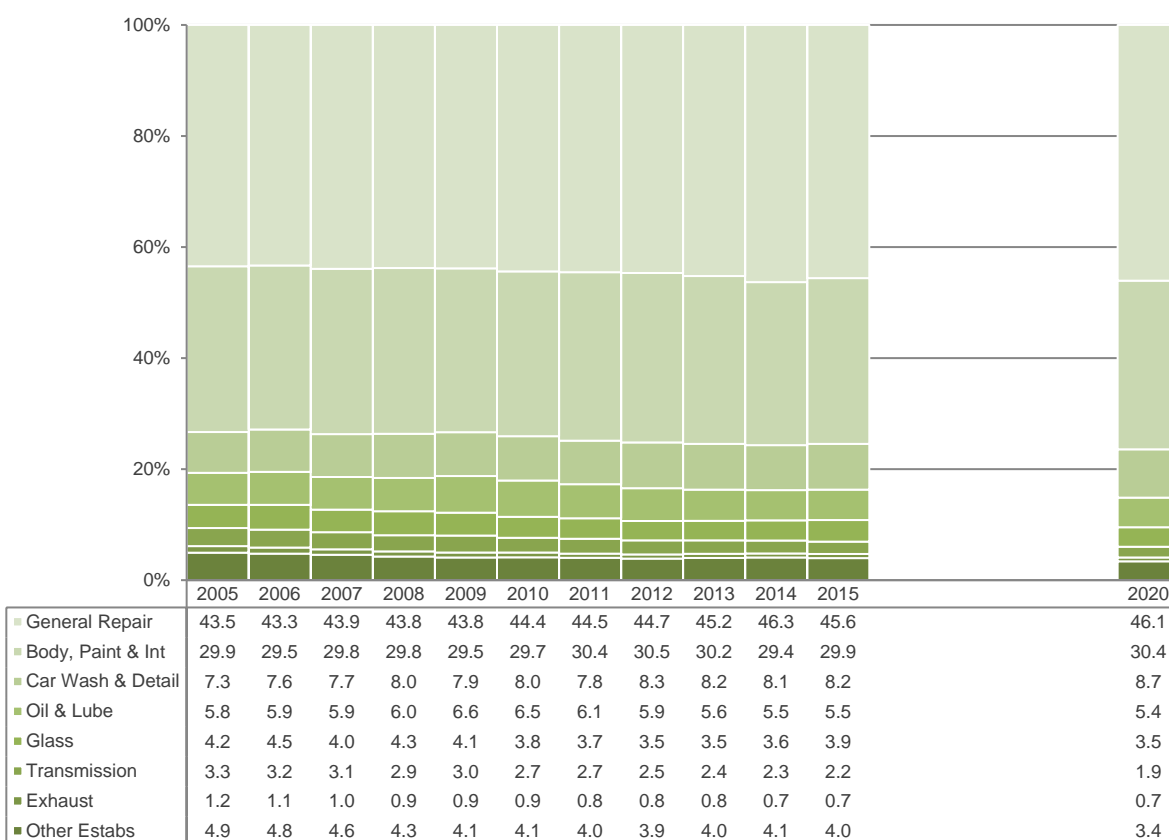
Exhaust systems function to release exhaust gases, reduce engine combustion-related noise levels, and control environmental pollution. Regulatory standards represent a key driver of demand for exhaust/emission system service. In the US, many states maintain regular vehicle emissions testing. If vehicles do not pass the tests, consumers are mandated to pay up to fixed limits to bring their vehicles into compliance, which virtually assures a base level of service demand.

The historical period saw structural decline driven by technological change that improved the durability of exhaust systems and forced many establishments to re-evaluate their place in the automotive repair and maintenance industry. Notably, most of the smaller firms that specialized in exhaust service have long since evolved into multi-service “undercar” specialists – servicing brakes, exhaust, suspension, and tires – resulting in revenue growth through non-namesake service offerings. Larger firms, meanwhile, commonly evolved into general repair providers, resulting in reclassification and structural loss of segment revenue.

Exhaust service revenues are expected to total \$950 million in 2020, representing 1.4% annual growth from 2015 levels. Service providers will continue to benefit from the

effects of regulatory change on the LV pool, as a generation of vehicles produced with long-lasting but complicated and costly emissions systems has begun rolling into repair shops. Intensified emissions standards have led to the addition of more exhaust components per vehicle, such as close-coupled, “quick light off” catalytic converters mounted right behind the exhaust manifolds. Combined with lengthening vehicle service lives, these design changes built in structural support for the service industry, albeit at a time lag. Furthermore, as the reorganization activities recorded over the historical period have moderated, segment trends are expected to increasingly resemble general repair.

Chart 4 | US Auto Repair & Maint Svc Revenue by Estab Share; 2005-2015, 2020 (%)



Sources: US Census Bureau, The Freedonia Group

Other Establishments. This segment encompasses revenues attributable to all other automotive repair and maintenance service establishments, such as those specialized in:

- air conditioner repair
- rustproofing and undercoating

- brake repair
- diagnostic services
- electrical repair
- front-end alignment
- radiator repair
- safety inspection
- suspension repair
- spray-on bedliner installation
- tire repair.

Revenues attributable to automotive repair and maintenance services provided by firms specialized in retail, such as tire dealers, are excluded unless such firms maintain separate establishments for maintenance and repair activities.

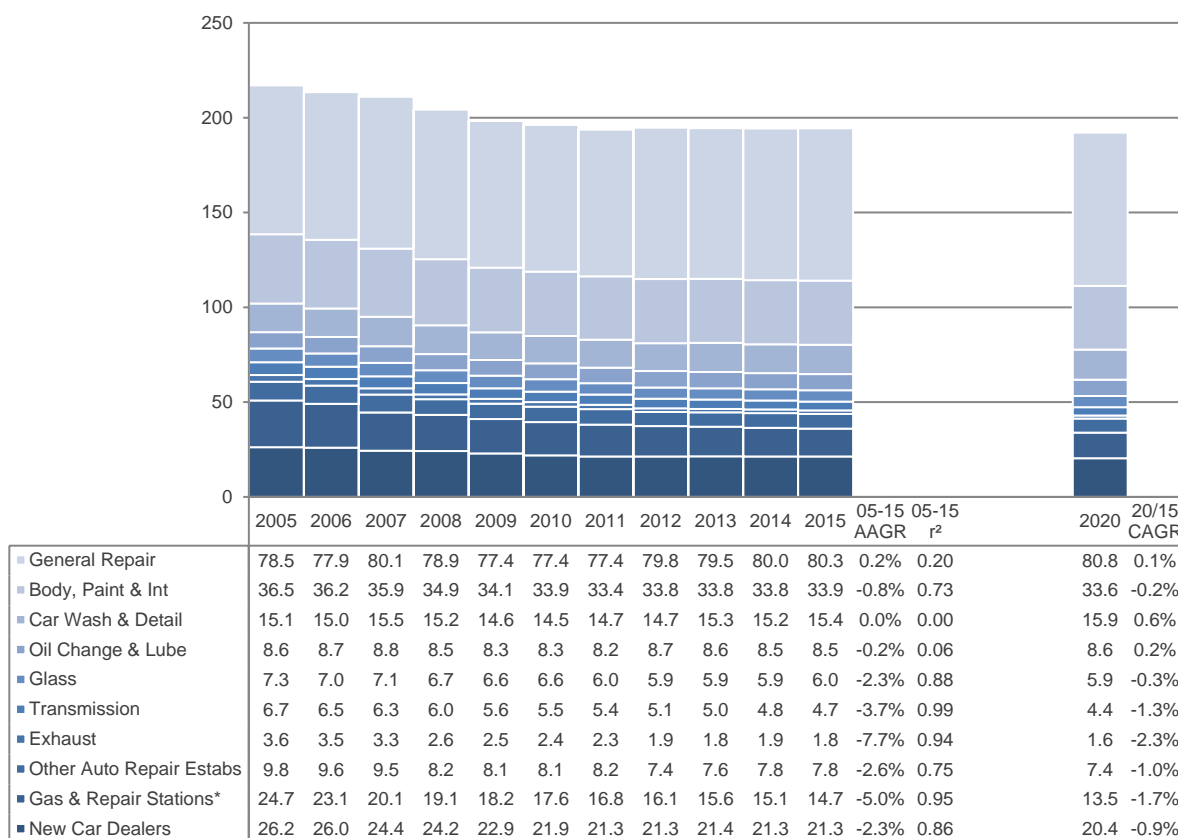
Other automotive repair and maintenance service revenues, as an aggregate, are forecast to fall 1.1% per year to \$4.5 billion in 2020. Declines will result from a retreat in miles driven per LV as fuel prices rebound. In addition, intensifying inter-segment competition will continue to suppress opportunities as general repair, oil and lube, and other establishments further expand into the offerings of the specialists in this aggregate.

INDUSTRY STRUCTURE

Industry Composition & Characteristics

The US automotive repair and maintenance service industry primarily serves the domestic market. The physical nature of repair work – the need for service providers to perform work in-person – precludes the possibility of “export” revenues.

Chart 5 | US Auto Repair & Maint Svc Employer Estabs by Type; 2005-2015, 2020 ('000 units)



*excludes gas stations primarily engaged in fuel retail in combination with a convenience store or food mart
Sources: US Bureau of Labor Statistics, US Census Bureau, The Freedonia Group

The vast number of service categories in the industry means no single provider meets all needs; the range of specialized capital and labor required is too extensive. New vehicle dealers feature the highest combination of breadth (the number of different service categories covered) and depth (ie, the extent of specialization in any one category) for a particular brand of vehicle. However, the extreme breadth of the market means that many companies can succeed by providing extensive depth in a particular

service category for the majority of brands (eg, glass, exhaust). Among service providers, the market tends to be fragmented; a prolific number of single-site, nonemployer, “mom and pop” facilities compete with integrated service centers such as branded OEM networks.

Primary competitive factors include:

- certifications (eg, ASE – National Institute for Automotive Service Excellence, and motor vehicle manufacturer) and guarantees
- cost
- reputation
- speed.

Representative providers of automotive repair and maintenance service to the US market in 2015 included **AutoNation**, **Boyd Group Income Fund** (via its operating company, **The Boyd Group**), and **Wash Depot Holdings**.

Table 2 | US Representative Automotive Repair & Maintenance Service Providers

Company	Gen	Body	Wash	Oil	Glass	Trans	Exhst
AAMCO Transmissions						•	
ABRA Auto Body & Glass		•					
Ashland				•			
Autobell Car Wash			•				
AutoNation	•						
The Boyd Group		•					
Bridgestone Corporation	•						
Caliber Collision		•					
D’Ieteren					•		
Exxon Mobil Corporation				•			
Group 1 Automotive	•						
Harmon Glass Doctor					•		
Maaco Franchising		•					
Meineke Car Care Centers	•						
Monro Muffler Brake							•
Penske Automotive Group	•						
Royal Dutch Shell				•			
Service King Paint & Body		•					
Wal-Mart Stores	•						
Wash Depot Holdings			•				

Sources: company filings, The Freedonia Group

Company Profile 1 | AutoNation Inc

Corporate Summary

AutoNation, the largest automotive retailer in the US offering both new and used vehicles, ranked among the leading providers of automotive repair and maintenance services to the US market in 2015. The company maintains three reportable segments: Domestic, Import, and Premium Luxury. The company also reports operating data by product and service offering in terms of: New Vehicle, Used Vehicle, Parts and Service, Finance and Insurance, and Other.

Contact Information

200 Southwest 1st Avenue
 Fort Lauderdale, Florida 33301
 USA
 +1-954-769-6000
www.autonation.com

2015 Highlights (US\$ mil)

Total Revenue	20,862
Gross Margin (percent)	15.6
Total Assets	9,558
Employees (number of persons)	26,000
Major Stock Listing	NYSE:AN

Operations in Scope

Parts & Service

AutoNation participates in the US market for automotive repair and maintenance services through its Parts and Service operations. Via these operations, the company offers automotive repairs and sells related parts, paid for by customers or through reimbursement from OEMs and others under warranties.

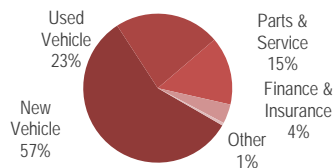
Major Dealership Brands

APPLEWAY
CHAMPION
GO
MULLINAX
POWER
TEAM

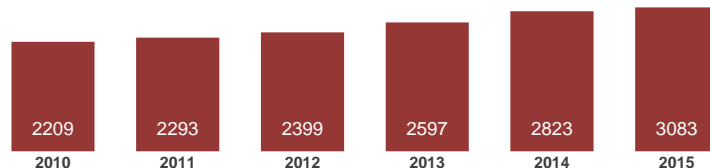
2015 AutoNation Highlights

- Maintained 342 new vehicle franchises from 254 US stores.
- Factory trained and certified technicians.
- 7-day service at select locations.
- Extended hours on weekends and weekdays at select locations.

2015 Total Revenue by Operation



AutoNation Parts & Service Segment Revenue (US\$ mil)



Market Position

Acquisitions & Divestitures

2016 Feb	Purchased 12 stores and related assets.
2015	Acquired 22 stores and related assets. Divested 3 import stores.
2014	Purchased 5 stores and related assets. Divested 2 import stores and customer lead distribution business.
2013	Acquired 5 stores and related assets.

Other Company News

2015 May	Announced an AUTONATION branded vehicle protection plan.
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Sources: company reports, press articles

Company Profile 2 | Boyd Group Income Fund

Corporate Summary

Boyd Group Income Fund – through its operating company, The Boyd Group – ranked among the leading providers of automotive repair and maintenance services to the US market in 2015. The company maintains one reportable line of business, but for disclosure purposes, segments sales by geography in terms of: Canada and United States.

Contact Information

3570 Portage Avenue
Winnipeg, Manitoba R3K 0Z8
Canada

+1-204-895-1244

www.boydgroup.com

2015 Highlights (US\$ mil)

Total Sales	1,174
Gross Margin (percent)	45.7
Total Assets	639
Employees (number of persons)	5,922
US Sales	1,091
Major Stock Listing	TSX:BYD.UN

Segment in Scope

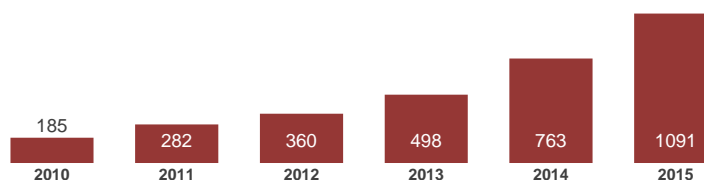
United States

The Boyd Group participates in the US market for automotive repair and maintenance services through its US operations, which provide auto body, collision, and glass services. In 2015, the company operated 311 locations in 19 states under the trade name Gerber Collision & Glass.

Key Markets

- Insurance companies
- Individual vehicle owners
- Fleet and lease customers

The Boyd Group United States Sales (US\$ mil)



Market Position

Acquisitions

2016 Mar	Signed a definitive agreement and concurrently completed the acquisition of J&M Auto Import Rebuilding and Canby J&M Automotive. Acquired, through its Glass America subsidiary, the glass repair assets of Ryan's Auto Glass.
2015 Jan	Purchased assets of Craftmaster Auto Body Group, a collision repair provider possessing 6 locations in Florida.
2014 Sep	Acquired Champ's Holding Company, a full-service auto collision repair service provider in southeast Louisiana, that owned and operated 7 repair centers.
2014 Jun	Purchased Collex Collision Experts and Collex Collision Experts of Florida, which owned and operated 16 collision repair centers in Michigan and Florida.
2014 Apr	Acquired Dora Holdings, which owned and operated 25 collision repair centers in Illinois, Indiana, and Florida.

Sources: company reports, press articles

Company Profile 3 | Wash Depot Holdings Inc

Corporate Summary

Wash Depot Holdings, a private holding company that operates car washes and lubrication centers, represented a leading provider of automotive repair and maintenance services to the US market in 2015.

Contact Information

14 Summer Street, Suite 302
 Malden, Massachusetts 02148
 USA
 +1-781-324-2000
www.washdepot.com

Annual Highlights*

Revenues (million US dollars)	100
Employees (number of persons)	1400

*estimated

Operations in Scope

Wash Depot Holdings participates in the US market for automotive repair and maintenance services through the provision of car wash and lubrication services. The company's car wash services include exterior wash and interior vacuuming, as well as cleaning of windows, dashboards, cup holders, consoles, and door jams. Detailing services include polishing with **MEGUIAR'S** wax and carpet shampoo. Lubrication centers include **MOBIL 1 LUBE EXPRESS** service.

Major Brands

EAGER BEAVER CAR WASH
SIMONIZ CAR WASH
SPARKLING IMAGE CAR WASH

Locations

- | | |
|---|---|
| <ul style="list-style-type: none"> • California (10) • Florida (14) • Georgia (2) • Indiana (5) | <ul style="list-style-type: none"> • Massachusetts (4) • New Hampshire (1) • Tennessee (4) • Texas (10) |
|---|---|

Market Position

Divestiture

2013 Jun FBOP Corporation sold Wash Depot Holdings to members of the latter company's management.

Sources: company reports, press articles

Additional Companies Cited

AAMCO Transmissions Inc	www.aamco.com
ABRA Auto Body & Glass	www.abraauto.com
Ashland Inc (NYSE:ASH)	www.ashland.com
Valvoline Instant Oil Change	http://vioc.com
Autobell Car Wash Inc	www.autobell.com
Bridgestone Corporation (TSE:5108)	www.bridgestone.com
Firestone Complete Auto Care	www.firestonecompleteautocare.com
Caliber Collision	www.calibercollision.com
D'leteren SA (EBR:DIE)	www.dieteren.com
Safelite Group Inc	www.safelite.com
Exxon Mobil Corporation (NYSE:XOM)	www.exxonmobil.com
Mobil 1 Lube Express	https://mobiloil.com
Group 1 Automotive Inc (NYSE:GPI)	www.group1auto.com
Harmon Glass Doctor	www.glassdoctor.com
Maaco Franchising Inc	www.maaco.com
Meineke Car Care Centers Inc	www.meineke.com
Monro Muffler Brake Inc (NASDAQ:MNRO)	www.monro.com
Penske Automotive Group Inc (NYSE:PAG)	www.penskeautomotive.com
Royal Dutch Shell plc (NYSE:RDS.A & RDS.B; AEX:RDS.A & RDS.B)	www.shell.com
Jiffy Lube International Inc	www.jiffylube.com
Pennzoil	www.pennzoil.com
Service King Paint & Body LLC	http://serviceking.com
Wal-Mart Stores Inc (NYSE:WMT)	http://corporate.walmart.com

RESOURCES

The Freedonia Group

www.freedoniagroup.com

Related Industry Studies

3449 World Flat Glass, August 2016

[see study contents](#)

3424 Industrial & Institutional Cleaning Chemicals, June 2016

[see study contents](#)

3418 World Paint & Coatings, June 2016

[see study contents](#)

3394 Lubricants, April 2016

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3357 World Tires, November 2015

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Related Focus Reports

Motor Vehicle Biofuels: United States

[see report contents](#)

Motor Vehicles: United States

[see report contents](#)

Repair Services: United States

[see report contents](#)

Freedonia Custom Research

[see capabilities](#)

Trade Publications

AGRR Magazine

www.agrrmag.com

Automotive Engineering

<http://magazine.sae.org/auto>

Automotive Industries

www.ai-online.com

Automotive News

www.autonews.com

BodyShop Business

www.bodyshopbusiness.com

WardsAuto

<http://wardsauto.com>

Agencies & Associations

Alliance of Automobile Manufacturers

www.autoalliance.org

Auto Care Association

www.autocare.org

Automotive Aftermarket Suppliers Association

www.aftermarketsuppliers.org

Automotive Service Association

<http://asashop.org>

The Coalition for Auto Repair Equality

www.careauto.org

National Automobile Dealers Association

www.nada.org

Occupational Safety and Health Administration

www.osha.gov

Rubber Manufacturers Association

www.rma.org

Tire Industry Association

www.tireindustry.org

United States Census Bureau

www.census.gov

United States Department of Transportation

www.transportation.gov

Bureau of Transportation Statistics

www.bts.gov

United States Environmental Protection Agency

www.epa.gov

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